Andrews University

School of Education

AN INTERNATIONAL SURVEY OF COORDINATORS IN K-12 SCHOOLS IMPLEMENTING CURRICULUM VIDEOCONFERENCING

A Proposal

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TABLE OF CONTENTS

Chapter
I. INTRODUCTION 1

Background of the Problem 1
Statement of the Problem 3
Purpose of Study 4
Research Questions 4
Rationale for the Study 5
Theoretical Framework 6
Significance of the Study 7
Definitions and Operational Definitions 8
Videoconferencing 8
Videoconferencing 9
ISDN Videoconferencing 9
IP Videoconferencing 9
Curriculum Videoconferencing 9
Content Provider 10
Student Project 10
Classroom-to-classroom Collaboration 10
Utilization 11
Videoconference Coordinator 11
Videoconference Coordinator 11
Supporting Videoconferencing 12
Curriculum Integration 12
Working with Teachers 13
Technical Aspects 13
Administrative Support 14
Assumptions 14
General Methodology 15
Delimitations 15
Summary 16

II. LITERATURE REVIEW 17

Introduction 17
Videoconferencing 18
Curriculum Videoconferencing 21
Content Providers 22
Projects and Collaborations 24

Implementation of Videoconferencing 25
Utilization 27
Demographic Variables of the School 28
The Role of the Videoconference Coordinator 29
Demographic Variables of the Coordinator 30
The Coordinator's Ability to Support Videoconferencing 31
The Coordinator's Ability to Integrate Videoconferencing in the Curriculum 31
The Coordinator's Ability to Work with Teachers 32
The Coordinator and the Technology 33
The Coordinator's Access to Support 33
Summary 34

III. METHODOLOGY 36

Introduction 36
Research Design 36
Description of the Population 37
Variables 39
School Demographic Variables 40
Coordinator Demographic Variables 41
Utilization 42
Coordinator's Ability to Support Videoconferencing 44
Curriculum Integration 44
Working with Teachers 44
Technology Aspects 45
Administrative Support 46
Research Hypotheses 46
Instrumentation 47
Reliability 49
Validity 49
Pilot Studies 53
Procedures 54
Statistical Analysis 55
Limitations 56
Summary 56

Appendix

A. SURVEY INSTRUMENT 57

B. PILOT SURVEY 64

C. PILOT STUDY RESULTS 69

D. LISTSERV PERMISSIONS 73

Center for Interactive Learning and Collaboration (CILC) Listserv 73
Collaboration Collage Listserv (AT&T or Edvidconf1) 74

K12 IVC Listserv....75
Megaconference Jr. Listserv....76
TWICE (Two Way Interactive Connections in Education) Permission....77

REFERENCE LIST....78

CHAPTER I

INTRODUCTION

Background of the Problem

Videoconferencing is becoming one of the popular educational innovations of the 21st century. In 2006, 25% of schools in the United States had access to videoconferencing within their school (Greenberg, 2006). Schools are using videoconferencing for traditional course delivery, professional development, and meetings -- the first wave of videoconferencing. The second and third waves of videoconferencing provide curriculum-based experiences for K-12 students (Greenberg, 2006). Students are interacting with peers, experts, and content providers to enhance their learning in core curriculum areas. Some content providers, such as the Center of Science and Industry (COSI) in Columbus, OH, are overwhelmed by the response to their programs. COSI offers students the opportunity to interact with surgeons during heart, knee, or lung cancer surgeries. In addition, students are connecting and collaborating with peers internationally. For example, the Global Nomads Group facilitated a conversation between students in the U.S. and Iraq in 2003 just before the Iraq War began. They also have facilitated discussions between schools in North America and survivors of the genocide in Rwanda (Morrison & Macquart, 2006). These experiences are just a few examples of the quality learning experiences videoconferencing affords to K-12 schools.

Videoconferencing is a key tool for assisting students in becoming comfortable with global communication (Cifuentes & Murphy, 2000; Howland & Wedman, 2003; Jones & Sorenson, 2001; C. Kinginger, 1998; Naruse, Yamanishi, & Farrell, 2003; Ramirez, 1998; Szente, 2003; Thurston, 2004). In a global economy, some project work within companies follows time zones resulting in 24-hour work on a given project. With work being accomplished in multiple countries around the world, students need an increased understanding and appreciation of cultures and peoples. In addition, companies are increasingly outsourcing U.S. service, technology, manufacturing, financial, and other jobs to firms overseas. Thus, our students more than ever need to be competitive, creative problem solvers with the ability to communicate globally (Friedman, 2005). Using inexpensive IP-based videoconference technology students can communicate with peers around the world to solve problems, discuss global issues, and complete collaborative projects, just as they will in the workplace after they graduate.

Videoconference technology allows students to meet international technology standards. The International Society for Technology in Education publishes National Educational Technology Standards for Students (ISTE, 2007). There are six standards covering various technology skills. The second standard emphasizes the need for students to use technology to communicate, interact, and collaborate with peers.

> 2. Communication and Collaboration
> Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:
> a. interact, collaborate, and publish with peers, experts or others employing a variety of digital environments and media.
> b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.
> c. develop cultural understanding and global awareness by engaging with learners of other cultures.
> d. contribute to project teams to produce original works or solve problems. (ISTE, 2007, p. 1)

Students can share solutions and products with peer audiences around the world via videoconference; collaborate with peers and experts to investigate curriculum-related problems and issues; access remote information and experts; and discuss and investigate issues with peers globally.

Statement of the Problem

Videoconferencing has the potential to bring quality learning experiences to students in the classroom as they connect with experts and peers around the world. Whereas 25% of schools in the United States have access to videoconferencing (Greenberg, 2006), how many of them are using videoconferencing consistently across grade levels and subject areas to impact student learning? While no firm figures are available, my conversations with colleagues across the United States and Canada and experience with schools in southwestern Michigan suggest that some schools have limited utilization. New equipment sometimes sits collecting dust on shelves and in closets.

Currie (2007) suggests that factors affecting successful implementation of videoconferencing include access to professional development, funding for programming, access to videoconferencing system within the school, providing a dedicated support person for videoconferencing, and support from administration. In addition, Wakefield (1999) and Keefe (2003) emphasize the role of the site facilitator as critical to the successful implementation of videoconferencing. These studies have revealed factors affecting implementation, including the role of the videoconference coordinator, the person who is responsible for videoconferencing in the school. The role of the coordinator and factors affecting their ability to support videoconferencing in relationship to the utilization of videoconferencing in the school have not been

thoroughly studied. The focus of this study is the videoconference coordinator and their influence on the utilization of videoconferencing in the school.

Purpose of Study

This study aims to investigate the coordinator's ability to support videoconferencing, to integrate videoconferencing in the curriculum, to work with teachers, and the technical and administrative issues that may affect the coordinator's ability to support videoconferencing. This study will analyze how these factors may predict the utilization videoconferencing in the school.

Research Questions

The research questions center around the function and role of the videoconference coordinator, the technical aspects of videoconferencing, and the support structures for the coordinator and teachers using videoconferencing.

1. How does the coordinator's ability to support videoconferencing predict the utilization of videoconferencing in the school?

2. How does the coordinator's ability to integrate videoconferencing in the curriculum predict the utilization of videoconferencing in the school?

3. How does the coordinator's ability to work with and support the teachers in using videoconferencing predict the utilization of videoconferencing in the school?

4. How does the location of the videoconferencing system predict the utilization of videoconferencing in the school?

5. How does the quality of the videoconferencing predict the utilization of videoconferencing in the school?

5. How do the administrative, financial, and technology support structures predict the utilization of videoconferencing in the school?

7. Do the demographic variables of the coordinator predict the utilization of videoconferencing in the school?

8. Do the demographic variables of the school predict the utilization of videoconferencing in the school?

9. Do any of the above variables or combinations of variables predict the utilization of videoconferencing?

Rationale for the Study

Research has been done on the effectiveness of videoconferencing (Carville & Mitchell, 2001), the use of videoconferencing to promote literacy (Szente, 2003), the benefits to multicultural understanding (Cifuentes & Murphy, 2000), the benefits of access to remote scientists and experts (Barshinger & Ray, 1998; Kubasko, Jones, Tretter, & Andre, 2007; Lee, 2004; McCombs, Ufnar, & Shepherd, 2007; Shaklee, 1998). These studies support the benefits of curriculum videoconferencing.

Some research has been done on the effective implementation of videoconferencing. Keefe (2003) conducted a case study of one elementary school integrating videoconferencing and found that the ability of the coordinator to assist teachers in integrating the technology in the curriculum was critical. Other important components of a successful program included support from the technology committee, a collaborative decision making process within the school, the coordinator's importance in staff development, and the type of staff development for new teachers and experienced teachers. Currie (2007) conducted a study of the implementation factors at the educational service agency level and found that access to, awareness of, and actual participation in professional development, access to videoconferencing within each school, and personnel at the local level to coordinate videoconferencing, the cost of

programming, and the availability of programming offered by the regional service agency were important factors in the success of the program, whereas the size of the school districts served and the socio-economic homogeneity of the school districts did not impact the success of the videoconferencing program.

Bose (2007) studied the teacher, school, and professional development factors affecting the utilization of videoconferencing and found that teacher characteristics and professional development characteristics were useful to predict utilization of videoconferencing, but that school characteristics did not predict utilization. However, the role of the school videoconference coordinator as an advocate and supporter of curriculum videoconferencing and the specific relationship to utilization of videoconferencing in the school has not been studied.

Theoretical Framework

According to Bruce and Showers (1988), a coach is essential to the successful integration of new knowledge into current teacher practice. The coach provides follow-up to training, helps the teachers use newly learned strategies, and partners with the teachers to implement a new strategy. Videoconference coordinators can serve as coaches for the other teachers in the school. They can serve as the first point of contact, support the use of videoconferencing, and assist the other teachers in finding quality videoconference experiences for their curriculum. Their understanding of curriculum integration of videoconferencing, their attitudes towards technology and videoconferencing, and the resources they are provided with for the support of the teachers impacts the way teachers use videoconferencing in their curriculum. In my experience, the videoconference coordinator is a key person affecting the utilization of videoconferencing for the school. Studying the utilization of videoconferencing from the perspective of the

videoconference coordinator will provide new insights into the successful implementation of videoconferencing in K-12 schools.

The videoconferencing coordinator may or may not have an official leadership position in the school. However, Kotter (1996) asserts that leadership is fundamentally about change and making change happen. In this definition of leadership, the coordinator may be able to affect change as the school implements videoconferencing. In addition, servant leadership is about influencing others (Greenleaf, 1977). Coordinators who are successful are able to influence and encourage teachers in their school to use videoconferencing to benefit students.

Significance of the Study

Schools are implementing videoconferencing with varying levels of use. Factors centering around the coordinator's ability to support videoconferencing in the school may predict the utilization of videoconference. These factors may be important to the effective implementation of videoconferencing. Wakefield (1999) studied site facilitators in many roles, including supporting videoconferencing for full course delivery and meetings. The videoconference coordinator and factors affecting their ability to support videoconferencing are critical components that make for successful implementation (Currie, 2007; Keefe, 2003). A study specifically on the role and essential characteristics of the videoconference coordinator in K-12 schools is needed. This study will assist in clarifying the most important factors so that schools can effectively plan implementation of videoconferencing. School districts implementing videoconferencing will have a clearer picture of the support structure necessary for successful utilization of videoconferencing. Trainers and consultants who offer professional development and support for videoconference coordinators will have a better understanding of how to

provide appropriate targeted training and support for the coordinators. School administrators will have research to guide them in selecting the most appropriate advocate for videoconferencing in their school when they acquire equipment. Vendors selling videoconferencing equipment will be able to advise schools on the critical components necessary for successful utilization of curriculum videoconferencing.

Definitions and Operational Definitions

This study focuses on the role of the coordinator in supporting videoconferencing as related to the utilization of curriculum videoconferencing in the school. The definitions are organized into two categories. The first category, videoconferencing, includes videoconferencing in general, curriculum videoconferencing, and how utilization of videoconferencing is defined in this study. The second category addresses the coordinator, their ability to support videoconferencing, to integrate videoconferencing in the curriculum, and to work with teachers. In addition, the coordinator section addresses the technical aspects and administrative support that may affect utilization within the school.

Videoconferencing

This section of definitions covers the broad definition of videoconferencing used in this study and specifically the curriculum videoconferencing used in K12 schools. It also includes the definition of utilization which will be compared to the coordinator variables in this study.

Videoconferencing

Videoconferencing technology "allows people at two or more locations to see and hear each other at the same time" (AT&T, 2007). This study focuses specifically on IP and ISDN videoconferencing as opposed to web camera and desktop videoconferencing using other protocols.

ISDN Videoconferencing

ISDN videoconferencing "connects through existing phone infrastructure" and has been the most widely used connection (AT&T, 2007) until around 2003.

IP Videoconferencing

IP videoconferencing "uses an internet protocol" named H.323 and can be used on a school's "existing connection to the Internet" (AT&T, 2007). Because of the increased network bandwidth in schools, and the lack of fees associated with ISDN videoconferencing, in the last three years, many schools and content providers have migrated from ISDN to IP videoconferencing.

Curriculum Videoconferencing

A broad term encompassing videoconferences where students connect with content providers, guest experts, authors, other classrooms, and international students for cultural exchanges (Lim, 2007, September 28) as opposed to full length daily courses or the use of videoconferencing for administrative and professional development purposes. I believe that integrating videoconferencing experiences in the classroom is fundamentally different than daily course delivery via videoconferencing. It is similar to the difference between using Internet resources to supplement the curriculum and using the Internet to

deliver a full course. This study focuses on the specific use of curriculum videoconferencing in the school.

Curriculum videoconferencing is comprised of three main types of instructional events: connecting to content providers, participating in student projects, and creating and generating classroom-to-classroom collaborations.

Content Provider

A content provider is an organization such as a museum, zoo, university, or other organization that offers programming to schools. Programming usually consists of 45 minutes to one hour lessons that are accompanied by pre and post activities (Greenberg, 2003).

Student Project

A student project is an "opportunity to learn with another school or classroom" (TWICE, 2007). These projects are

> centrally managed and coordinated by one or more persons. Information about how to participate is provided, dates and times are set, teacher training may or may not be required. … Interactions and presentations vary according to level of coordinator and training of teachers and building coordinators. Monster Match and Read Around the Planet are two top rated IVC projects that newbies can be successful in. (Glaser, 2008).

Classroom-to-classroom Collaboration

Classroom-to-classroom collaborations are also called Kid 2 Kid collaborations.

> [They] are different from student projects in that a K2K collaboration the entire IVC event begins with an idea from a teacher. Then we find a partner for the teacher. Then we test the equipment. Most classroom collaborations are point-to-point, although not all. The teacher with the beginning idea should also have some idea of what they want their partner class to do (Glaser, 2008).

Utilization

The utilization of videoconferencing can be defined with three measures. First, the total number of events may include professional development, meetings, connections to content providers, and collaborative projects. The total number of curriculum events that involve students is another useful measure. However, the total events is not easily compared across various sizes of schools. Therefore, dividing these numbers by the number of students in the school would allow for comparison across various sized schools. The third measure would be the percentage of teachers in the school that use videoconferencing. This measure would provide a picture of how well videoconferencing has been integrated throughout all grade levels and classes within the school. Utilization will be measured by items 27-32 on the survey in Appendix A. In this study, utilization will be compared to demographic variables about the coordinator and the school, the variables on how to the coordinator supports videoconferencing, integrates videoconferencing in the curriculum, works with the teachers, relates to the technical aspects, and is supported by administration.

Videoconference Coordinator

The next set of definitions addresses the role and characteristics of the videoconference coordinator that may affect the utilization of videoconferencing. It also includes the technical aspects and administrative support that may affect the coordinator's work and therefore potentially the utilization of videoconferencing.

Videoconference Coordinator

This study uses the term videoconference coordinator to denote the person responsible for curriculum videoconferencing in the school. Wakefield (1999) uses the term site facilitator to include the roles of technical support, scheduler, liaison, policy

enforcer, administrative assistant, teaching assistant, tutor, counselor, and student. This study narrows Wakefield's definition to that of technical support and scheduler and adds the role of advocate and instructional consultant (Straessle, 2000).

