

DISTANCE EDUCATION IN GEORGIA'S PUBLIC SCHOOL DISTRICTS:  
BASELINE DATA ON UTILIZATION AND THE PERCEIVED  
BARRIERS TO IMPLEMENTATION AND EXPANSION

by

WILLIAM JOSEPH TANKERSLEY

(Under the Direction of James F. Burnham)

ABSTRACT

Interest in distance education, particularly online education, is increasing in public school districts throughout the United States. Districts are using these courses for a variety of reasons, including, but not limited to the following: offering courses not available at school, increasing the availability of Advanced Placement (AP) and college level courses, and solving scheduling conflicts for students. Many states have created virtual schools for this purpose. The Georgia Virtual School program was created on May 4, 2005, upon the signing of Senate Bill 33 by Governor Sonny Perdue. In an effort to aid those who are involved in the planning and administration of K-12 distance education programs in Georgia, the researcher sought to gather and report baseline data on the current utilization of distance education courses in Georgia's K-12 public school districts, and to determine the perceived barriers to the implementation and expansion of distance education programs. The researcher developed an online survey instrument, which was sent to 175 of the 180 Georgia public school district superintendents. Descriptive statistics common to quantitative research were calculated, including frequencies, means, and standard deviations. Pearson's Chi-Square test was used to determine if any statistically significant differences were found among responses to the

questions based on the reported metropolitan status (rural, suburban, and urban) of the respondents. Results of the study confirmed that distance education enrollments in Georgia have increased over the past five school years, and asynchronous Internet-based courses are the primary course delivery model that exists. Costs and/or funding issues were the most frequently chosen barriers to the implementation and expansion of distance education courses. The researcher recommends that alternate sources of funding be explored to assist those school districts who want to participate, but cannot, due to current funding limitations.

**INDEX WORDS:** Georgia, Distance Learning, Distance Education, Online Education, Virtual School, Dissertation.

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## DEDICATION

In recognition of her love, unwavering support, patience, and encouragement throughout this process, I hereby dedicate this dissertation to my wife and best friend, Dr. Janet Bush Tankersley.

In recognition of their love, support, encouragement, and inspiration throughout all my endeavors, and for emphasizing the importance of education, I also dedicate this dissertation to my parents, Joseph and Sharon Tankersley.

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## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS .....	7
LIST OF TABLES .....	12
CHAPTER	
I INTRODUCTION .....	14
Distance Education .....	16
Distance Education in Public Elementary and Secondary Schools .....	19
Distance Education in Georgia’s Public Schools .....	23
Statement of the Problem .....	28
Research Questions .....	30
The Significance of the Study .....	31
Procedures .....	33
Limitations .....	36
Definitions .....	36
Summary .....	38
II REVIEW OF RESEARCH AND RELATED LITERATURE .....	40
Introduction .....	40
Student Learning in Distance Education .....	42
Characteristics of Online Learners .....	44
Student Satisfaction with Distance Education .....	45
Utilization of Distance Education Courses in Public Schools .....	48
Barriers to the Implementation and Expansion of Distance Education .....	64

	10
Summary .....	66
III METHODOLOGY .....	91
Introduction .....	91
Research Questions .....	92
Research Design .....	92
Population.....	93
Instrumentation.....	94
Pilot Study .....	98
Data Collection.....	99
Analysis of the Data .....	100
Summary .....	101
IV REPORT OF DATA AND DATA ANALYSIS .....	103
Introduction .....	103
Research Questions .....	104
Research Design .....	104
Findings .....	105
Summary .....	129
V SUMMARY, CONCLUSIONS, AND IMPLICATIONS .....	136
Summary .....	136
Analysis of Research Findings .....	137
Discussion of Research Findings .....	139
Conclusions .....	144
Implications .....	145