This study focuses on five areas of the coordinator's work in implementing videoconferencing in the school: the coordinator's ability to support videoconferencing, to integrate videoconferencing in the curriculum, to work with teachers, how the technical aspects affect their work, and the administrative and technology support structures in place to support the coordinator. These areas are defined next.

Supporting Videoconferencing

This study will compare the coordinator's ability to support videoconferencing with the utilization of videoconferencing. This includes several components: their level of comfort with technology in general (Bose, 2007), their comfort level with videoconferencing, and their ability to use the videoconference controls (Wakefield, 1999). It also includes their experience with videoconferencing, the training they have received, their ability to keep track of the scheduling, their ability to conduct test calls and make the connections work, and their ability to help teachers and students with the videoconference (Currie, 2007; Keefe, 2003; Wakefield, 1999). This will be measured by items 38-45 in the survey shown in Appendix A. The Instrumentation section in Chapter 3 shows in further detail how these items are based in the literature.

Curriculum Integration

This study will compare the coordinator's ability to integrate videoconferencing in the curriculum with the school's utilization of videoconferencing. This includes a knowledge of the programs available and how they fit the curriculum, the ability to search for and share information about programs, the ability to find and share

recommendations by other teachers, the ability to assist in preparing students for the videoconference, and the teachers' understanding of how to use videoconferencing in the curriculum (Keefe, 2003; Wakefield, 1999). This area will also be measured by type of training they have received and whether it included how to integrate videoconferencing in the curriculum. This will be measured by items 46-49 in the survey shown in Appendix A. The Instrumentation section in Chapter 3 shows in further detail how these items are based in the literature.

Working with Teachers

This study will compare the coordinator's ability to work with teachers with the school's utilization of videoconferencing. This includes the coordinator's perception of teachers' interest in videoconferencing, the teachers' ability to participate in a videoconference on their own, the coordinator's ability to encourage and motivate teachers to use videoconferencing, and helping the teachers make time for videoconferencing in their curriculum (Freed & Lim, 2006). This will be measured by items 50-52 in the survey shown in Appendix A. The Instrumentation section in Chapter 3 shows in further detail how these items are based in the literature.

Technical Aspects

There may be some technical aspects of videoconferencing that help or hinder the coordinator in supporting videoconferencing in the school and therefore may affect the utilization of videoconferencing. The technology infrastructure is essential to successful implementation (Keefe, 2003). This includes the location of the equipment (Currie, 2007), the reasons for the location of the equipment, and the level of satisfaction with the current location of the equipment. In addition, the quality of the sound and video in a videoconference can affect the user's satisfaction with the experience (Wegge, 2006).

Technical quality in this study is defined by how often the picture freezes or breaks up, and how often the audio is hard to understand. The location of the equipment will be measured by items 33-35 and the quality of the videoconference will be measured by items 36-37 in the survey shown in Appendix A. The Instrumentation section in Chapter 3 shows in further detail how these items are based in the literature.

Administrative Support

The coordinator's ability to support videoconferencing may be affected by the support they receive. The support they need includes both administrative support and technical support. In this study, the administrative support includes the availability of technical support, the funding for programming, and the amount of time provided by the school for the coordinator to support videoconferencing (Currie, 2007; Keefe, 2003). It also includes the principal's experience with videoconferencing, and the principal's recommendations that teachers use videoconferencing (Freed & Lim, 2006). This will be measured by items 13-14, 22-26, 30-31, and 59-60 in the survey shown in Appendix A. The Instrumentation section in Chapter 3 shows in further detail how these items are based in the literature.

Assumptions

A basic underlying assumption is that videoconferencing has the potential to offer engaging and motivating learning experiences for students at all grade levels. Therefore, increased use of videoconferencing is a worthy goal and studying the factors that are related to increased utilization will contribute to the body of knowledge. In addition, the videoconference coordinator is key to the successful implementation of videoconferencing. It is possible to relate the behaviors and characteristics of the videoconference coordinator to the frequency of use of videoconferencing within the

school. Studying the videoconference coordinator and other factors within the school will provide the knowledge to increase the use of videoconferencing in low-use schools.

General Methodology

The existing studies on the role of the site facilitator or videoconferencing coordinator are qualitative studies that contributed a description of the characteristics of a coordinator (Keefe, 2003; Wakefield, 1999). However, a quantitative study to see how those characteristics are related to the utilization of videoconferencing has not been done. In the current emphasis on quantitative studies with the No Child Left Behind Act, schools are looking for quantitative data for decision making. This study will use a survey measuring the videoconferencing coordinator variables to discover if they can be used to predict the utilization of videoconferencing within the school. The variables to be examined are the location of the videoconferencing system, the level of technology support, the reliability and quality of the videoconference, the comfort level of the videoconference coordinator with technology, the coordinator's ability to manage the videoconferencing, the coordinator's perception of administrator support, the coordinator's ability to integrate videoconferencing in the curriculum, and the coordinator's ability to assist teachers in using videoconferencing in the curriculum. These items are measured by items 22-26 and 33-60 in the survey included in Appendix A. A variety of appropriate statistical tools will be used to determine the characteristics most likely to predict the utilization of videoconferencing within the school.

Delimitations

Videoconferencing coordinators can be the media specialist, librarian, instructional technology specialist, principal, teacher, paraprofessional, or even a school secretary. The sample for this study will be the coordinators who respond to the survey

from sending it to approximately 5,600 potential participants on videoconferencing listservs as well as mailing lists that I maintain.

Summary

Curriculum videoconferencing offers the potential of engaging learning experiences as students connect with experts, authors, scientists, and peers world wide. However, some schools installing videoconferencing equipment have limited utilization. The role and characteristics of the videoconferencing coordinator may be related to the utilization of videoconferencing. Other implementation factors may also be related to the utilization of videoconferencing. This study will identify the characteristics of videoconference coordinators in schools with high utilization and analyze specific factors that may predict their ability to support videoconferencing in their school.

The remainder of this proposal will review the literature in the field, and describe the research methodology including population sampling, variables, instrumentation, the pilot study, and the research procedures.

CHAPTER II

LITERATURE REVIEW

Introduction

For this literature review, I found over 200 research and opinion articles and dissertations on the topic of videoconferencing, specifically those related to curriculum videoconferencing, the implementation of videoconferencing, and the role of the coordinator. Databases searched include Dissertation Abstracts, ERIC, InformaWorld, WilsonSelect, and the EdITLib Digital Library for Information Technology and Education. The main keyword used in searches was “videoconferencing” and “videoconference” and then I used the titles and descriptions to select the articles related to K-12 videoconferencing. In addition, all references from the major literature reviews were collected (Anderson & Rourke, 2005; BECTA, 2003; Cavanaugh, 1999; Greenberg, 2004; Heath & Holznagel, 2002). The literature review for this proposal covers a sampling of those articles and dissertations. The literature review will be expanded more fully for the dissertation.

The focus of this study is the videoconference coordinator and their influence on the utilization of videoconferencing in the school. This study aims to investigate the coordinator’s ability to support videoconferencing, to integrate videoconferencing in the curriculum, to work with teachers, and the technical and administrative issues that may affect the coordinator’s ability to support videoconferencing. This study will analyze how these factors may predict the utilization videoconferencing in the school. Therefore, the literature review will examine selected studies on videoconferencing in general and then

make a case specifically for the importance of curriculum videoconferencing as defined by connections with content providers and other classrooms. After establishing that curriculum videoconferencing provides benefits to student learning, this chapter will discuss the studies on implementation of videoconferencing and examine the studies on utilization of videoconferencing. After setting this general background, the specific role of the videoconference coordinator will be examined carefully, including the demographics of the coordinator, the coordinator's ability to support videoconferencing, to integrate videoconferencing in the curriculum and to work with teachers. In addition, we will examine the technology factors, specifically location and quality of the videoconference, that may affect the coordinator's ability to support videoconferencing. Finally we will look at the coordinator's access to support. This lays the foundation for studying the videoconference coordinator's role in the utilization of curriculum videoconferencing in K-12 schools and this will be covered in the section on the rationale for the study.

Videoconferencing

In this section, we will examine selected studies from the broad category of videoconferencing, examine educational uses of videoconferencing, review the importance of interaction, and determine the need for further research into why some programs are successful.

Videoconferencing allows people in two or more locations to see and hear each other (BECTA, 2003). This technological tool is used by teachers and administrators in education for meetings (Fiege, 2005), professional development and training (Bore, 2005; Hartman & Crook, 1997; Kinnear, McWilliams, & Caul, 2002; Pemberton, Cereijo, Tyler-Wood, & Rademacher, 2004). The most common and traditional use in education

is for full length courses (Booth, 2006; Mitchell, 2005; Royal, Bradley, & Lineberry, 2005). Some creative uses of videoconferencing include school-based telehealth care (Young & Ireson, 2003), supervision of student teaching (Dudding, 2004), recruitment (Chapman, 1999), tutoring (McGinnis, 2001), and bringing opportunities to hospitalized students (Weiss, Whiteley, Treviranus, & Fels, 2001) and incarcerated students (Gilham & Moody, 2001). But this study focuses on curriculum videoconferencing, which includes accessing remote experts from the classroom (Greenberg, 2003; McCombs, Ufnar, & Shepherd, 2007), and engaging in collaborative learning activities with remote classrooms (Cifuentes & Murphy, 2000; Howland & Wedman, 2003; Szente, 2003; Thurston, 2004; Yost, 2001).

This study focuses specifically on curriculum videoconferencing, or those activities that use videoconferencing to address curriculum goals with engaging interactions with scientists, experts, and peers. It is my belief that there is a fundamental difference between using videoconferencing to deliver full courses and using it to bring curriculum enrichment activities to the classroom. Full length courses are generally daily videoconferences (Royal et al., 2005), whereas connections to experts and peers may occur only a few times a year (Keefe, 2003). This difference has implications for implementation as well as differing definitions of utilization. Studies on full course delivery focus on the effectiveness of communication, how well the technology works, whether students are satisfied, and how the instructor adjusts to a new medium. These studies do not have a direct connection to the less frequent use of videoconferencing to enrich the curriculum. However, we will take a cursory review of these studies to examine the traditional uses of videoconferencing. These studies provide a broader context for the research into curriculum videoconferencing in K12 education.

Much of the research discusses the difference between teaching full courses over videoconferencing compared to teaching a face to face class (Amirian, 2003, Oct. 31, 2003.; Booth, 2006; Carville & Mitchell, 2001; Ehrlich-Martin, 2006; Furst-Bowe, 1997) and the limitations of using videoconferencing to teach full courses. Limitations include the difficulty of equal interaction for the on-site and remote students (Atkinson, 1999; BECTA, 2003; Booth, 2006; Bore, 2005; Tyler, 1999) and the communication, presentation, and teaching skills of the presenter (Bitterman, Schappert, & Schaefer, 2000; Booth, 2006; Bore, 2005; Furst-Bowe, 1997; Heath & Holznagel, 2002). Cavanaugh's (1999) meta-analysis of 19 studies with 929 learners found that offering courses to distance learners "enlarges the course catalog and students' worldview at the same time" (p. 19), however foreign language is the subject area where distance education courses should be implemented with caution. Some studies (Baker, 2002; BECTA, 2003) found that videoconferencing did not afford any significant distractions from effective classroom practices and therefore using videoconferencing as a mode for delivery of high school courses is appropriate and deserves serious consideration by curriculum planning personnel. Another study found that videoconferencing is effective as a way to provide educational access to students in remote and rural locations, however, those with a greater need tend to be more tolerant of the medium than those that could get the education in other ways (Carville & Mitchell, 2001).

Interactivity is a theme that emerges throughout the literature (Amirian, 2003) and is critical to successful use of videoconferencing in all situations. In some studies, it is defined as simply the hindrance-free ability to actually communicate with the remote site (Atkinson, 1999; Carville & Mitchell, 2001). However Burke, Lundin, and Daunt (1997) challenged the simplicity of this definition by a study in which the two sites achieved a

very high level of spontaneous interaction and were able to maintain it for a long period of time. In other studies, interactivity is defined more broadly to include constructivist methods of teaching and learning (Hayden, 1999; Sweeney, 2007) and asking questions, hands-on activities, and discussion (Haydock & Dennison, 2004). More research needs to be done on the role of interaction in K-12 settings (Heath & Holznagel, 2002).

Greenberg asserts that plenty of research has been done on the pedagogical worth of videoconferencing for learning; however further research is needed on the economic benefits of reaching students, the ways collaboration fosters growth in understanding, assesses the return on investment, and brings to light why some programs and networks succeed where other do not (Greenberg, 2004). This study will begin to address the latter research need by examining the role of the videoconferencing coordinator in the implementation of videoconferencing.

Curriculum Videoconferencing

Curriculum videoconferencing includes accessing remote experts from the classroom (Greenberg, 2003; McCombs et al., 2007) and engaging in collaborative learning activities with remote classrooms (Cifuentes & Murphy, 2000; Howland & Wedman, 2003; Szente, 2003; Thurston, 2004; Yost, 2001). While there are anecdotal articles, informal case studies, and project evaluations for K12 videoconferencing, there are few research studies specifically on the use of curriculum videoconferencing in K12 schools (Anderson & Rourke, 2005). This section will examine the literature on the use of videoconferencing to connect to content providers and using videoconferencing for projects and collaborations with peers and international classrooms.

Content Providers

Content providers are organizations or groups that offer specialized content to schools. The programs can include virtual field trips, visits with experts, and cultural exchanges organized by educational organizations (Greenberg, 2003).

The studies make conflicting claims on the impact on student learning. Cavanaugh (1999) conducted a meta-analysis of 19 studies with 929 learners and found that "supplementing traditional instruction with distance education can enable more reality-based learning, with possible achievement gains" (p. 18). However, Anderson and Rourke suggest that the literature on how videoconferencing impacts student achievement is lacking and inconclusive (2005). In another conflicting example, one study focused on a content provider which offered one hour interviews with people from other cultures. Lee (2004) found that while the programs offered students an introduction and exposure to people from other cultures, their understanding of the other cultures was shallow and stereotypical. On the other hand, anecdotal evidence (Morrison & Macquart, 2006) suggests that when done well and accompanied by preparation and post activities, the connections can increase empathy and understanding for people in other cultures and counties. A recent study comparing synchronous and asynchronous interactions with scientists found that while student learning was equal in both interactions, the students that interacted asynchronously were more thoughtful and reflective in their questions. The students who participated in synchronous interactions were more interested in the scientist as a person than the study at hand (Kubasko, Jones, Tretter, & Andre, 2007). These studies show that there are varying results and opinions on videoconferencing's impact on student learning.

While the impact on student achievement may be inconclusive, there are clear benefits to gaining access to experts. In 1996-1998 teachers in Ohio created lesson plans and action research projects to integrate community resources such as the Zoo and Center of Science and Industry in the curriculum. They found that videoconferencing allowed students and teachers direct access to specialists (Bruke, Beach, & Isman, 1997). An early content provider study was on a 128K ISDN connection from Colorado to New Jersey. Students accessed scientists in New Jersey over a 3-4 week period and the researcher concluded that the students' understandings of science and the work of scientists increased as a result of the contact with scientists (Shaklee, 1998). A more recent evaluation of Mote Marine Laboratory's videoconference programs found that videoconferencing offers students the opportunity to interact with real scientists which motivates student learning and encourages interest in science (Ba & Keisch, 2004). An evaluation of Vanderbilt University's program allows students to interview scientists and other experts found that videoconferencing can bridge the gap between formal textbook learning and real world science (McCombs et al., 2007). Videoconferencing also allows content providers to bring their message and resources to K-12 schools (WMHO, 2002). The motivation and access to real-world practitioners is effective in the mathematics curriculum (Gage, Nickson, & Beardon, 2002) as well as higher education contemporary studies in tourism (Lück & Laurence, 2005). These studies only represent a small portion of over 250 content providers (AT&T, 2006; BCISD, 2008; CILC, 2008) offering interviews with scientists and programs by biologists, field researchers, and educational specialists. While benefits to student learning are emerging in the literature, additional research needs to be done on the use and effectiveness of content provider programs in the K-12 curriculum.

Projects and Collaborations

Many of the studies on curriculum videoconferencing are descriptions and studies on classroom-to-classroom collaborations, where teachers collaboratively design one or more activities for their students to participate via videoconference (Anderson & Rourke, 2005; Glaser, 2008). Projects, those classroom-to-classroom events coordinated by an individual or organization, are represented in opinion articles only (Glasgow & Zoellmer, 2003, March; Lim, 2003, January). Collaborations may take the form of a joint seminar, with the two classes meeting regularly for interaction (Martinez & MacMillan, 1998), or shorter one-time videoconference exchanges.

Many benefits can be found in these collaborations. Students may be challenged to identify their biases and learn from other viewpoints (Martinez & MacMillan, 1998). Sustained, multi-connection collaborations can bring greater cultural understanding (Cifuentes & Murphy, 1999; Cifuentes & Murphy, 2000) and increased student self-concept (Cifuentes & Murphy, 2000). One collaboration with the intention of increasing students' understanding of French uncovered complications in the difference between spoken and written French, which made the collaboration difficult. However, students learned significantly from reviewing the videotapes of the interaction and analyzing the conversation with teacher assistance (Kinginger, 1999). Burke et al. found that a dialogical approach in multicultural exchanges encourages more interaction between learner and learner (1997). Even young elementary students benefited from sustained classroom-to-classroom collaborations as part of a ongoing unit on weather (Yost, 2001).

Most of these studies are of one teacher in a school doing one collaboration whereas some schools in this study are doing many events with many locations. Further research is necessary to examine the factors necessary to sustain these types of

collaborations throughout the school year and involving a larger percentage of the teachers.

Implementation of Videoconferencing

A few studies have begun to examine the effective implementation of videoconferencing. Baber (1996) offers the Culture-Process-Technology approach as a framework for the successful implementation of videoconferencing in the corporate environment. The framework recommends:

> (1) that organizations should ensure that managers at all levels are willing to support the implementation process; (2) that videoconferencing "champions" be found to administer the system at the project level; (3) that operator training programs be developed to create a wide base of skilled end users; (4) that conference schedules be published regularly to inform end users of meeting times and to sustain ongoing interest in videoconferencing; and (5) that use of videoconferencing system features be consistently modeled to encourage the use of innovation and the re-invention of technology. (p. 128)

These essential components are evidenced in the literature as well. First, leadership support is critical. Keefe (2003), in a case study of one elementary school implementing videoconferencing, found that important components of a successful program included support from the technology committee and a collaborative decision making process within the school.

Second, the videoconference champion is key to the implementation of videoconferencing (Baber, 1996). The role of the coordinator or champion is the main focus of this study. Keefe (2003) found that the ability of the coordinator to assist teachers in integrating the technology in the curriculum was critical. In addition, Currie's (2007) study of videoconferencing within three regional service agencies in Michigan found that support of the administration was important for successful implementation of videoconferencing.

Baber's (1996) framework also suggests the need for operator training and modeling the use of videoconferencing features. Keefe (2003) suggested that the coordinator has an important role in staff development for new and experienced teachers. Currie's (2007) study of the implementation factors at the educational service agency level found that access to, awareness of, and actual participation in professional development was important in the success of the program. Bose (2007) studied the teacher, school, and professional development factors affecting the utilization of videoconferencing and found that professional development factors were important to predicting the use of videoconferencing.

Finally, Baber's framework suggests the need for a system for scheduling. This is another important role of the videoconference coordinator. Currie (2007) suggested that personnel at the local level to coordinate and schedule videoconferences is important to the success of the program.

Important implementation factors not addressed by Baber's framework include access to the videoconferencing equipment, the cost of programming, and the availability of programming offered by the regional service agency (Currie, 2007).

Because this study focuses on the role of the coordinator, Baber's framework will be adapted to focus specifically on how these factors affect the coordinator and utilization. Baber's "management support" will be defined in this study as financial, technical, and administrative support for the coordinator. Baber's "modeling of videoconference features, scheduling, and professional development" will be included in Baber's definition of the role of the videoconference "champion" (coordinator). The role and characteristics of the "champion" (coordinator) will be divided into the coordinator's ability to support the videoconferencing, to integrate videoconferencing in the

curriculum, and to work with teachers. Additionally, in this study the location of the equipment and the quality of the videoconference will be examined as variables that may affect the coordinator's ability to successful guide the implementation of videoconferencing.

Utilization

While a few key studies examine the implementation of videoconferencing in K-12 schools, the exact nature of a successful implementation is not defined. Implementation could be defined as using the instructional strategies properly (McDonald, 2007). However, since the field of curriculum videoconferencing is so new, this study will focus specifically on utilization. Given that curriculum videoconferencing brings benefits to the educational experience, it is logical to attempt to increase the use of videoconferencing, especially when schools invest thousands of dollars to install equipment. Therefore, this study will examine factors that can predict utilization.

Only two studies were found that examine utilization of curriculum videoconferencing. Currie (2007) studied the factors that impact videoconferencing within three regional service agencies in Michigan. His study examined overall usage including full length course delivery and curriculum videoconferencing. Not surprisingly, the regions with full length courses were using videoconferencing daily, whereas the schools under the service agency without full course delivery were using it less often. A more fair comparison would examine only one type of videoconferencing. The nature of curriculum videoconferencing dictates that it will not be used daily; whereas the nature of full course delivery suggests a very high likelihood of daily use of videoconferencing. Nevertheless, Currie's study uncovered some important factors for implementation that will be examined in further detail in this study.

Another study by Bose examined the utilization of videoconferencing for professional development for teachers (2007). The study examined school characteristics, professional development characteristics, and teacher characteristics, and found that the teacher characteristics were more useful predictors of utilization. While this study focused on professional development via videoconferencing, the methods are similar to this study of utilization of curriculum videoconferencing and therefore will provide some insights and understanding.

Clearly there is a need to further investigate the implementation and specifically the utilization of curriculum videoconferencing in K-12 schools. This study begins to address that need.

Demographic Variables of the School

This section begins to address the variables involved in utilization in this study. The demographic variables of the school are not central to the study, but may show factors that influence the implementation of videoconferencing and therefore are included here.

The three major implementation studies examine some of the relevant school demographic variables. Currie examined the size of the school districts served and the socio-economic homogeneity of the school districts and found that these factors did not impact the success of the videoconferencing program (Currie, 2007). Keefe's case study focused on a school in a wealthy area with rich educational resources available to the school (2003); however in my pilot study I found that the schools with higher National School Lunch Scores used videoconferencing more than the schools with lower National School Lunch Scores (Lim, 2007). National School Lunch Scores are a recognized measure of poverty in schools. Bose examined the school's state in adoption of

technology, number of teachers trained, school size, expenditure per pupil, and school location and found that these variables did not predict utilization (Bose, 2007). An additional variable included in my pilot study found that elementary schools used videoconferencing more than secondary schools (Lim, 2007). While Bose, Currie, and Keefe addressed some of the school demographic variables, research still needs to examine the relationship between these variables and the utilization of curriculum videoconferencing.

Other factors not found in the literature include the racial makeup of the school, and the population of the town where the city is located. These will be included in this study to obtain a broader picture of schools implementing videoconferencing.

The Role of the Videoconference Coordinator

A few studies have examined or mentioned the important role of the videoconference coordinator in a successful implementation of videoconferencing. Keefe's case study (2003) on one elementary school implementing a video learning center emphasized the necessity of a trained coordinator to support the teachers and make the connections. Wakefield's survey of 27 site facilitators (coordinators) on two videoconferencing listservs found that the roles of technical expert, instructional assistant, liaison, scheduler, and trainer were "a crucial part of the system in videoconferencing" (Wakefield, 1999, p. 49). Currie (2007), who studied study of three regional service agencies in Michigan recommended that school districts provide an individual who is in charge of facilitating videoconferences and can assist teachers in using videoconferencing in the curriculum. Bose (2007) found that the participant's prior confidence level with technology was a critical predictor of their utilization of videoconferencing. In addition, other studies have mentioned the role of the

videoconference coordinator in making the videoconference successful (Ba & Keisch, 2004; Baber, 1996). These studies hint at the importance of the videoconference coordinator and their role in a successful implementation of curriculum videoconferencing.

This study will examine specific characteristics of the videoconference coordinator: the demographics of the coordinator, the coordinator's ability to support videoconferencing, to integrate videoconferencing in the curriculum, and to work with teachers. In addition, the technology factors of location and quality of the videoconference will be examined with the perspective of how these factors affect the coordinator's ability to support videoconferencing. Finally, the role of technical, financial, and administrative support for the coordinator will be addressed.

Demographic Variables of the Coordinator

While Wakefield's (1999) study examines the site facilitator (coordinator) roles, no demographic variables were collected. Wakefield emphasizes the necessity of training and the method the training was delivered, but does not examine the type of training. Wakefield hinted that the position and other responsibilities of the facilitator may be important, but did not examine these factors in detail.

Clearly the site facilitator (coordinator) is important to the success of videoconferencing, but additional demographic information needs to be studied. This study will include the gender, race, age, and level of education, as well as the job title, years of experience in education, years of experience in videoconferencing, and time commitment to videoconferencing. These variables were not found in the literature. To further examine the importance of training, the hours of training received will be

collected as well as what type of training was received, meaning mostly technical training or mostly curriculum integration training.

The Coordinator's Ability to Support Videoconferencing

Many skills and abilities are included in this category of supporting videoconferencing. Bose (2007) found that the comfort level with technology in general was an important predictor of utilization of videoconferencing. Wakefield (1999) found that the most prominent role of the site facilitator was that of technical expert, which includes comfort with videoconferencing, the use of the controls, conducting test calls, and the ability to make the connection work. The ability to stay during the videoconference as well as explain the videoconference technology to the students is another important part of supporting videoconferencing. Several studies found that the mediator (coordinator) at the remote site can help the learners by interfacing with the technology and modeling appropriate participation (Atkinson, 1999; Carville & Mitchell, 2001; Wakefield, 1999). In addition, a working system for scheduling videoconferences is a critical component of successful implementation (Baber, 1996; Wakefield, 1999). Each of these components are included in this study's definition of the coordinator's ability to support videoconferencing.

The importance of the coordinator's ability to support videoconferencing is represented well in the literature, but further research is necessary to determine if this ability predicts the utilization of videoconferencing in the school.

The Coordinator's Ability to Integrate Videoconferencing in the Curriculum

Integration of any technology in the curriculum requires a thorough knowledge of the possibilities, the curriculum, and methods of preparing and engaging students in the

lessons. Studies show this is important in videoconferencing as well. Pre-planning and preparation for the videoconference are critical to success (Amirian, 2003; Cifuentes & Murphy, 2000; Kinginger, 1999; Sweeney, 2007). In addition, connecting videoconferencing to the course curriculum can provide a rich and educational experience for students as well as opportunities for situated learning and construction of knowledge (Fee & Fee, 2005). Preparation of the students is important too. Students have varying levels of interest and motivation for using videoconferencing; and some students even react badly to the technology (BECTA, 2003; Tyler, 1999). Therefore it is important that the coordinator be able to assist students by orienting them to the technology and modeling appropriate participation (Atkinson, 1999). The coordinator also needs to know how to find and select appropriate content for the curriculum (Greenberg, 2003).

The literature shows the importance of the coordinator's ability to integrate videoconferencing in the curriculum; however research is needed to determine if this characteristic of the coordinator is important in predicting the schools' utilization of videoconferencing.

The Coordinator's Ability to Work with Teachers

Teachers need support to participate in videoconferencing and to integrate new strategies in their teaching. The faculty need assistance with using the technology and adapting their teaching for videoconferencing (Amirian, 2003). Units of instruction that involve multiple videoconferences and a significant amount of preparation can be challenging for teachers due to the constrictions on the curriculum schedule due to high stakes testing (Gage et al., 2002). Even though the teachers may see the benefit of the videoconference, they may struggle to find time for the videoconferences. A coordinator assisting with preparation and technology can make it easier for teachers to participate in

videoconferences. Bose found that teacher and professional development characteristics were useful to predict utilization of videoconferencing (Bose, 2007).

It is clear from the literature that the coordinator needs to be able to support teachers as they integrate a new technology; however research needs to be done to determine if this characteristic predicts the level of utilization in the school.

The Coordinator and the Technology

While the preceding sections are directly related to the coordinator, this section examines two specific technology factors that may hinder the coordinator's ability to support videoconferencing in the school. Those factors are the quality of the videoconference and the location of the videoconference equipment.

The quality of the videoconference can affect the user experience. Low or unreliable bandwidth can make videoconferencing unreliable for educational purposes (Anderson & Rourke, 2005; BECTA, 2003). It is likely that the quality of the audio or video in the videoconferencing predict utilization, but this has not been studied for K-12 curriculum videoconferencing.

In addition, access to the videoconferencing technology is essential (Anderson & Rourke, 2005). The location of the system may affect access by teachers and the coordinator. This study will add to the body of literature an understanding on how the location of the videoconferencing equipment was decided, the satisfaction with the location and determine if any of these factors predict utilization.

The Coordinator's Access to Support

As the coordinator attempts to support videoconferencing in the school, it is important that the coordinator is also supported with technical and administrative

support. support. Baber's framework (1996) suggested that managers have a key role to supporting the implementation of videoconferencing. They provide motivation for people to use videoconferencing and also create the administrative structure for actually implementing videoconferencing. The lack of consistent administrative support in one of the sites in the study led to failures in the cultural, process, and technical components of the implementation. Anderson and Rouke (2005) agree that leadership and a vision for all participants is an important key to success. Specifically, that support should include a budget for videoconferencing (Currie, 2007), principal support for videoconferencing, as well as a technology infrastructure to support videoconferencing (Keefe, 2003). In addition, Currie (2007) suggests that educational service agencies should offer programming for their schools.

These administrative and technical supports for the coordinator or site facilitator are important, but have not been studied in relation to the utilization of videoconferencing in the school.

Summary

The literature suggests many important issues for the implementation of videoconferencing; however, these issues have not been systematically studied in relation to the utilization of curriculum videoconferencing in K-12 schools. The role of the videoconference coordinator and their ability to support videoconferencing, integrate it in the curriculum, and work with teachers is evidently critical to the successful implementation of videoconferencing. In addition, technical and administrative support factors are likely important factors to the implementation of videoconferencing. Recent studies have just begun to analyze the utilization of videoconferencing in schools (Bose, 2007; Currie, 2007), and further research is necessary to add to the body of knowledge.

The research on curriculum videoconferencing is still new and inconclusive (Anderson & Rourke, 2005), therefore much more research needs to be done. School administrators may see the benefits and value of curriculum videoconferencing for meeting educational goals, but they need assistance in designing a successful implementation. This study will attempt to fill part of that need by investigating the videoconference coordinator and their role in promoting the utilization of curriculum videoconferencing.

This chapter briefly examined the literature on videoconferencing and curriculum videoconferencing. Then the review summarized the literature on the implementation of videoconferencing, and detailed the role of the videoconference coordinator. In the next chapter, the methodology for the study will be described.

CHAPTER III

METHODOLOGY

Introduction

This chapter describes the methodology that will be used in this study. The study is an ex post facto study, examining the coordinator variables against the utilization of videoconferencing in the previous school year. This chapter will review the research design, the population and sample, the instrumentation and the procedures to be used in this study.

Research Design

The research design that will be used in this study is ex post facto. This research is "initiated after the independent variable has already occurred or the independent variable is a type that cannot be manipulated" (Newman, Newman, Brown, & McNeely, 2006, p. 99). Inferences will be made about the relationships among the variables without direction intervention from "concomitant variation of independent and dependent variables" (Kerlinger, 1973, p. 379).

Since ex post facto research contains assigned variables, it can only be used to demonstrate relationships, not causation. As (Newman et al., 2006) stated:

> In ex post facto research, causation is sometimes improperly inferred because some people have a propensity for assuming that one variable is likely to be the cause of another because it precedes it in occurrence. (p. 101)

The three major weaknesses in conducting a study using ex post facto research are:

> (1) the inability to manipulate independent variables, (2) the lack of power to randomize, and (3) the risk of improper interpretation which is due to lack of control. (Kerlinger, 1973, p. 390)

Even though this study is ex post facto in nature, it is guided by the hypotheses in this chapter and by past research. It will contribute to a greater understanding of the role of the coordinator and other factors involved in the successful implementation of curriculum videoconferencing, even though those factors will not be determined to cause successful implementation.