Recommendations .....	147
Dissemination.....	148
Concluding Thoughts .....	148
REFERENCES .....	150
APPENDICES .....	160
A LETTER TO PARTICIPANTS .....	161
B LETTER OF SUPPORT .....	163
C PERMISSION TO USE THE SETZER & LEWIS SURVEY .....	164
D INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL .....	165
E GEORGIA K-12 DISTANCE EDUCATION QUESTIONNAIRE.....	166
F PERCEIVED BARRIERS TO THE EXPANSION OF DISTANCE EDUCATION.....	172

## LIST OF TABLES

	Page
Table 1: Studies Related to Student Learning in Distance Education Environments.....	69
Table 2: Studies Related to the Characteristics of Online Learners .....	74
Table 3: Studies Related to Student Satisfaction With Distance Education.....	78
Table 4: Studies Related to the Utilization of Distance Education in Elementary and Secondary Schools .....	88
Table 5: Studies Related to Barriers to the Implementation and Expansion of Distance Education Programs .....	90
Table 6: Analysis of Questionnaire Items .....	96
Table 7: Poverty Level Measured by Percentage of Students Eligible for Free and Reduced Lunch .....	106
Table 8: Distance Education Enrollments by School Year and Instructional Level .....	108
Table 9: Distance Education Enrollment in AP or College Level Courses .....	109
Table 10: Curriculum Areas in Which Students Have Been Enrolled in Distance Education Courses .....	110
Table 11: Reasons for Offering Distance Education Courses .....	112
Table 12: Entities or Programs Used to Deliver Distance Education Courses .....	113
Table 13: Technologies Used as Primary Modes of Delivery for Distance Education Courses .....	116
Table 14: Technology Used for the Greatest Number of Distance Education Courses ..	117
Table 15: Location Where Students are Accessing Distance Education Courses .....	118
Table 16: District Funding for Student Home Access of Distance Education Courses ..	119

Table 17: Need for Each District’s Distance Education Program to Expand .....121

Table 18: Perceived Barriers to the Expansion of Distance Education Programs .....123

Table 19: Reasons Why Districts Do Not Have Students Enrolled in Distance Education  
Courses .....126

## CHAPTER I

### INTRODUCTION

In recent years, the use of distance education courses in public school districts has become more prevalent, and the Internet is the primary technology by which these courses are now being developed and delivered. Virtual schools have been created in many states and individual school districts. In the state of Georgia, the Georgia Virtual School (<http://www.gavirtualschool.org>) was established on May 4, 2005, upon the signing of Senate Bill 33 by Governor Sonny Perdue. The main purpose of the Georgia Virtual School is to offer courses to high school students that are not normally available in their regular schools. These courses include Advanced Placement (AP), upper level college preparatory, and an SAT preparatory course. Below is an excerpt from Senate Bill 33, now known as the Georgia Virtual School law.

The State Board of Education is authorized to establish the Georgia Virtual School whereby students may enroll in state funded courses via the Internet or in any other manner not involving on-site interaction with a teacher. Any Georgia student who is age 21 or younger shall be eligible to enroll in the Georgia Virtual School for a maximum of six courses per school year at no cost to the student, provided that public school students shall be given priority. The State Board of Education is authorized to promulgate rules and regulations pertaining to the Georgia Virtual School (Georgia General Assembly, 2005).

The recent creation of the Georgia Virtual School has brought about much discussion on the topic of online distance education courses for Georgia's public school students. While some school districts in Georgia are debating whether online distance

education courses are as valuable as regular courses, others have asked how they can begin participating in the Georgia Virtual School program immediately. Since the main purpose of the Georgia Virtual School is to serve high school students who do not normally have the opportunity to take AP and upper level college preparatory courses at their regular schools, the targeted populations are school districts that are smaller in size or economically disadvantaged (K. Clements, personal communication, June 2, 2005).

Many districts in Georgia had been participating in distance education programs prior to the creation of the Georgia Virtual School, via either two-way interactive video or via the Internet. Through their participation in these programs, the districts have gained much experience and knowledge regarding the various facets of distance education courses. Districts that have not participated in such programs in the past, but are currently expressing interest in participating, may have valid concerns about distance education programs that need to be addressed in order to facilitate their participation (K. Clements, personal communication, June 2, 2005).