Description of the Population

Videoconferencing coordinators can be the media specialist, librarian, instructional technology specialist, principal, teacher, paraprofessional, or even a school secretary. This study will use four potential participant sources and the snowball sampling method (O'Leary, 2005) to access approximately 5,500 coordinators and therefore to achieve a wide response to the survey. This large sample size is necessary due to the number of variables to be examined.

The first source of participants will be the approximately 70 videoconference coordinators in two counties in southwestern Michigan where I support videoconferencing. Half of these participants are currently participating in a United States Department of Agriculture Rural Utilities Services Distance Learning and Telemedicine Grant. These participants have agreed to participate in evaluations and surveys related to the grant. The other half of these participants have been coordinating videoconferencing in their schools for the past several years. I have a positive working relationship with most of them and this should encourage a high response rate.

The second source of 4,400 participants is five videoconferencing listservs. Coordinators around the world use these email mailing lists to find content, projects, and find partners for collaborations. Two Way Interactive Connections in Education, Michigan's K12 videoconference organization, has a listserv with 290 educators. The Collaboration Collage, hosted by AT&T Knowledge Network, is the oldest and largest videoconferencing listserv with 2.,300 subscribers as of November 2007. The K12 IVC listserv, hosted by Northwest Regional Educational Laboratory has 300 subscribers (See Appendix D). The Megaconference Jr. listserv has 30 subscribers and has more Internet2 and international sites represented on the listserv. The fifth listserv is the Center for Interactive Learning and Research's mailing list, with 1,500 subscribers which has already been offered to me to use for this survey. See Appendix D for the permissions acquired to access these listservs. Other research studies have used one listserv to find survey participants with a relatively low response rate (Sweeney, 2007; Wakefield, 1999). I have name recognition on these listservs due to providing free resources, content, and tools for supporting videoconferencing and related training, so there is a higher likelihood of achieving a better response rate.

The third source of 500 participants is my own mailing lists. One mailing list is for 150 past participants in the geography project called MysteryQuest, that I have facilitated annually since 2002. Another mailing list is the 114 participants who have participated in my two online classes on using curriculum videoconferencing. The third mailing list is the 60 participants who have attended my National Educational Computing Conference Best of the Best workshop titled Developing Quality Collaborative Videoconference Projects offered in 2006 and 2007. The fourth mailing list is the 84 participants in a collaborative multi-state videoconferencing workshop titled 123 VC:

Jazzing Up Your Curriculum with Videoconferencing. The fifth source is my collection of about 100 people who coordinate videoconferencing in various states, Canadian provinces, and countries. These coordinators have emailed me in the past to ask questions about videoconferencing or have been partners on collaborative projects. Each of these lists will be carefully reviewed to send the survey to coordinators only and not the teachers on the lists.

Finally, I have requested the TWICE board to access the coordinators for the international videoconference project, Read Around the Planet (See Appendix D). There are approximately 450 coordinators in the database from the 2008 Read Around the Planet project. In addition, I will email the Read Around the Planet Verification Partners to request that they forward the survey to their local listservs. The Verification Partners are usually state or provincial level videoconference support staff and have the ability to send the survey to an estimated 200-300 school level videoconference coordinators.

Each of the coordinators described will likely be using videoconferencing to connect to content providers and for collaborative projects, which are the main uses included in curriculum videoconferencing. So while they may have a wide range of utilization and measures on the research variables, their schools are likely using videoconferencing in similar ways to meet curriculum goals.

Variables

The variables for this study are organized into the following categories: demographic data on the school, demographic data on the coordinator, utilization scores, variables on the coordinator's ability to support videoconferencing, variables on the coordinator's ability to integrate videoconferencing in the curriculum, variables on the coordinator's ability to work with teachers, variables on technical aspects that may affect

the coordinator's work, and variables on the support structure in place for the coordinator.

School Demographic Variables

The following demographic data will be collected about the school. These variables will be compared with the utilization of videoconferencing in the school.

1. School level (elementary, middle school, secondary). Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.
2. Number of classroom teachers. This will be coded as continuous data.
3. Number of students as a measure of the size of the school. This will be coded as continuous data.
4. Population of the town or city where the school is located. This is a measure used by the USDA RUS DLT Grant. This will be coded as continuous data.
5. National School Lunch Program scores. This is a measure of poverty in the school. This will be asked in two parts: Do you know the NSLP score for your school? if not, please enter your best guess. The NSLP score will be coded as continuous data.
6. Racial make up of the school (predominantly Caucasian, predominantly African American, predominantly Hispanic, predominantly Asian, mixed). Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.
7. Do you receive videoconference support from a consortium or educational service agency (BOCES, ESC, IU, ISD, RESA, etc.)? This will be coded as 0 or 1.

Coordinator Demographic Variables

The following demographic data will be collected about the coordinator. These variables will be compared with the utilization of videoconferencing in the school.

1. Gender of the coordinator. Zoomerang will code these as 1 or 2 but the data will be recoded afterwards so that each one is a separate variable.
2. Race of the coordinator (Caucasian, African American, Hispanic, Asian, mixed). Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.
3. Age of the coordinator as a whole number. This will be coded as continuous data.
4. Level of education (high school, 2 years college, 4 years college, Masters Degree). Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.
5. Country and state/province. Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.
6. Job title of the coordinator. Participants can select more than one. Choices will be Media Specialist/Librarian, Paraprofessional, Secretary, Teacher, Technology Specialist, Principal/Administrator, District Videoconference Coordinator, Regional Videoconference Coordinator. Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.
7. Years of experience in education. This will be coded as continuous data.
8. Years of experience with videoconferencing. This will be coded as continuous data.

9. Time commitment to videoconferencing. Full time videoconference coordinator, part time, several hours a week, one or two hours a week, less than one or two hours a week, other. This will be coded as continuous data.
10. Hours of videoconference training received. This will be coded as continuous data.
11. Type of training received. Choices will be: Mostly technical training, mostly technical training with some curriculum training, mostly curriculum training with some technical training, and mostly curriculum training. Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.

Regional Educational Service Support

In addition, several variables will collect information about the support the school may receive from an educational service agency.

1. Do you receive videoconference support from a consortium or educational service agency (BOCES, ESC, IU, ISD, RESA, etc.)? This will be coded as 0 or 1.

1. Does your educational service agency create and facilitate free programming for your school ? Zoomerang will code these as 1 or 2 but the data will be recoded afterwards so that each one is a separate variable.
2. Does your educational service agency subsidize programming from content providers? Zoomerang will code these as 1 or 2 but the data will be recoded afterwards so that each one is a separate variable.

3. Estimate what percent of the student videoconference events this year were provided or facilitated by your educational service agency. This will be coded as continuous data.

Utilization

Each of the variables will be compared with the utilization scores to determine a potential relationship to the predictor variables. These measures will be used to find and determine utilization. These are the criterion variables.

1. Total videoconference events. This would include all videoconference events (content providers, expert interviews, connections to peer classrooms, professional development, and meetings). This should not include test calls. It should not include every session where students participated in daily course delivery. This will be coded as continuous data.
2. Total student videoconference events. This would include all videoconference events where students participated (content providers, author and expert interviews, connections to peer classrooms). It should not include daily course delivery. This will be coded as continuous data.
3. Type of student videoconference events. Choices would include predominantly content providers, authors and experts, or predominantly collaborative connections with other classes, or other with a blank. Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.
4. Number of teachers who used videoconferencing with their students during this school year. This will be used to calculate percentage from the total

number of classroom teachers collected earlier. This will be coded as continuous data.

Coordinator's Ability to Support Videoconferencing

Items 39-45 in the survey will address the coordinator's ability to support videoconferencing. The items are described in detail in the Instrumentation Section and listed in Appendix A. The variables will measure the coordinator's comfort level with technology in general, the coordinator's comfort level with videoconferencing, their use of the videoconference remote controls, the ability to schedule videoconferencing, the ability to make test calls, the ability to make the connection work on their own, the ability to stay with teachers during the connection, and the ability to explain videoconferencing to the students. These items will be coded as continuous data.

Curriculum Integration

Items 46-49 on the survey will address the coordinator's ability to integrate videoconferencing in the curriculum. The items are described in detail in the Instrumentation Section and listed in Appendix A. They include questions on the coordinator's knowledge of appropriate programs, ability to find programs, and ability to assist the teachers in preparing the students. These items will be coded as continuous data.

Working with Teachers

Items 50-52 in the survey will address the coordinator's ability to work with teachers. The items are described in detail in the Instrumentation Section and listed in Appendix A. The items include measurements of the coordinator's ability to motivate and encourage teachers, their perception of teacher interest in videoconferencing, the

teachers' ability to participate in a videoconference on their own, and their ability to help teachers find time to integrate videoconferencing in the curriculum. These items will be coded as continuous data.

Technology Aspects

Items 33-37 on the survey address technical aspects that may help or hinder the coordinator's ability to support videoconferencing. The items are described in detail in the Instrumentation Section and listed in Appendix A. The items include, the quality and reliability of the videoconference as measured by the coordinator's perception of the video quality and the audio quality measured by items 36-37 in the survey in Appendix A. These items will be coded as continuous data.. This will also include the following variables in a section analyzing the impact of the location of the equipment (items 33-35).

1. Location of the videoconference equipment. Choices provided will be mobile within one school, mobile within more than one school, fixed classroom, media center/library, computer lab, conference room. Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.
2. Level of satisfaction with the current location of the equipment. These items will be coded as continuous data..
3. Reason for the location of the equipment: technical reasons (wires, switches, networking etc.), or proximity to coordinator, or only available room, and other. Zoomerang will code these as 1, 2, 3, but they will be recoded afterwards so that each one is a separate variable.

Administrative Support

Items 13-14, 22-26, 30-31, and 59-60 on the survey address the administrative and technology supports that are in place to help the coordinator support videoconferencing. The items are described in detail in the Instrumentation Section and listed in Appendix A. This includes the level of school budgeting for videoconferencing, the principal's experience with videoconferencing, and the principal's support of videoconferencing, as well as the available technical support where there are problems and the amount of time provided to support videoconferencing. Finally, it will include the availability of free programming offered by the educational service agency, if applicable. These items will be coded as continuous data.

Each of these variables will also be analyzed against the utilization scores to determine if a relationship exists or if any of the variables or combinations of the variables can be used to predict utilization.

Research Hypotheses

Hypothesis$_1$: There is a significant relationship between the coordinator's ability to support videoconferencing and the school's utilization of videoconferencing.

Hypothesis$_2$: There is a significant relationship between the coordinator's ability to integrate videoconferencing in the curriculum and the school's utilization of videoconferencing.

Hypothesis$_3$: There is a significant relationship between the coordinator's ability to work with teachers and the school's utilization of videoconferencing.

Hypothesis$_4$: There is a significant relationship between the location of the videoconferencing system and the school's utilization of videoconferencing.

Hypothesis$_5$: There is a significant relationship between the quality of the videoconferencing and the school's utilization of videoconferencing.

Hypothesis$_6$: There is a significant relationship between the administrative, financial, and technology support structures and the school's utilization of videoconferencing.

Hypothesis$_7$: There is a significant relationship between one or more of the demographic variables of the coordinator and the school's utilization of videoconferencing.

Hypothesis$_8$: There is a significant relationship between one or more of demographic variables of the school and the school's utilization of videoconferencing.

Hypothesis$_9$: A combination of these variables can be used to predict the utilization of videoconferencing.

Finally, a correlation matrix will be run to see the potential relationships between the variables and with the utilization scores.

Instrumentation

This study is based in part on a qualitative analysis done in 2003 on the discussion posts of 30 educators from across the United States in an online class called *Planning Interactive Curriculum Connections* (Freed & Lim, 2006). This class addressed the use of videoconferencing for connecting to content providers, guest experts, and peer to peer collaborations. Participants made many comments about the issues and barriers to using videoconferencing in their area. Following the class, the discussion posts were analyzed and categorized. As a result, three themes emerged: concerns related to administration, curriculum, and teachers. The administrative issues included scheduling issues, technical support, budgeting, and technology placement. The curriculum issues

included teacher expectations for the programs and program selection and development. The teacher issues revolved around motivating teachers and encouraging them to try something new.

These themes of administrative, curriculum, and teacher issues are evidenced in the literature as well. Keefe's case study (2003) on one elementary school implementing a video learning center emphasized the necessity of a trained coordinator to support the teachers and make the connections, as well as the critical roles of principal support and technology planning and support. Wakefield's survey of 27 site facilitators on two videoconferencing listservs found that the roles of technical expert, instructional assistant, liaison, scheduler, and trainer were "a crucial part of the system in videoconferencing" (Wakefield, 1999, p. 49). Currie's study (2007) of three regional service agencies in Michigan found that access to videoconferencing in an appropriate locations within a school district were critical to increased utilization. In addition, he recommended that school districts provide an individual who is in charge of facilitating videoconferences and can assist teachers in using videoconferencing in the curriculum, and that administrators should support teachers who are implementing videoconferencing in their classes. Bose (2007) found that the participant's prior confidence level with technology was a critical predictor of their utilization of videoconferencing. These studies support the themes of administrative, curriculum, and teacher issues addressed in this study.

These themes were used to develop a rubric to assess a videoconference coordinator's perspective on the issues and barriers to integrating videoconferencing in the curriculum. This rubric was evaluated by 5 experts in the field of videoconferencing, including two videoconference specialists with doctoral degrees in the spring of 2007.

The survey was then modified and corrected based on the feedback from the experts. After the pilot data was collected, (Lim, 2007), the questions were re-examined. A table of specifications was developed and will be sent to five expert judges for review of the content (Keith A. McNeil, Newman, & Steinhauser, 2005).

Table 1 correlates the rubric questions to published research and the qualitative study mentioned above. Each of these sections will be combined to create one score for that measure. The table shows that the survey developed is grounded in previous research.

Reliability

Two methods will be used to estimate reliability. Cronbach's alpha will be used to analyze the pilot data on the survey for internal consistency. After the survey data is collected, this measure will be used again to estimate reliability. In addition, the test-retest method (Newman et al., 2006) will be used on a small sample of the total respondents of the survey. Thirty-five coordinators will be randomly selected from the seventy coordinators in the school districts in my service area. This convenience sample was selected because these coordinators are easily accessible. The survey will be administered twice in the spring of 2008 with the two tests 1 week apart. The limitation to this procedure is that the participants are not randomly selected.

Validity

Two methods will be used to estimate validity. Expert judge validity was used on the pilot study (Lim, 2007) as five expert judges reviewed the survey and gave feedback before it was administered in the spring of 2007. In February 2008, expert judge validity was used on a table of specifications (Keith A. McNeil et al., 2005). The expert judges

reviewed each item for its appropriate measurement of the concept and then reviewed the concepts to determine if the items sufficiently measured them. In addition, the table of specifications will be used to analyze the survey for content validity.

Table 1

Correlating Rubric Questions to Supporting Research

Rubric Question Heading	Supporting Research
Coordinator's Ability to Support Videoconferencing	
Comfort level with technology	Technical Support (Freed & Lim) Technical Expert (Wakefield) Participant confidence level (Bose) Technology Coordinator (Keefe)
Comfort level with videoconferencing	Technical Support (Freed & Lim) Technical Expert (Wakefield) Technology Coordinator (Keefe) Local Coordinator (Currie)
Use of the controls	Technical Support (Freed & Lim) Technical Expert (Wakefield) Technology Coordinator (Keefe)
Scheduling	Scheduling (Freed & Lim) Scheduler (Wakefield) Technology Coordinator (Keefe)
Test Calls	Scheduling (Freed & Lim) Technical Expert (Wakefield)
Making the connection work	Technical Support (Freed & Lim) Technical Expert (Wakefield)
Helping teachers with a connection	Technical Support (Freed & Lim) Instructional Assistant (Wakefield) Technology Coordinator (Keefe)
Getting students acquainted with VC	Technical Support (Freed & Lim) Instructional Assistant (Wakefield) Technology Coordinator (Keefe)

Table 1 — *Continued.*

Coordinator's Ability to Integration Videoconferencing in the Curriculum	
Knowledge of Coordinator	Teacher Expectations (Freed & Lim) Instructional Assistant (Wakefield) Constructivist Learning (Keefe) Technology Coordinator (Keefe) Local Coordinator (Currie)
Finding programs	Program Dev. (Freed & Lim) Instructional Assistant (Wakefield) Constructivist Learning (Keefe) Technology Coordinator (Keefe)
Teacher recommendations	Program Dev. (Freed & Lim) Instructional Assistant (Wakefield)
Student preparation	Program Dev. (Freed & Lim) Instructional Assistant (Wakefield) Technology Coordinator (Keefe)
Coordinator's Ability to Work with Teachers	
Teacher Attitudes	Motivating Teachers (Freed & Lim) Participant confidence level (Bose)
Teacher Experience	Motivating Teachers (Freed & Lim) Participant confidence level (Bose)
Teachers' Time	Motivating Teachers (Freed & Lim)
Teachers Using the VC System	Motivating Teachers (Freed & Lim) Trainer / Consultant (Wakefield) Technology Coordinator (Keefe)
Curriculum design	Teacher Expectations (Freed & Lim) Trainer / Consultant (Wakefield) Curriculum Enrichment (Keefe)
Technical Aspects That Affect the Coordinator's Work	
Quality of the video	Technical Support (Freed & Lim) Technology Infrastructure (Keefe)

Quality of the audio	Technical Support (Freed & Lim) Technology Infrastructure (Keefe)
Location of equipment	Tech Placement (Freed & Lim) Technology Infrastructure (Keefe) Access to videoconferencing (Currie)
Administrative and Technology Support for the Coordinator	
Time to support videoconferencing	Technical Support (Freed & Lim) Technical Expert (Wakefield) Technology Coordinator (Keefe)
Availability of tech support	Technical Support (Freed & Lim) Technical Expert (Wakefield) Technology Infrastructure (Keefe)
Budget for content	Budget (Freed & Lim) Cost of programming (Currie)
Principal experience with VC	Principal Involvement (Keefe) Motivating Teachers (Freed & Lim)
Principal support	Motivating Teachers (Freed & Lim) Principal Involvement (Keefe) Support of administration (Currie)

Pilot Studies

In the spring of 2007, the survey was piloted with 38 videoconference coordinators in Berrien and Cass counties, who are part of a U.S. Department of Agriculture Rural Utilities Service Distance Learning and Telemedicine Grant implemented in the summer of 2006 (Lim, 2007). This survey was collected along with data on the number of videoconferences each school completed in 2006-2007, the number of classroom teachers in the school, the number of unique teachers who participated in videoconferences in that school, and some demographic data on the schools.

Six variables were examined to see if there was a relationship with the frequency of use of videoconferencing in the schools participating in the study. Three of the variables studied were not a significant factor in the frequency of use. The size of the school, the location of the videoconferencing system, and the years of experience of the videoconference coordinator are independent of the frequency of use of videoconferencing in the school. However, three of the variables were significant in the frequency of use of videoconferencing in the schools studied. The elementary schools are using videoconferencing about twice as often as the secondary schools. The National School Lunch Plan (NSLP) scores, a common measure of poverty in schools were also analyzed. Higher scores indicate a higher number of students receiving free and reduced cost lunches. The schools with higher NSLP scores are using videoconferencing about twice as often as the schools with lower NSLP scores. Finally, the schools with videoconference coordinators who received mostly curriculum training are using videoconferencing about twice as often as the schools with videoconferencing

coordinators who received mostly technical training (Lim, 2007). See Appendix C for additional details on the results of the pilot study.

Procedures

A web-based survey will be used because it is the most convenient way to access the participants around the world. In addition, most of them are comfortable with technology and should find it easy to complete the survey. The survey will be sent to the mailing lists described earlier on Tuesday, May 6, 2008 and left open through Friday, May 23, 2008. To increase response rate, I will send a reminder will be sent again on Monday, May 19, 2008. I will also encourage videoconference colleagues in educational service agencies across the country to remind their local videoconference coordinators to complete the survey. Phone calls will be used as a follow-up to gain increased response. People will be identified as a convenience sample and a snowballing technique (O'Leary, 2005) will be used for follow-up phone calls. This time window has been selected due to the close of the school year and the fact that many schools will be completing their own reports and counts of videoconferences from the school year. A few weeks later in the school year, and it would be impossible to get any responses. A few weeks earlier, and the data collected may not be complete as the schools may still be scheduling spring videoconferences. I have selected Tuesday as a survey launch date due to the other content that is often sent out on Mondays and due to the fact that the Collaboration Collage listserv is moderated on Tuesdays and Thursdays.

The survey data will be collected in Zoomerang, an online survey tool that I have access to through work. It collects the survey responses in a format that is easily imported to a spreadsheet program or SPSS for analysis. Since the data will be collected in Zoomerang, it will be impossible for me to know who completed the survey, thus

assuring anonymity and confidentiality. Zoomerang also has a feature to make sure participants do not complete the survey more than once.

Statistical Analysis

The F test will be used to test the statistical significance of the proposed relationships in the hypotheses. The F test was chosen because it is very robust. The assumptions of random selection of subjects and normal distribution of the variables can be violated without doing serious harm to the procedure (Newman et al., 2006).

Multiple linear regression will be used in analyzing the variance in predicting from one variable to another and in covarying some of the variables to test the alternative hypotheses (Newman & McNeil, 1998). Multiple linear regression was chosen because it is more flexible than traditional analysis of variance. With multiple linear regression, one can write the models that reflect the specific research question being asked. In addition, McNeil, Newman and Kelly (1996) point out that with multiple linear regression, one can test relationships between categorical variables, between categorical and continuous variables, or between continuous variables. The Bonferroni correction will be used to control the type error 1 rate for the multiple comparisons (Newman et al., 2006).

Two-tailed tests of significance will be used to test the relationships of those variables where the direction of the correlation may be uncertain. One-tailed tests of significance will be used where the direction of the correlation is quite certain based on previous research and experience.

The .05 level of significance will be used since the consequences of rejecting a true null hypothesis are not so serious as to warrant a more stringent confidence level. A power analysis will be done with Cohen's *d* to determine the effect size (Cohen, 1988).

Limitations

The study will be limited by those who respond to the survey and may be skewed towards those schools with a higher utilization of videoconferencing. Since the pilot data (Lim, 2007) was skewed towards schools with lower utilization, that skew may help balance out the data. A collection of demographic data will help assess the representation in the study, however, it may not actually be representative of the whole population of videoconference coordinators. Other limitations may be evident after the data is collected and then will be included here.

Summary

This chapter reviewed the population to be surveyed, the variables included in the survey, and how the instrumentation was developed. The pilot study was described, and the procedures for the research was included.

APPENDIX A

SURVEY INSTRUMENT

The survey will be administered in the online survey tool Zoomerang, so this is a list of questions only.

Coordinator Demographic Questions

1. Gender: Male / Female
2. Ethnicity: Caucasian, African American, Hispanic, Asian, mixed
3. Age:
4. Level of education: High school, 2 years college, 4 years college, Masters Degree
5. Country:
6. State/province:
7. Please select the job title that most closely matches yours:
    - media specialist / librarian
    - media aide
    - paraprofessional
    - secretary
    - teacher
    - technology specialist
    - principal/administrator
    - district videoconference coordinator
    - regional videoconference coordinator
8. Years of experience in education:
9. Years of experience with videoconferencing:
10. Time commitment to support videoconferencing:
    - full time coordinator
    - part time coordinator
    - several hours a week
    - one or two hours a week
    - less than one or two hours a week
11. Hours of videoconference training received:
12. Type of videoconference training received:
    - mostly technical training
    - mostly technical training with some curriculum training
    - mostly curriculum training with some technical training
    - mostly curriculum training
13. How many hours a week do you spend supporting videoconferencing during your regular work hours?
14. How many hours a week do you spend supporting videoconferencing outside of your regular work hours?

School Demographic Questions

15. School level: Elementary, Middle School, Secondary
16. Number of Classroom Teachers:
17. Number of Students:
18. Population of the town or city where the school is located:
19. Do you know the National School Lunch Program score for your school? yes / no
20. Please enter the NSLP score or your best guess:
21. Ethnic makeup of the school:
    - predominantly Caucasian
    - predominantly African American
    - predominantly Hispanic
    - predominantly Asian
    - mixed
22. Do you receive videoconference support (technical, content and/or training) from a consortium or educational service agency (BOCES, BOE, DOE, ESC, IU, ISD, RESA, LEA, etc.)?
23. How much did your school spend on videoconference programming this past school year?
24. Did your school receive grant funding for videoconference programming? If so, how much?
25. If you have a problem with a videoconference, which of the following sources of technical support are available to you?
    - a technical support person in my school
    - a technical support person in my district
    - a technical support person at my educational service agency
    - a phone number for the vendor who sold or made the equipment
    - other
26. If you have a problem with a videoconference, how fast can you usually get support to help solve the problem?
    - within a few minutes
    - within an hour
    - within a day
    - within a week
    - other

Utilization for 2007-2008 School Year

27. Total videoconference events. Please include all videoconference events (content providers, expert interviews, connections to peer classrooms, professional development, meetings). This should not include test calls. It should not include every session where students participated in daily course delivery.
28. Total student videoconference events. Please include all videoconference events where students participated (content providers, author and expert interviews, connections to peer classrooms). It should not include daily course delivery.
29. Number of teachers who used videoconference with their students during this school year.

30. Does your educational service agency create and facilitate free programming for your school?
31. Does your educational service agency subsidize programming from content providers?
32. Estimate what percent of the student videoconference events this year were provided or facilitated by your educational service agency.

Location of Videoconference System

33. Where is the videoconference system located?
    - mobile within one school
    - mobile within more than one school
    - fixed classroom
    - media center/library
    - computer lab
    - conference room.
    - other

34. Location of the videoconference system.
    - The current location/mobility of the VC unit works well in our building.
    - The current location of our VC unit usually works but could be better.
    - The current location/mobility of our VC unit makes it hard to use.
    - We haven't decided yet which location is best for our VC unit.
    -

35. What is the primary reason the videoconference system is located where it is?
    - Technical reasons (wires, switches, networking, etc.)
    - Proximity to coordinator
    - Ease of use for teachers
    - Only available room
    - Other

Quality of the Videoconference

36. Quality of the video
    - The picture rarely freezes and is only occasionally fuzzy.
    - The picture freezes sometimes and is occasionally pixilated or blocky.
    - The picture freezes often and sometimes there are big blocks on the screen.
    - Usually the picture is frozen for a long time before it moves.

37. Quality of the audio
    - The audio rarely breaks up and is only occasionally hard to understand.
    - The audio breaks up sometimes and is occasionally hard to understand.
    - The audio breaks up often and sometimes is hard to understand.
    - Usually the sound is garbled and hard to understand.

Supporting Videoconferencing

38. Comfort level with technology
    - I love technology and learning new things.
    - I can figure out what I need to do with technology.
    - I'm ok using technology if I have assistance.
    - I am generally frustrated by technology.

39. Comfort level with videoconferencing
    - I enjoy VC as an instructional tool in the curriculum.
    - I am gaining a sense of confidence in using VC in the curriculum.
    - I am currently trying to learn the basics. I am sometimes frustrated with VC.
    - I am anxious about using videoconferencing.

40. Use of the videoconference controls.
    - I can mute the microphone, solve common audio problems, use camera presets, and use different video source inputs such as a document camera.
    - I can mute the microphone, change the volume, move the camera, and use camera presets.
    - I can mute the microphone and move the camera.
    - I do not know how to use the controls.

41. Scheduling
    - I schedule all the VC programs, and I have a good system for keeping track of them all.
    - I know how to schedule VC events, but do not have an adequate system for keeping track of everything.
    - I know that I have to reserve the VC equipment, the room, and the place I'm connecting to, but I don't know exactly how to do it.
    - I am unsure about how to schedule VCs.

42. Test Calls
    - I do almost all of the test calls and connections on my own.
    - I sometimes do my own test calls and connections.
    - Occasionally I do my own test call and connection, but usually I have help.
    - The tech staff do all the test calls and connections for me.

43. Making the connection work
    - I feel confident when connecting a videoconference and I know what to do when there are problems.
    - I sometimes need assistance when connecting to a videoconference.
    - I am hesitant to try to connect a VC but am willing to try even if I don't have technical support.
    - I will not connect a VC unless I have technical support.

44. Helping teachers with a connection
    - I usually stay and assist teachers during the whole videoconference.
    - I usually stay for about half the VC.
    - I usually connect at VC and stay for the first few minutes.
    - Teachers usually connect on their own.

45. Getting students acquainted with technology.
    - I feel confident to explain VC to the students before a connection.
    - I can explain the basics of VC to the students.
    - I can repeat to the students what others have told me about how VC works.
    - I usually do not explain VC to the students before a connection.

Curriculum Integration

46. Knowledge of curriculum integration.
    - I know of programs appropriate for the curriculum and I persuade teachers to use VC.
    - Sometimes I can help teachers find VCs for their curriculum.
    - I have seen a few VCs that are good for our curriculum, but not enough to promote it.
    - I let the teachers decide what programs are appropriate for their curriculum.

47. Finding programs.
    - I can find VC programs and the accompanying teacher materials that align with the state curriculum.
    - I can navigate websites to find programs, but have difficulty knowing which programs are best for the teachers I support.
    - I find out about programs via emails and/or listservs. I don't know of any other way to know what is available.
    - I don't know of any resources that help me find VC programs.

48. Teacher recommendations.
    - I use more than one source to find programs other teachers recommended.
    - I can use at least one source to find programs other teachers have recommended.
    - I have a hard time remembering how to find teacher recommended programs.
    - I didn't know that teachers can recommend programs.

49. Student preparation.
    - I assist teachers in using the preparation materials for their program, or if none, I help them prepare the students.
    - I am able to assist teachers in using preparation materials for their program.
    - I forward teachers the preparation materials but I usually can't answer any questions about them.
    - I let the teachers take care of the student preparation for a videoconference.

Working with Teachers

50. Coordinator and Teacher attitudes
    - I actively motivate and strongly encourage the teachers to try videoconferences that meet their curriculum.
    - Sometimes I encourage the teachers to try videoconferences that meet their curriculum.
    - Occasionally I encourage teachers to try videoconferences.
    - I let the teachers take the initiative to ask for help with a videoconference.

51. Helping teachers with time
    - I actively help teachers see how to make time for videoconferencing in their curriculum.
    - Sometimes I help teachers see how to make time for videoconferencing in their curriculum.
    - Once in a while, I suggest ways to make time for videoconferencing in the curriculum.
    - I let the teachers decide if they have time to use videoconferencing.

52. Motivating and overcoming reticence
    - I feel confident and comfortable in helping all the teachers and students overcome reticence to using VC
    - I am able to help some teachers and students overcome reticence to using VC
    - Once in a while I try to help teachers and students overcome reticence to using VC
    - I do not usually talk to teachers or students about the reticence to use VC

Teachers

53. Teacher curriculum integration.
    - Most of the teachers can design their own activities using videoconferencing.
    - A few teachers are starting to design their own curriculum activities using VC.
    - Teachers need ideas and prompting to use VC in their curriculum.
    - Teachers don't have ideas or interest in using VC in their curriculum.

54. Teacher attitudes
    - Most of the teachers in my school are excited about using VC.
    - Some of the teachers in my school are interested in using VC.
    - A few teachers are trying VC because they have to, but most don't want to.
    - None of the teachers are interested in VC.

55. Experience
    - All of the teachers in my school have used videoconferencing.
    - Most of the teachers in my school have done at least one VC.
    - Only one or two of the same teachers use videoconferencing.
    - None of the teachers have tried a videoconference.

56. Time
    - Most of the teachers plan ahead to incorporate VC in their curriculum.
    - Some of the teachers plan ahead to incorporate VC in their curriculum.
    - A few of the teachers plan ahead to incorporate VC in their curriculum.
    - Most of the teachers plan ahead to incorporate VC in their curriculum.