Although distance education courses have been available to high school students in Georgia for several years, the researcher ascertained that there was very little statewide baseline data on the current utilization of distance education courses. In addition, there was no statewide information regarding the perceived barriers to implementation and expansion of distance education programs in Georgia's K-12 public school districts. The researcher believed that all stakeholders involved with the Georgia Virtual School program would benefit from knowing how distance education courses are currently being utilized in Georgia's K-12 public school districts, and the barriers that exist to the implementation and expansion of distance education programs.

For the purposes of this study, the researcher sought to gather baseline data on the current utilization of distance education courses and to determine the perceived barriers to implementation and expansion of distance education programs in Georgia's public school districts. The researcher believed that the study would aid the Georgia Department of Education in the administration and future planning of the Georgia Virtual School program, so that the online distance education needs of Georgia's public school students could be met in the most expeditious manner. The researcher also believed this study would assist the individual school districts in their justification for expansion of their own distance education programs, for those who wished to do so. In addition, the researcher believed the study would aid institutions of higher education, particularly teacher preparation and educational administration programs.

#### Distance Education

In the past, distance education was defined as education taking place when the teacher and student are not in the same location. Distance education began with correspondence study and has existed for at least 160 years. One of the earliest known examples occurred in 1840 and involved the delivery of shorthand instruction to students by Sir Issac Pittman, the English inventor of shorthand. Pittman delivered instruction for use in mail-based correspondence courses (Matthews, 1999). Since that time, the technology used in distance education continued to reflect the technological advancements of society. Beginning in the 1930's, various forms of electronic media have been used to deliver distance education courses to public school students. Examples include radio, television, satellite, video conferencing, facsimile, the Internet, and e-mail.

### *The Current Evolution of Distance Education*

The most recent phase of technological enhancements to distance education began in 1969 with the establishment of England's Open University (Matthews, 1999).

The Open University was recognized as the first postsecondary institution to incorporate modern technology, particularly multimedia, into distance education courses. Rumble (2001) stated that along with traditional printed materials, the Open University incorporated video and audio media into distance education courses, including radio and television broadcasts. Matthews reported that The Open University served approximately 200,000 students in 1994.

By the 1990's, two technological developments with the potential to revolutionize distance education arose: affordable computer technology and the Internet. Kinnaman (1999) stated that the development of the Internet has created a wide variety of opportunities to develop new distance education models, which were previously impossible due to technological limitations. Access to the Internet in homes and schools is on the rise. As of 2002, over 50% of Americans (143 million) had Internet access, and 75% of children who were between 14 and 17 years old reported using the Internet (U.S. Department of Commerce, 2002). Internet access in public school classrooms has grown from 3% in 1994 to 93% in 2003 (Parsad & Jones, 2005). Roblyer (1999) stated that the expansion and popularity of the Internet has caused an increased interest in distance education. As a result, the definition of distance education now includes electronic two-way communication between the instructor and students that incorporates the use of the Internet and e-mail.

### *Advantages of Distance Education*

Matthews (1999) listed several advantages to distance education in higher education. However, some advantages listed may also apply to public school students. For students whose geographical location prevents them from participating in face-to-face courses, distance education increases access to these courses. Distance education also affords students the opportunity for more freedom in the use of their time. Other advantages of distance education listed by Matthews include an increase in the individual attention given to the student by the instructor, less time spent on traveling to class, and an increase in the amount of time that students have in order to consider and respond to questions (via message board or e-mail) which were posed by the instructor.

Schrum (2002) stated that “distance education has increased the amount and level of course interactivity and collaboration that are possible” (p. 7). This includes student-to-student interactivity and collaboration as well as that between student and teacher.

### *Disadvantages of Distance Education*

Matthews (1999) also listed several disadvantages to distance education. Many institutions lack the necessary technical equipment, personnel, and course content needed to deliver distance education courses. Instructors often need additional training in technology and distance education pedagogy in order to teach courses in a distance education format. Schrum (2002) stated that many distance education courses have been lacking in interactivity and feedback. Finally, Matthews stated that students may feel isolated in distance education courses if adequate contact is not maintained between the instructor and student.

## Distance Education in Public Elementary and Secondary Schools

Electronic distance education systems have been utilized in public elementary and secondary schools since the 1930's (Bianchi, 2002; Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004). Beginning in 1930, radio was used successfully in the Wisconsin School Of The Air program to deliver courses to students (Bianchi, 2002). Cavanaugh et al. found that other electronic distance education systems that have been used in public elementary and secondary schools include broadcast and cable television, live or taped audio and video conferences with one-way video and two-way audio, and the Internet. Clark (2000) stated that telecourses are frequently utilized by high school students to earn early college credit or to participate in dual enrollment in high schools and colleges.

According to the first descriptive study on distance education courses for U.S. public elementary and secondary school students, which is also the seminal work on this topic as of today, about one-third of public school districts in the United States had students enrolled in distance education courses during the 2002-2003 12-month school year (Setzer & Lewis, 2005). This accounts for some 328,000 enrollments in distance education courses among public elementary and secondary school students. Among these enrollments, approximately 68% were high school students, 29% were students in combined or ungraded schools, 2% were in middle or junior high schools, and 1% were students in elementary schools.

### *The Evolution of Online Education*

In recent years, online distance education programs for elementary and secondary school students have steadily increased in number due to affordable computer technology and increased access to the Internet. According to Parsad and Jones (2005), nearly 100%

of public schools had access to the Internet in the fall of 2003. In those schools, 93% of all public school classrooms in the United States were connected to the Internet. Forty-eight percent of schools with Internet connections reported that their students have access to the Internet before and after school.

Online education has been growing in postsecondary institutions for several years, and the numbers of high school students who have taken online courses have also increased. U.S. Department of Education (2005) statistics show that 40,000-50,000 students in grades K-12 had enrolled in online courses by the end of 2002. According to the National Association of State Boards of Education (2001), “e-Learning will improve American education in valuable ways and should be universally implemented as soon as possible” (p. 4). These ways include offering courses not available at school, and making Advanced Placement (AP) courses more available.

Mills (2003) stated that in situations where the instructor and students are in different locations, online education has reduced the impact of this separation by providing a means for both parties to stay connected via the Internet and e-mail. A major reason for developing online education programs for public school students often cited in research is the expansion of course offerings for at-risk, home-schooled, rural, and disabled students.

Mills (2003) maintained that students who attend rural and/or small high schools are well-served by online education programs. Although Mills stated that the research and theory involving K-12 online education is in the early stages of development, studies regarding online education in public school districts have been conducted. In a meta-analysis of 14 online education programs in K-12 public school districts conducted

between 1999 and 2004, Cavanaugh et al. (2004) found no significant difference in academic performance among students who participated in online education courses and those who participated in regular instruction. On a statewide level, students who have taken online courses in Georgia have performed about the same in online courses that they do in face-to-face courses (K. Clements, personal communication, June 2, 2005).

#### *Advantages of Online Education*

Advantages of online education exist for students, teachers, and school districts. Cavanaugh et al. (2004) stated that online education programs provide students with access to resources that are not available otherwise. Students who attend small or rural schools were able to take courses which were not offered in their regular schools. Hassel and Terrell (2004) not only maintained that teachers in online education programs are better equipped to accommodate various learning styles and provide frequent assessment of student knowledge, but also that online courses provide for greater communication between students, and between students and teachers. According to Watson, Winograd, and Kalmon (2004), online courses have the potential to provide a new array of opportunities to students and teachers throughout the country. In a study regarding the use of online courses in a rural high school, Chaney (2001) found that for students who are self-motivated, above-average, and responsible, success in online courses is highly likely.