57. Making time for VCs
    - Teachers scheduling time for VC experiences because they are a curriculum priority.
    - Teachers feel that the time to select and prepare for a videoconference is worth it.
    - Teachers struggle to find time to select and prepare for VCs and aren't sure that it's worth the effort.
    - Teachers feel they don't have time to use VC.

58. Using the videoconference system
    - Most of the teachers in my school are comfortable making the connection and operating the camera on their own.
    - Some of the teachers in my school are comfortable making the connection and operating the camera on their own.
    - A few of the teachers in my school can operate the camera on their own.
    - None of the teachers in my school can operate the camera on their own.

Principal

59. Principal experience with VC
    - My principal has had positive experiences seeing students engaged in VCs.
    - My principal has had at least one positive experience seeing students engaged in a VC.
    - My principal has seen professional development over videoconferencing, but not a student videoconference.
    - My principal has not experienced a videoconference.

60. Principal support
    - My principal sees the value of VC programs and strongly recommends that teachers participate in VCs.
    - My principal sees the value of VC and sometimes recommends that teachers use VC.
    - My principal is beginning to see the value of VC but leaves the decision to use VC to the teachers.
    - My principal doesn't see the value of videoconference programs and is not supportive of VC.

Thank you for your time in completing this survey. Your support of videoconferencing in your school is much appreciated!

APPENDIX B

PILOT SURVEY

This is the version that was used for the pilot study in May 2007.

K12 Videoconferencing Implementation Rubric

Section 1: Demographic Data
1. Name/Code

2. Job Title. Please circle the position that most closely matches yours.
Media Specialist, Librarian, Paraprofessional, Secretary, Teacher , Technology Specialist, Principal, Other

3. Length of Time Supporting Videoconferencing (in years): _____

4. Videoconference Unit Location. Where is the videoconferencing system usually located in your school? Circle one. Mobile cart Library/Media Center Fixed Room

5. Number of Professional Development/ Training Hours on Videoconferencing: _____

6. Type of Training / Professional Development:
Predominantly how to integrate VC in the curriculum
Mostly curriculum integration with some technical training
Mostly technical training with some curriculum integration
Predominantly technical training

Instructions: Please check the box beside each description that best matches your current opinion. Note that the abbreviation VC is used in this rubric to denote videoconferencing.
In the Zoomerang version, a final option of "Not applicable" was included for each question.

Section 2: Coordination				
7. Comfort level with technology in general.	□ I love technology and learning new things.	□ I can figure out what I need to do with technology.	□ I'm ok using technology if I have assistance.	□ I am generally frustrated by technology.
8. Comfort level with VC	□ I enjoy VC as an instructional tool in the curriculum.	□ I am gaining a sense of confidence in using VC in the curriculum.	□ I am currently trying to learn the basics. I am sometimes frustrated with VC.	□ I am anxious about using videoconferencing.
9. Use of the controls.	I can mute the microphone, solve common	I can mute the microphone, change the	I can mute the microphone and move the	I do not know how to use the controls.

	audio problems, use camera presets, and use different video source inputs such as a document camera.	volume, move the camera, and use camera presets.	camera.	
Section 3. Technical Quality				
10. Quality of video	□ The picture rarely freezes and is only occasionally fuzzy.	□ The picture freezes sometimes and is occasionally pixilated or blocky.	□ The picture freezes often and sometimes there are big blocks on the screen.	□ Usually the picture is frozen for a long time before it moves.
11. Quality of audio	□ The audio rarely breaks up and is only occasionally hard to understand.	□ The audio breaks up sometimes and is occasionally hard to understand.	□ The audio breaks up often and sometimes is hard to understand.	□ Usually the sound is garbled and hard to understand.
Section 4: Supporting the Videoconferences				
12. Time to support VC	□ My school/district provides more than one hr/week release time to support VC.	□ My school/district provides 30-50 min / week release time to support VC	□ My school/district gave 30 min or less/week release time to support VC.	□ My school/district does not provide any release time to support VC.
13. Scheduling	□ I schedule all the VC programs, and I have a good system for keeping track of them all.	□ I know how to schedule VC events, but do not have an adequate system for keeping track of everything.	□ I know that I have to reserve the VC equipment, the room, and the place I'm connecting to, but I don't know exactly how to do it.	□ I am unsure about how to schedule VCs.
14. Test Calls	□ I do almost all of the test calls and connections on my own.	□ I sometimes do my own test calls and connections.	□ Occasionally I do my own test call and connection, but usually I have help.	□ The tech staff do all the test calls and connections for me.
15. Making the connection work	□ I feel confident when connecting a videoconference and I know what to do when there	□ I sometimes need assistance when connecting to a videoconferenc	□ I am hesitant to try to connect a VC but am willing to try even if I don't	□ I will not connect a VC unless I have technical support.

	are problems.	e.	have technical support.	
16. Availability of tech support	□ I have timely support from both my district and educational service agency.	□ I have timely support from either my district or my educational service agency, but not from both.	□ I have access to support from either my district or my educational service agency, but their time is limited to assist me with VC.	□ I do not have access to any tech support (local or educational service agency) to assist me with VC.
17. Helping teachers with a connection	□ I usually stay and assist teachers during the whole videoconference.	□ I usually stay for about half the VC.	□ I usually connect at VC and stay for the first few minutes.	□ Teachers usually connect on their own.
18. Getting students acquainted with technology.	□ I feel confident to explain VC to the students before a connection.	□ I can explain the basics of VC to the students.	□ I can repeat to the students what others have told me about how VC works.	□ I am not able to explain VC to the students before a connection.
Section 5: Administrative Issues				
19. Budget	□ My school has set aside adequate funds for using VC.	□ The district has a limited budget for VC.	□ Alternative funds from non-district sources are available to support VC within my school.	□ There is no funding for videoconferencing in my school.
20. Principal experience with VC	□ My principal has had positive experiences seeing students engaged in VCs.	□ My principal has had at least one positive experience seeing students engaged in a VC.	□ My principal has seen professional development over videoconferencing, but not a student videoconference.	□ My principal has not experienced a videoconference.
21. Principal support	□ My principal sees the value of VC programs and strongly recommends that teachers participate in VCs.	□ My principal sees the value of VC and sometimes recommends that teachers use VC.	□ My principal is beginning to see the value of VC but leaves the decision to use VC to the teachers.	□ My principal doesn't see the value of videoconference programs and is not supportive of VC.

22. Location	□ The current location/mobility of the VC unit works well in our school.	□ The current location of our VC unit usually works but could be better.	□ The current location/mobility of our VC unit makes it hard to use.	□ We haven't decided yet which location is best for our VC unit.
Section 6: Curriculum Integration				
23. Knowledge	□ I know of programs appropriate for the curriculum and I persuade teachers to use VC.	□ Sometimes I can help teachers find VCs for their curriculum.	□ I have seen a few VCs that are good for our curriculum, but not enough to promote it.	□ I haven't seen any programs that are appropriate for our teachers' curriculum.
24. Finding programs	□ I can find VC programs and the accompanying teacher materials that align with the state curriculum.	□ I can navigate websites to find programs, but have difficulty knowing which programs are best for the teachers I support.	□ I find out about programs via emails and/or listservs. I don't know of any other way to know what is available.	□ I don't know of any resources that help me find VC programs.
25. Teacher Recommendations	□ I use more than one source to find programs other teachers recommended.	□ I can use at least one source to find programs other teachers have recommended.	□ I have a hard time remembering how to find teacher recommended programs.	□ I didn't know that teachers can recommend programs.
26. Student preparation	□ I assist teachers in using the preparation materials for their program, or if none, I help them prepare the students.	□ I am able to assist teachers in using preparation materials for their program.	□ I forward teachers the preparation materials but I usually can't answer any questions about them.	□ I don't know how teachers should be preparing their students for a videoconference.
Section 7: Teachers				
27. Attitudes	□ Most of the teachers in my school are excited about using VC.	□ Some of the teachers in my school are interested in using VC.	□ A few teachers are trying VC because they have to, but most don't want to.	□ None of the teachers are interested in VC.
28. Experience	□ All of the	□ Most of the	□ Only one or	□ None of the

	teachers in my school have used videoconferencing.	teachers in my school have done at least one VC.	two of the same teachers use videoconferencing.	teachers have tried a videoconference.
29. Time	□ Most of the teachers plan ahead to incorporate VC in their curriculum.	□ Some of the teachers plan ahead to incorporate VC in their curriculum.	□ A few of the teachers plan ahead to incorporate VC in their curriculum.	□ Most of the teachers plan ahead to incorporate VC in their curriculum.
30. Using the videoconference system	□ Most of the teachers in my school are comfortable doing the connections on their own.	□ Some of the teachers in my school are comfortable doing the connections on their own.	□ A few of the teachers in my school can operate the camera on their own.	□ None of the teachers in my school can operate the camera on their own.
24. Curriculum design	□ Most of the teachers can design their own activities using videoconferencing.	□ A few teachers are starting to design their own curriculum activities using VC.	□ Teachers need ideas and prompting to use VC in their curriculum.	□ Teachers don't have ideas or interest in using VC in their curriculum.

Thank you for your time in completing this rubric. Your support of videoconferencing in your school is much appreciated!

APPENDIX C

PILOT STUDY RESULTS

The participants in the pilot study were videoconference coordinators in elementary, middle and high schools in southwest Michigan. The frequencies are shown in Table 1. Most of the videoconference coordinators are female (38 female; 1 male). All of them are Caucasian. Data on age, level of education, and socio-economic status were not collected. The position the videoconference coordinators held within the district included teacher (39%), media specialist (28%), paraprofessional (27%), secretary (2%), technology specialist (2%), and principal (2%). Most of the videoconference coordinators had just completed their first year of supporting videoconferencing (72%) since the USDA RUS DLT grant provided equipment at the beginning of the 2006-2007 school year and this survey was given in May 2007. However, some of the building coordinators were more experienced (10% with 2-3 years experience; 10% with 4-5 years experience; and 8% with 6 or more years experience). Most of the videoconference coordinators also had just begun their training in videoconferencing. 64% had received 1-15 hours of professional development; 15% had received 16-30 hours of professional development; 20% had received 31-50 hours of professional development; and 3% had received more than 51 hours of professional development.

The schools in this study were mostly elementary schools (67%). The frequencies are shown in Table 2. Most of the high schools in Berrien and Cass counties already had videoconferencing equipment. However the schools include a few middle schools, junior highs, and mixed middle and high school buildings (33%), referred to in this study as secondary schools. The schools ranged in size from small (8 teachers) to large (74 teachers). Most of the schools had 20-25 teachers (47%). The schools in this study

Table 1

Videoconference Coordinator Demographic Frequencies Table

Variable	*n*	%
Gender		
Male	1	3%
Female	38	97%
Position in School		
Media Specialist	11	28.2%
Paraprofessional	10	25.6%
Secretary	1	2.6%
Teacher	15	38.5%
Technology Specialist	1	2.6%
Principal	1	2.6%
Years Supporting Videoconferencing		
0-1 Years	28	71.8%
2-3 Years	4	10.3%
4-5 Years	4	10.3%
6 or More Years	3	7.7%

were particularly poor and rural due to the requirements of the USDA RUS DLT grant. The USDA defines an “exceptionally rural area” as having a population of less than 5000 people. 77% of the schools fit into this category. The rest (23%) were in the USDA rural area, with a population of 5001-10,000 people. The National School Lunch Program (NSLP) is a recognized measure of poverty in education grants and programs. Higher scores indicate higher numbers of students participating in the free and reduced lunch program, which indicates higher poverty among the students. The videoconference equipment was located in one of three areas in the school: a mobile cart (33%), the library or media center (43%), or a fixed room (23%).

Table 2

Research Site Demographic Frequencies Table

Variable	*n*	%
School Level		
Elementary	26	67%
Secondary	13	33%
USDA Rurality Score		
30 – Rural Area 5001-10,000 pop	9	23%
45 – Exceptionally Rural Area, Less than 5000 pop	30	77%
Location of VC Equipment		
Mobile Cart	13	33%
Library / Media Center	17	44%
Fixed Room	9	23%

To examine the frequency of use compared to the variables in this study, it was necessary to develop a usage score formula. This formula takes into consideration the size of the school (number of teachers) as well as the number of videoconference events that occurred during the 2006-2007 school year. The total events were multiplied by the percent of teachers in the school who used videoconferencing to create a "usage score" that allows for comparison of total use of videoconferencing in various sized schools. The usage score is the total events for the building (including content providers, collaborative projects, meetings, and professional development) multiplied by the percent of teachers in the school who used videoconferencing. This score gives an estimate of the extent of videoconferencing use in the building. It is a rare school that has every teacher participating in videoconferencing. The schools in this study had usage scores ranging

from 0.3 to 25.8. In these results, only six of the schools had more events than they had teachers. These usage scores are above 13. The mean was 5.3, median 3, and mode 3.

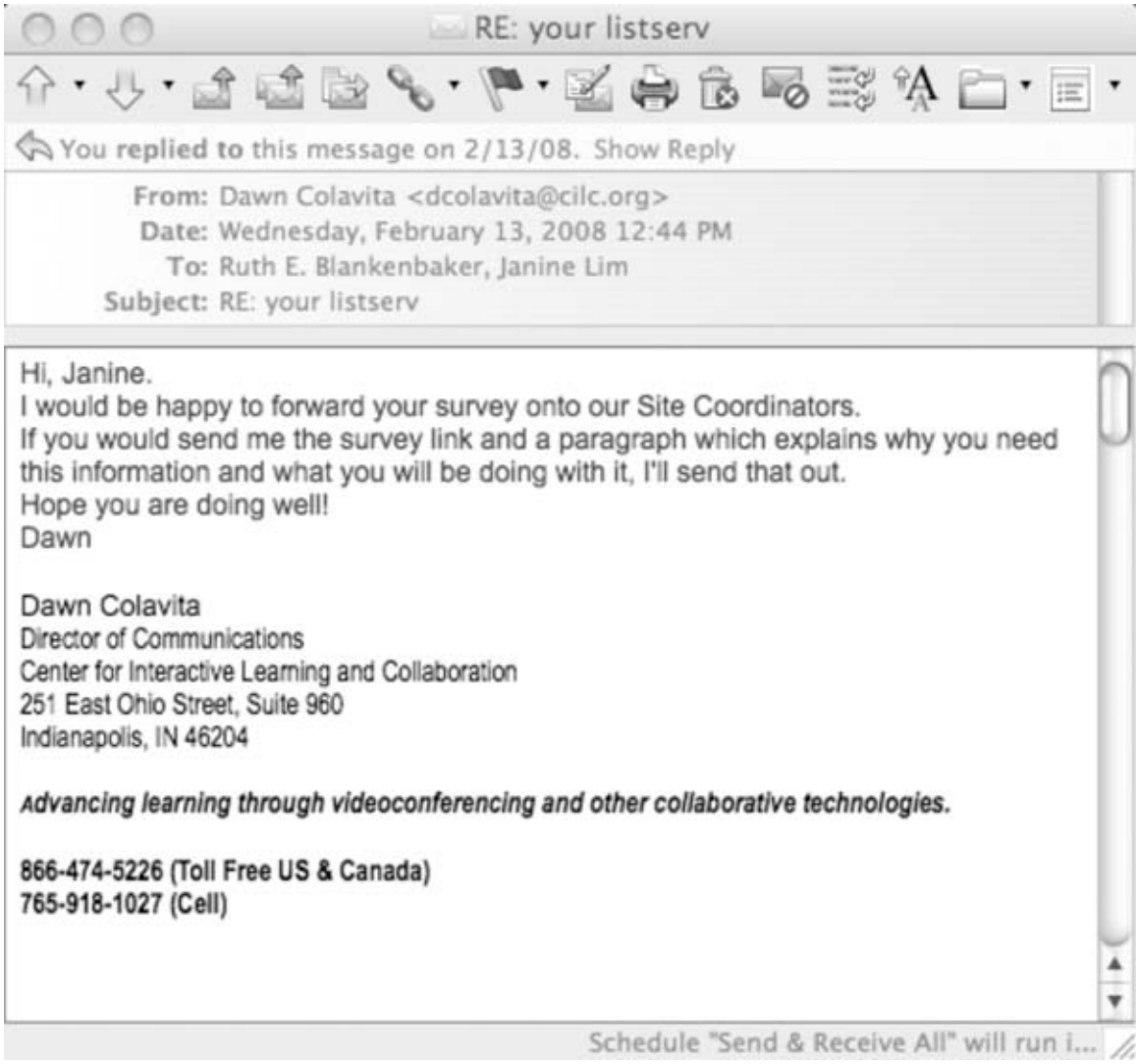
Six variables were examined to see if there was a relationship with the frequency of use of videoconferencing in the schools participating in the study. Three of the variables studied were not a significant factor in the frequency of use. The size of the school, the location of the videoconferencing system, and the years of experience of the videoconference coordinator are independent of the frequency of use of videoconferencing in the school. However, three of the variables were significant in the frequency of use of videoconferencing in the schools studied. The elementary schools are using videoconferencing about twice as often as the secondary schools. The poorer schools are using videoconferencing about twice as often as the richer schools. Finally, the schools with videoconference coordinators who received mostly curriculum training are using videoconferencing about twice as often as the schools with videoconferencing coordinators who received mostly technical training (Lim, 2007).