#### *Disadvantages of Online Education*

There are disadvantages to online education. Chaney (2001) found that students who are lacking in self-motivation can quickly become lost in an online course. She also found that if students are not technology-savvy and do not have robust access, they will

have a difficult time succeeding. Cavanaugh et. al (2004) found that students with language barriers may find that a text-heavy online course is too difficult. In addition, they found that mathematics and science courses are difficult to teach online, and that courses which involve the live demonstration of a skill are not realistic in an online environment. Barker and Wendel (2001) found that listening and speaking development skills may be more difficult to acquire in online courses than in traditional courses. Finally, online courses did not work well under circumstances where technical support was not readily available to teachers and students (Donlevy, 2003; Mills, 2003).

### *The Virtual School Movement*

Online courses for high school students are available through proprietary entities as well as online learning programs operated by states and individual school districts. Watson et al. (2004) stated that there are several types of online learning programs that vary in complexity. The two main types of programs are virtual schools and supplemental online programs. Some virtual schools only serve high school students, hence the name virtual high school. Other virtual schools serve students in the high schools as well as lower grades. Within these two types are statewide and single-district programs. Clark (2000) defined the term virtual school as a “state approved and/or regionally accredited school that offers secondary credit courses through distance learning methods that include Internet-based delivery” (p. i).

Additional statistics provided by the U.S. Department of Education (2005) show that twelve states have created statewide virtual schools, while five more states are in the process of doing the same. The research has also shown that virtual charter schools are being operated in the United States (Thomas, 2002). Hassel and Terrell (2004) stated that

57 virtual charter schools were in operation during the 2002-2003 school year. Although not considered full-fledged statewide virtual schools, 32 states have started online learning programs, and 25 states have permitted the establishment of virtual charter schools (U.S. Department of Education, 2005). Trotter (2002) stated that the Massachusetts-based Virtual High School, founded in 1995 as a joint operation between the Hudson, Massachusetts school district and the Concord Consortium, was America's first virtual high school. Florida was the first state to directly fund a statewide virtual high school, which began operation in the 1997-1998 school year (Clark, 2000).

#### Distance Education in Georgia's Public Schools

Technology currently used to deliver distance education courses in Georgia's school districts includes two-way interactive video, otherwise known as video conferencing, and the Internet. Video conferencing provides for synchronous instruction, while the Internet provides for online learning which can be both synchronous and asynchronous. Although the state of Georgia's K-12 public school districts are now relying less on video conferencing and more on the Internet for the delivery of distance education courses, there are still some school districts in Georgia making use of video conferencing.

In 1992, the Georgia General Assembly voted to approve Senate Bill 144, otherwise known as the Distance Learning and Telemedicine Act. The Act was funded by a fifty-five million dollar grant from the BellSouth Corporation, and was the result of forfeiture from BellSouth in order to repay the overcharging of customers in Georgia. The result of the forfeiture was a network known as the Georgia Statewide Academic and Medical System (GSAMS). GSAMS is a real-time, two-way interactive video network

available for use at Georgia's public elementary and secondary schools, colleges, universities, and healthcare institutions (<http://gsams.gagta.com/v3/master.html>).

The GSAMS network allows individuals in different locations to interact with each other in real time via television monitors, microphones, and speakers. In order to ensure that the network would have a chance of success, the University System of Georgia created an Academic Programming Office, based at the University of Georgia in Athens, whose purpose was to provide coordination and training in the use of the GSAMS equipment (J. Brown, personal communication, June 16, 2005).

Since 1993, students and teachers in Georgia's K-12 public school districts have used the GSAMS network primarily for video conferencing in high school distance education courses. Courses that are not ordinarily available to the students at their regular school have been taught via the GSAMS network. These courses include those that have been taught by teachers in one district to students in other districts, as well as courses that have been taught within one district. The greatest number of GSAMS sites being used in Georgia's K-12 public school districts was 144, during the 1996-1997 school year (J. Brown, personal communication, June 16, 2005).

Officials with The University System of Georgia made the decision to discontinue funding for the Academic Programming Office. This resulted in a lack of global oversight of the GSAMS network. Funding for new installation of equipment or upgrades that were required for districts to continue participating was no longer available after 1999. In most of the school districts throughout Georgia where the GSAMS equipment was not being used, the decision was made not to make the upgrades since the cost far outweighed the benefits. Instead, the equipment was surplus by these districts.

Currently, there are only 29 GSAMS sites being used in Georgia's 180 K-12 public school districts (J. Brown, personal communication, June 16, 2005).

### *Online Education*

Although plans for a statewide virtual school in Georgia were put on hold in the fall of 2001 due to a slow-moving economy, the Georgia State Department of Education implemented the Georgia eLearning (online learning) program in 2002 (Jacobson, 2002). The Georgia eLearning program was state-funded and provided schools with a maximum of 10 enrollments per semester whereby students were allowed to enroll in core academic and Advanced Placement courses free of charge. In addition, individual school districts in Georgia have developed their own virtual schools. The Cobb County School System eHigh School program (<http://www.cobbk12.org/eHigh/eHighSchool/ehighclass.htm>) and the Gwinnett County School System Online Campus were created at about the same time as the Georgia eLearning program (Jacobson, 2002).

The Georgia K-12 eLearning Consortium was formed in 2004 (<http://www.forsyth.k12.ga.us/instruct/curriculum/sites/gaelearning>). The Consortium was created for the purposes of promoting online learning in Georgia's K-12 public school districts and sharing resources such as courses and knowledge regarding best practices in online education. School districts who were already offering online courses, or those who were interested, came together to form the Consortium. Members included the Georgia State Department of Education along with the Cobb, Columbia, DeKalb, Forsyth, Fulton, Gwinnett, and Henry county school districts. Membership in the Consortium was attained through a \$50,000 fee, which could be paid in several ways:

money, online courses, or the labor required to develop and revise online courses. As of May 2007, the Consortium will exist strictly as a professional organization.

Most of the current Consortium members are school districts in the metropolitan Atlanta or Augusta areas, which have a relatively high socio-economic status and are considered progressive. However, membership in the Consortium is open to any school system in the state that is interested in offering online learning opportunities to their students and expanding the development and availability of online courses to all students in Georgia. During the first year of the Consortium's existence, it was learned that one of Georgia Governor Sonny Perdue's education initiatives would be to create a statewide virtual school, which would make Advanced Placement (AP) courses and a SAT preparatory course available to all Georgia students via the Internet.

*Georgia State Senate Bill 33- The Georgia Virtual School*

At the other end of the K-12 system is a proposal I'm (Governor Perdue) very excited about – the Georgia Virtual High School. Let me tell you how this idea came about. At one of a series of education listening sessions I held, I met a high school student from Clinch County named Cliff Tippens. He said he was a good student and he wanted to take the most challenging classes to prepare for college. But because of where he lived, he did not have access to many AP or advanced math or science courses. And he was not the only one in that situation. Now this just didn't make sense to me. In the 21st Century, mere geography shouldn't prevent our brightest students from doing their very best work. Well, we're going to fix that. The Georgia Virtual High School will give students everywhere in Georgia access to over 60 online courses that will be ready to go

by this summer, including over 15 AP courses and SAT prep. (State of Georgia, 2005).

One of the first pieces of legislation to be introduced during the 2005 session of the Georgia General Assembly was Senate Bill 33, otherwise known as the Georgia Virtual School Bill (Georgia General Assembly, 2005). The legislation was an initiative of Governor Sonny Perdue in an effort to make AP and other high school college prep courses more accessible to students in Georgia's public school districts. Like many other states, because of small student populations, lack of teacher training, and the lack of available funding, many school districts in Georgia are unable to offer AP courses. Senate Bill 33 was signed by Governor Perdue on May 4, 2005, from Winder-Barrow High School located in Winder, Georgia. The signing of the bill was broadcasted via the Internet by Georgia Public Broadcasting. Immediately before the signing of the bill, Governor Perdue and State Superintendent of Education Kathy Cox co-taught an AP Government lesson and allowed students to ask questions regarding the lesson and the Georgia Virtual School (<http://www.gavirtualschool.org>).