These results are just the beginning of analysis of the pilot data. Further analysis will be done in April and May 2008 as part of the required research projects in EDRM 612: Applied Statistics for Education and Psychology II.

APPENDIX D

LISTSERV PERMISSIONS

Center for Interactive Learning and Collaboration (CILC) Listserv


RE: your listserv

You replied to this message on 2/13/08. Show Reply

From: Dawn Colavita <dcolavita@cilc.org>
Date: Wednesday, February 13, 2008 12:44 PM
To: Ruth E. Blankenbaker, Janine Lim
Subject: RE: your listserv

Hi, Janine.
I would be happy to forward your survey onto our Site Coordinators.
If you would send me the survey link and a paragraph which explains why you need this information and what you will be doing with it, I'll send that out.
Hope you are doing well!
Dawn

Dawn Colavita
Director of Communications
Center for Interactive Learning and Collaboration
251 East Ohio Street, Suite 960
Indianapolis, IN 46204

Advancing learning through videoconferencing and other collaborative technologies.

866-474-5226 (Toll Free US & Canada)
765-918-1027 (Cell)

Schedule "Send & Receive All" will run i...

Collaboration Collage Listserv (AT&T or Edvidconf1)

Linda this is for you

You **replied to** this message on 3/14/08. Show Reply

From: Linda Woods <lwhyman@pacbell.net>
Date: Thursday, March 13, 2008 1:14 PM
To: jlim@remc11.k12.mi.us
Subject: Linda this is for you

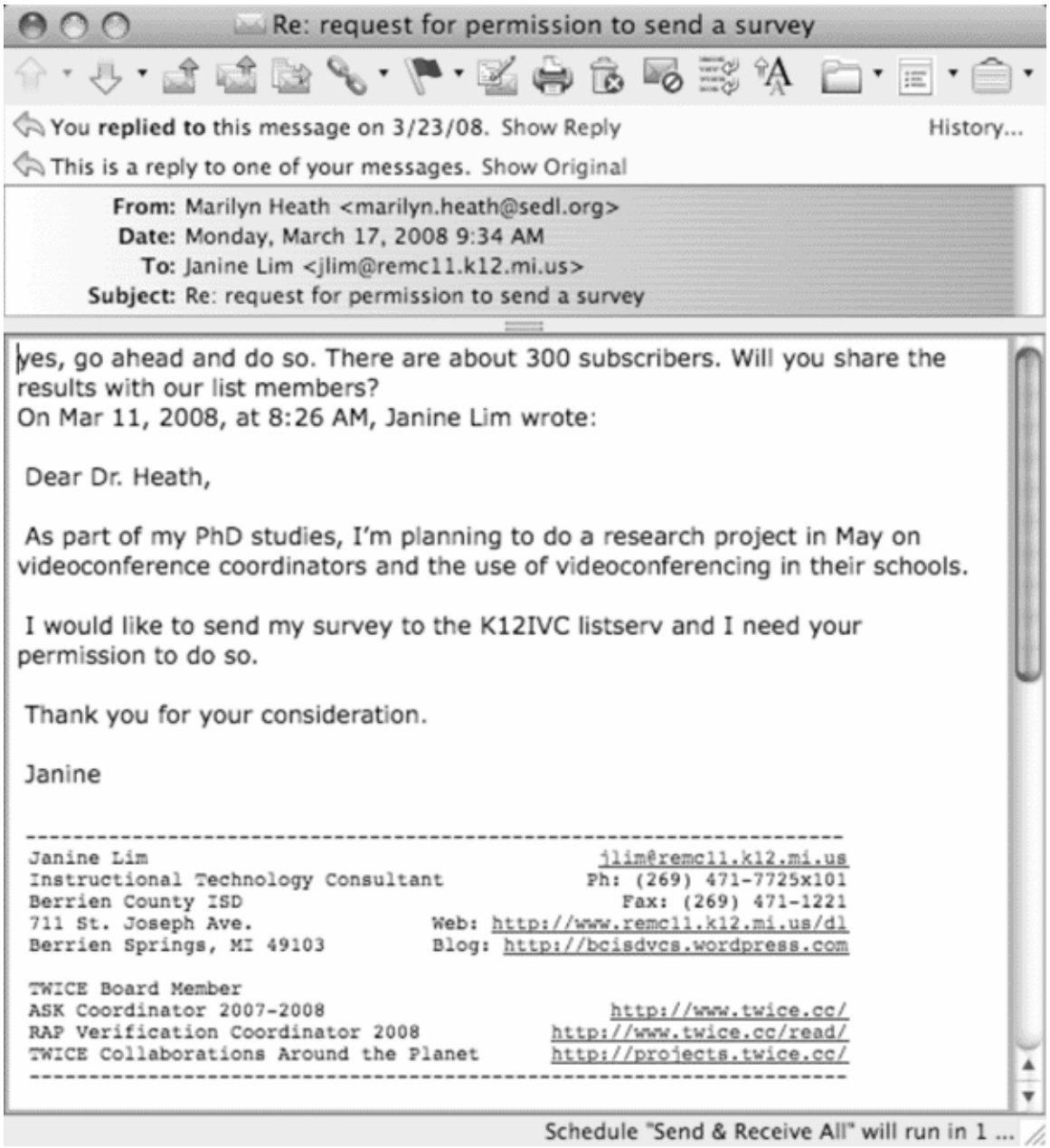
Hello Janine. Of course you may send your survey to the list or the URL of the online tool, whichever. This is from my personal email address. My work address is linda.woods@att.com

So, how are things going?

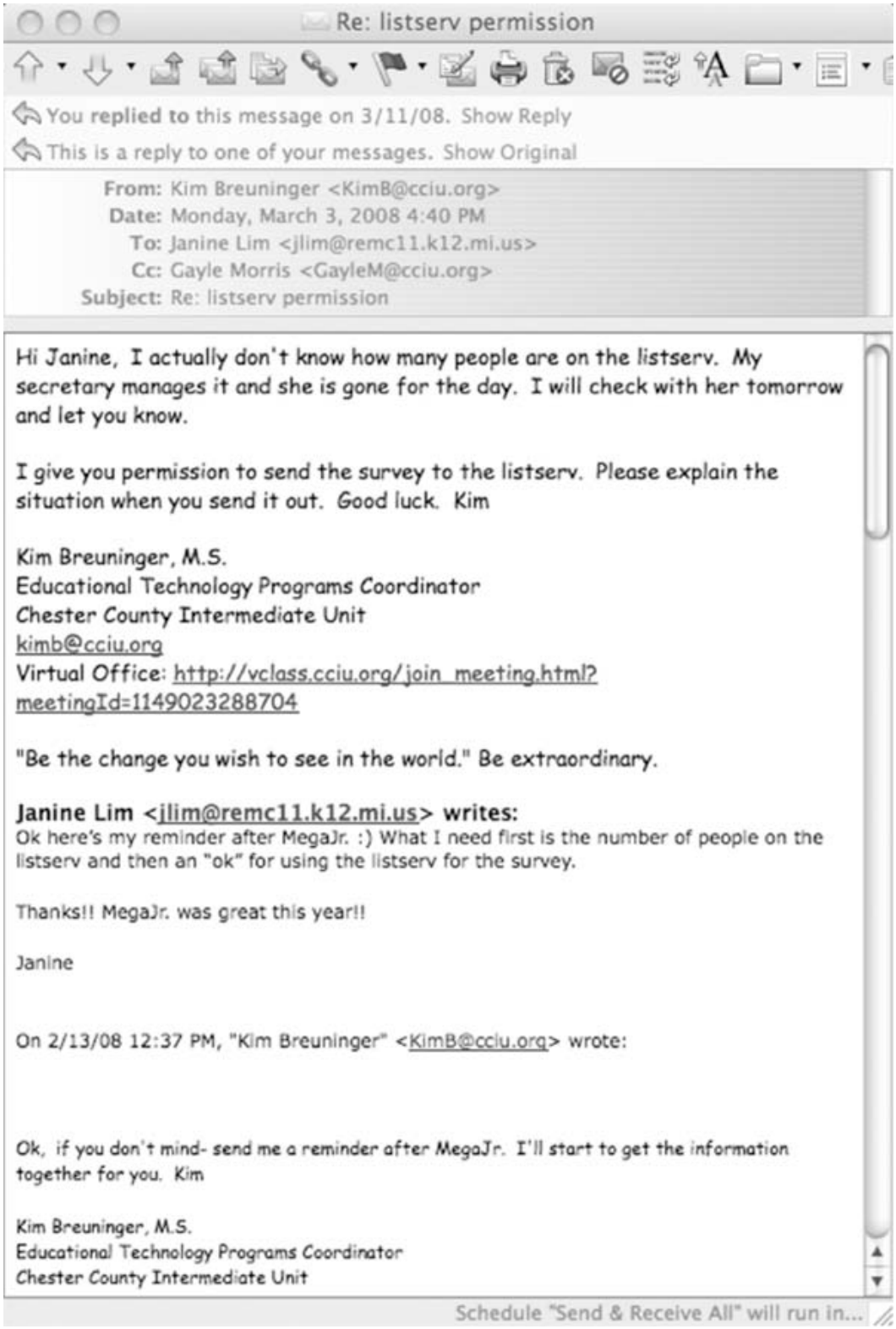
>> Date: Tue, 11 Mar 2008 09:29:57 -0400
>> Subject: Linda this is for you
>> From: Janine Lim <jlim@remc11.k12.mi.us>
>> To: <ed1vidconf@YAHOO.COM>
>>
>> Dear Linda,
>>
>> I couldn't find a direct email for you. Please don't
>> send this to the
>> listserv.
>>
>> As part of my PhD studies, I'm planning to do a
>> research project in May on
>> videoconference coordinators and the use of
>> videoconferencing in their
>> schools.
>>
>> I would like to send my survey to the Collaboration
>> Collage listserv and I
>> need your permission to do so.
>>
>> Thank you for your consideration.
>>
>> Janine
>>
>----------
>> Janine Lim
>> jlim@remc11.k12.mi.us
>> Instructional Technology Consultant Ph:
>> (269) 471-7725x101
>> Berrien County ISD
>> Fax: (269) 471-1221
>> 711 St. Joseph Ave. Web:
>> http://www.remc11.k12.mi.us/dl
>> Berrien Springs, MI 49103 Blog:
>> http://bcisdvcs.wordpress.com

Schedule "Send & Receive All" will run in...

K12 IVC Listserv



Megaconference Jr. Listserv



Re: listserv permission

You replied to this message on 3/11/08. Show Reply

This is a reply to one of your messages. Show Original

From: Kim Breuninger <KimB@cciu.org>
Date: Monday, March 3, 2008 4:40 PM
To: Janine Lim <jlim@remc11.k12.mi.us>
Cc: Gayle Morris <GayleM@cciu.org>
Subject: Re: listserv permission

Hi Janine, I actually don't know how many people are on the listserv. My secretary manages it and she is gone for the day. I will check with her tomorrow and let you know.

I give you permission to send the survey to the listserv. Please explain the situation when you send it out. Good luck. Kim

Kim Breuninger, M.S.
Educational Technology Programs Coordinator
Chester County Intermediate Unit
kimb@cciu.org
Virtual Office: http://vclass.cciu.org/join_meeting.html?meetingId=1149023288704

"Be the change you wish to see in the world." Be extraordinary.

Janine Lim <jlim@remc11.k12.mi.us> writes:
Ok here's my reminder after MegaJr. :) What I need first is the number of people on the listserv and then an "ok" for using the listserv for the survey.

Thanks!! MegaJr. was great this year!!

Janine

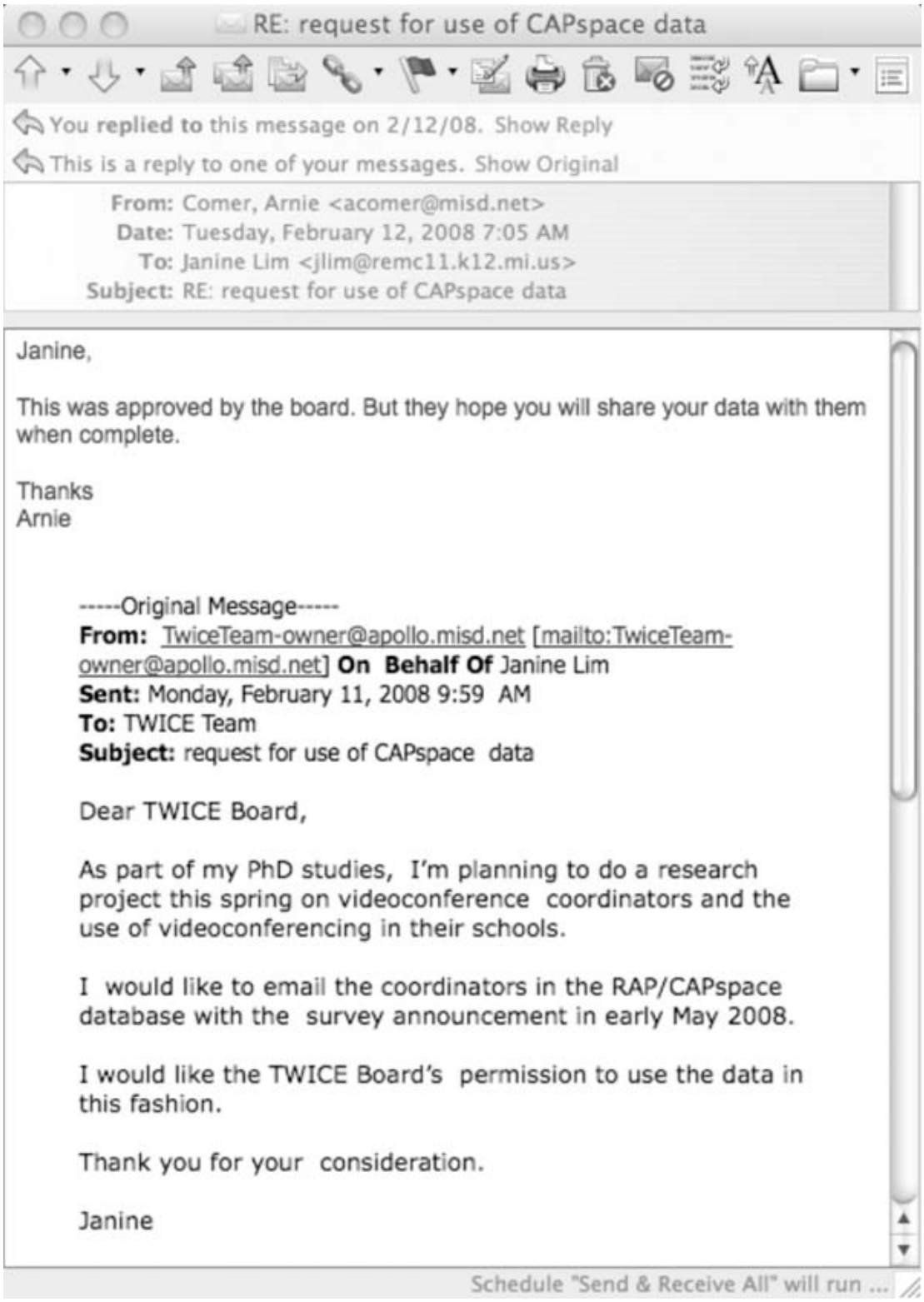
On 2/13/08 12:37 PM, "Kim Breuninger" <KimB@cciu.org> wrote:

Ok, if you don't mind- send me a reminder after MegaJr. I'll start to get the information together for you. Kim

Kim Breuninger, M.S.
Educational Technology Programs Coordinator
Chester County Intermediate Unit

Schedule "Send & Receive All" will run in...

TWICE (Two Way Interactive Connections in Education) Permission



RE: request for use of CAPspace data

You **replied to** this message on 2/12/08. Show Reply

This is a reply to one of your messages. Show Original

From: Comer, Arnie <acomer@misd.net>
Date: Tuesday, February 12, 2008 7:05 AM
To: Janine Lim <jlim@remc11.k12.mi.us>
Subject: RE: request for use of CAPspace data

Janine,

This was approved by the board. But they hope you will share your data with them when complete.

Thanks
Arnie

-----Original Message-----
From: TwiceTeam-owner@apollo.misd.net [mailto:TwiceTeam-owner@apollo.misd.net] **On Behalf Of** Janine Lim
Sent: Monday, February 11, 2008 9:59 AM
To: TWICE Team
Subject: request for use of CAPspace data

Dear TWICE Board,

As part of my PhD studies, I'm planning to do a research project this spring on videoconference coordinators and the use of videoconferencing in their schools.

I would like to email the coordinators in the RAP/CAPspace database with the survey announcement in early May 2008.

I would like the TWICE Board's permission to use the data in this fashion.

Thank you for your consideration.

Janine

Schedule "Send & Receive All" will run ...

REFERENCE LIST

Amirian, S. (2003). *Pedagogy and videoconferencing: A review of recent literature* [PowerPoint slides]. Retrieved from http://oit.montclair.edu/documentationpdf/amirian_megacon.pdf

Anderson, T., & Rourke, L. (2005). *Videoconferencing in kindergarten-to-grade 12 settings: A review of the literature*. Retrieved from http://www.vcalberta.ca/research/index.cfm

AT&T (2006). *Videoconference adventures*. Retrieved from http://www.kn.pacbell.com/wired/vidconf/adventures.html

AT&T (2007). *Videoconferencing for learning*. Retrieved from http://www.kn.att.com/wired/vidconf/

Atkinson, T. R., Jr. (1999). *Toward an understanding of instructor-student interactions: A study of videoconferencing in the postsecondary distance learning classroom.* Retrieved from ProQuest Digital Dissertation. (AAT 9925524)

Ba, H., & Keisch, D. (2004). *Bridging the gap between formal and informal learning: Evaluating the Seatrek distance learning project*. Retrieved from http://cct.edc.org/report_summary.asp?numPublicationId=177

Baber, J. R. (1996). *Re-visioning corporate communication: A case study of videoconferencing implementation.* Retrieved from ProQuest Digital Dissertation. (AAT 9700122)

Baker, D. R. (2002). *Teacher perceptions of the educational outcomes for direct instruction compressed video classroom environment within remote classrooms at the secondary school level.* Retrieved from ProQuest Digital Dissertation. (AAT 3056384)

BCISD (2008). *Videoconference program database*. Retrieved from http://bcisdvc.org/

BECTA (2003). *What the research says about video conferencing in teaching and learning*. Retrieved from http://publications.becta.org.uk/display.cfm?resID=25801

Booth, G. W. (2006). *High school students' experiences taking a calculus course through video conferencing: A case study.* Retrieved from ProQuest Digital Dissertation. (AAT NR13923)

Bore, J. C. (2005). *Distance education in the preparation of special education personnel: An examination of videoconferencing and web-based instruction.* Retrieved from ProQuest Digital Dissertation. (AAT 3196134)

Bose, M. (2007). *Influencing the utilization of videoconferencing technology: Teacher, school and professional development characteristics.* Retrieved from ProQuest Digital Dissertation. (AAT 3271340)

Bruke, M., Beach, B., & Isman, A. (1997). Learning community link: Enhancing learning using telecommunication technologies. *THE (Technological Horizons in Education) Journal, 25*(1). Retrieved from http://www.thejournal.com/

Burke, C., Lundin, R., & Daunt, C. (1997). Pushing the boundaries of interaction in videoconferencing: A dialogical approach. *Distance Education, 18*(2), 349-360. doi:10.1080/0158791970180210

Carville, S., & Mitchell, D. R. (2001). It's a bit like Star Trek: The effectiveness of video conferencing. *Innovations in Education and Training International, 37*(1), 42-49. doi:10.1080/135580000362070

Cavanaugh, C. (1999). The effectiveness of interative distance education technologies in K-12. *International Journal of Educational Telecommunications, 7*(1), 73-88.

Chapman, D. S. (1999). Expanding the search for talent: Adopting technology-based strategies for campus recruiting and selection. *Journal of Cooperative Education, 34*(2), 35-41.

Cifuentes, L., & Murphy, K. L. (2000). Promoting multicultural understanding and positive self-concept through a distance learning community: Cultural connections. *Educational Technology Research and Development, 48*(1), 69-83. doi:10.1007/BF02313486

CILC (2008). *Content provider programs*. Retrieved from http://www.cilc.org/c/education/content_provider_programs.aspx

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Earlbaum Associates.

Currie, N. J. (2007). *A study of the factors that impact videoconferencing as a learning tool within three regional service sgencies in Michigan*. Unpublished dissertation. Oakland University, Rochester, MI.

Dudding, C. C. (2004). *Perceptions of the use of videoconferencing for supervision: Differences among graduate students.* Retrieved from ProQuest Digital Dissertation. (AAT 3108759)

Fee, S., & Fee, L. (2005). *The pedagogical value of videoconference technology.* Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications 2005, Montreal, Canada. Retrieved from http://www.editlib.org/

Fiege, K. H. M. (2005). *Educational researchers using real-time videoconferencing to collaborate: Thoughts and feelings shared.* Retrieved from ProQuest Digital Dissertation. (AAT MR09088)

Freed, S., & Lim, J. (2006). *We have the videoconference equipment installed, now what?* Manuscript submitted for publication.

Friedman, T. L. (2005). *The world is flat: A brief history of the twenty-first century*. New York, NY: Farrar, Straus and Giroux.

Gage, J., Nickson, M., & Beardon, T. (2002). *Can videoconferencing contribute to teaching and learning? The experience of the Motivate project.* Paper presented at the Annual Conference of the British Educational Research Association. Retrieved from http://www.leeds.ac.uk/educol/documents/00002264.htm

Gilham, C., & Moody, B. (2001). Face to face: Videoconferencing creates opportunities for incarcerated youth. *Journal of Correctional Education, 52*(1), 29-31.

Glaser, R. (2008, February 1, 2008). *Videoconference glossary*. Retrieved from http://www.edlink12.net/vcrox/2008/02/01/videoconference-glossary/

Glasgow, D., & Zoellmer, D. (2003, March). TWICE connects readers across America via two-way videoconferencing. *MACUL Newsletter*. Retrieved from http://www.macul.org/

Greenberg, A. (2003). *Best practices in live content acquisition by distance learning organizations*. Retrieved from http://www.polycom.com/common/documents/whitepapers/best_practices_in_live_content_acquisition_by_distance_learning_organizations.pdf

Greenberg, A. (2004). Navigating the sea of research on videoconferencing-based distance education: A platform for understanding the technology's effectiveness and value. Retrieved from http://www.wainhouse.com/files/papers/wr-navseadistedu.pdf

Greenberg, A. (2006). *Taking the wraps off videoconferencing in the U.S. classroom: A state-by-state analysis*. Retrieved from http://www.wrplatinum.com/content.aspx?CID=5912

Greenleaf, R. K. (1977). *Servant leadership: A journey into the nature of legitimate power and greatness*. New York, NY: Paulist Press.

Hartman, H., & Crook, B. (1997). Faculty development videoconferences: What we have learned. *T.H.E. Journal, 24*(8), 69-72. Retrieved from http://www.thejournal.com

Hayden, K. L. (1999). *Videoconferencing in K-12 education: A Delphi study of characteristics and critical strategies to support constructivist learning experiences.* Retrieved from ProQuest Digital Dissertation. (AAT 9934596)

Haydock, P. G., & Dennison, J. A. (2004). *Assessing the needs of K-12 audiences in synchronous educational videoconferencing*. Paper presented at the 20th Annual Conference on Distance Teaching and Learning. Retrieved from http://www.dlt.ncssm.edu/distance_learning/forms/AssessNeedsInIVC.pdf

Heath, M., & Holznagel, D. (2002). Interactive videoconferencing: A literature review. *K-12 National Symposium for Interactive Videoconferencing*. Retrieved from http://neirtec.terc.edu/K12vc/resources/litpolicy.pdf

Howland, J., & Wedman, J. (2003). *Experiencing diversity: Learning through videoconference technology.* Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications 2003, Honolulu, Hawaii, USA. Retrieved from http://www.editlib.org/

ISTE (2007). *National educational technology standards for students: The next generation*. Retrieved from http://www.iste.org/

Joyce, B. R., & Showers, B. (1988). *Student achievement through staff development*. New York, NY: Longman.

Keefe, D. D. (2003). *A case study of the integration of a video learning center at an elementary school.* Retrieved from ProQuest Digital Dissertation. (AAT 3091163)

Kerlinger, F. N. (1973). *Foundations of behavioral research* (2nd ed.). New York, NY: Holt, Rinehart and Winston.

Kinginger, C. (1999). Videoconferencing as access to spoken French. *Canadian Modern Language Review, 55*(4), 468-489.

Kinnear, H., McWilliams, S., & Caul, L. (2002). The use of interactive video in teaching teachers: an evaluation of a link with a primary school. *British Journal of Educational Technology, 33*(1), 17-26.

Kotter, J. P. (1996). *Leading change*. Boston, MA: Harvard Business School Press.

Kubasko, D., Jones, M. G., Tretter, T., & Andre, T. (2007). Is it live or is it Memorex? Students' synchronous and asynchronous communication with scientists. *International Journal of Science Education, 30*(4), 495-514. doi:10.1080/09500690701217220

Lee, M. M. (2004). *Going global: The complexities of fostering intercultural understanding in a rural school using videoconferencing technology.* Retrieved from ProQuest Digital Dissertation. (AAT 3141606)

Lim, J. (2003, January). MysteryQuest video conference exercises give middle school students a reason to research. *MACUL Newsletter*. Retrieved from http://www.macul.org/

Lim, J. (2007). *A study of the implementation of videoconferencing in 35 schools in southwest Michigan*. Unpublished data.

Lim, J. (2007, September 28). *Curriculum videoconferencing*. Retrieved from http://bcisdvcs.wordpress.com/2007/09/28/curriculum-videoconferencing/

Lück, M., & Laurence, G. (2005). Innovative teaching: Sharing expertise through videoconferencing. *Innovate, 2*(1). Retrieved from http://www.innovateonline.info/

Martinez, M. D., & MacMillan, G. (1998). *A joint distance learning course in American government*. (ERIC Document Reproduction Service No. ED428005)

McCombs, G. B., Ufnar, J. A., & Shepherd, V. L. (2007). The virtual scientist: Connecting university scientists to the K-12 classroom through videoconferencing. *Advances in Physiology Education, 31*(1), 62-66. doi:10.1152/advan.00006.2006

McDonald, S. R. (2007). *Characteristics leading to a successful implementation of laptop computers: A case study.* Retrieved from ProQuest Digital Dissertation. (AAT 3255301)

McGinnis, V. L. C. (2001). *Examining the effects of tutoring sixth-grade math students at a distance using videoconferencing.* Retrieved from ProQuest Digital Dissertation. (AAT 3038257)

McNeil, K. A., Newman, I., & Kelly, F. J. (1996). *Testing research hypotheses with the general linear model*. Carbondale, IL: Southern Illinois University Press.

McNeil, K. A., Newman, I., & Steinhauser, J. (2005). *How to be involved in program evaluation: What every administrator needs to know*. Lanham, MD: ScarecrowEducation.

Mitchell, L. S. (2005). *Learning through laughter: A study on the use of humor in interactive classrooms.* Retrieved from ProQuest Digital Dissertation. (AAT 3171414)

Morrison, J., & Macquart, D. (2006). World's youth connect through Global Nomads Group: An interview with GNG's David Macquart. *Innovate, 2*(4). Retrieved from http://www.innovateonline.info/

Newman, I., & McNeil, K. A. (1998). *Conducting survey research in the social sciences.* Lanham, MD: University Press of America.

Newman, I., Newman, C., Brown, R., & McNeely, S. (2006). *Conceptual statistics for beginners* (3rd ed.). Lanham, MD: University Press of America.

O'Leary, Z. (2005). *Researching real-world problems: A guide to methods of inquiry*. London: SAGE.

Pemberton, J., Cereijo, M., Tyler-Wood, T., & Rademacher, J. (2004). Desktop videoconferencing: Examples of applications to support teacher training in rural areas. *Rural Special Education, 23*(2), 3-9.

Royal, K., Bradley, K., & Lineberry, G. T. (2005). Evaluating interactive television courses: An identification of factors associated with student satisfaction. *Online Journal of Distance Learning Administration, 8*(2). Retrieved from http://www.westga.edu/%7Edistance/ojdla/summer82/royal82.htm

Shaklee, J. M. (1998). *Elementary children's epistemological beliefs and understandings of science in the context of computer-mediated video conferencing with scientists.* Retrieved from ProQuest Digital Dissertation. (AAT 9902429)

Straessle, G. A. (2000). *Teachers' and administrators' perceptions and expectations of the instructional consultation role of the library media specialist.* Retrieved from ProQuest Digital Dissertation. (AAT 1400457)

Sweeney, M. A. (2007). *The use of videoconferencing techniques which support constructivism in K-12 education.* Retrieved from ProQuest Digital Dissertation. (AAT 3257352)

Szente, J. (2003). Teleconferencing across borders: Promoting literacy and more in the elementary grades. *Childhood Education, 79*(5), 299-304.

Thurston, A. (2004). Promoting multicultural education in the primary classroom: broadband videoconferencing facilities and digital video. *Computers and Education, 43*(1-2), 165-177. Retrieved from http://www.sciencedirect.com/

TWICE (2007). *Videoconferencing collaborative projects*. Retrieved January 13, 2008 from http://www.twice.cc/projects.html

Tyler, C. (1999). Beyond the content - videoconferencing. *Speaking English, 32*(2), 15-27.

Wakefield, C. K. (1999). *Site facilitator roles in videoconferencing: Implications for training.* Retrieved from ProQuest Digital Dissertation. (AAT 9960871)

Wegge, J. (2006). Communication via videoconference: Emotional and cognitive consequences of affective personality dispositions, seeing one's own picture, and disturbing events. *Human-Computer Interaction, 21*(3), 273 - 318. doi:10.1207/s15327051hci2103_1

Weiss, T., Whiteley, C., Treviranus, J., & Fels, D. I. (2001). PEBBLES: A personal technology for meeting educational, social and emotional needs of hospitalized children. *Personal and Ubiquitous Computing, 5*(3), 157-168. doi:10.1007/s007790170006

WMHO (2002). Videoconferencing exposes students to new worlds. *T.H.E. (Technological Horizons in Education) Journal, 29*(8), 53-54. Retrieved from http://thejournal.com/

Yost, N. (2001). *Lights, camera, action: Videoconferencing in kindergarten*. Paper presented at the Society for Information Technology and Teacher Education International Conference, Norfolk, VA. (ERIC Document Reproduction Service No. ED457846)

Young, T. L., & Ireson, C. (2003). Effectiveness of school-based telehealth care in urban and rural elementary schools. *Pediatrics, 112*(5), 1088-1094.