The Georgia Virtual School began operation during the summer of 2005 on a tuition basis only. Courses cost 300 dollars per half-credit. In the fall of 2005, a limited number of Georgia high school students were allowed to take courses as part of their regular schedule. Funding for these seats was taken from that portion of each student's full-time equivalent funding, which would normally have been sent to the school system. An unlimited number of seats were available for students taking courses in addition to their regular schedule, and were funded by student tuition. Although the courses are currently available to high school students only, plans are in place to offer online courses

at the middle school level by 2007. The Georgia Virtual School also serves private and home-schooled students.

### *Barriers to the Implementation and Expansion of Distance Education Programs*

Researchers have indicated that barriers exist to the implementation and expansion of distance education programs in public schools (Berge & Muilenberg, 2003; Clark, 2001; Setzer & Lewis, 2005). These barriers include, but are not limited to, a lack of technical infrastructure to support distance education programs, a lack of technical support, and a lack of funding. At this time, it was known that some school districts in Georgia had students enrolled in distance education courses, while others did not. For the districts without any students enrolled in these courses, the perceived barriers to implementation of distance education were unknown. It was also known that some school districts in Georgia desired to expand their distance education programs, but there may have been barriers preventing these districts from doing so. These barriers were also unknown.

### Statement of the Problem

Distance education has been defined as education that occurs when the instructor and learner are separated by geography and/or time. Although distance education programs have utilized various methods and technologies such as printed materials, radio, broadcast television, videotapes, two-way interactive video, the most recent technology used in distance education is electronic two-way communication via the Internet and e-mail. Online learning, sometimes referred to as “eLearning,” is a specific type of distance learning in which all the interaction between instructors and students takes place via the Internet and e-mail, typically within a third party course management system such

as Blackboard/WebCT, eCollege, or Desire2Learn. While distance learning has been employed for decades at postsecondary institutions, the concept is still in its infancy in K-12 public school districts.

During the past ten years, the numbers of elementary and secondary school students who have taken courses via distance education, particularly online education, have increased. In addition, the numbers of online learning programs have risen. These programs and courses exist for several purposes: to offer students the opportunity to make up credits from courses previously failed, to increase the availability of Advanced Placement (AP) courses, to serve as a solution when scheduling conflicts occur, to offer courses that are not available at the student's regular school, to offer courses to students who are a few credits away from graduation but do not necessarily need to be in attendance at a regular school, and to offer courses to students who are homebound due to extended illnesses.

Because distance education, particularly online education, in public school districts is a relatively new concept, the researcher found less research and data on the topic as compared to higher education. Specifically, on a statewide level, the researcher determined that there was very little baseline data regarding the current utilization of distance education courses in Georgia's K-12 public school districts. This lack of baseline data included, but was not limited to, the following: the level of schools in which distance education courses were available (elementary, middle, high), the types of technology used to deliver distance education courses, the availability of AP courses in a distance education format, reasons that school districts offered distance education courses, the entity(ies) through which distance education courses were offered, and

demographic differences that may have existed among school districts that offered distance education courses. The researcher also determined that there was a lack of data regarding the perceived barriers to implementation or expansion of distance education programs in Georgia's K-12 public school districts. The researcher's purpose was to gather and report this data so that all the stakeholders involved in the distance education of Georgia's public school students would have vital information necessary for the planning of distance education programs across the state, while identifying the perceived barriers to the same planning and implementation processes.

### Research Questions

The researcher, through this study, sought to answer the following overarching research questions: How are distance education courses being utilized in Georgia's K-12 public school districts? What are the perceived barriers to the implementation and expansion of distance education programs in Georgia's K-12 public school districts? The following sub-questions were also considered:

1. What is the trend of distance education utilization in the State of Georgia over the last five years?
2. To what extent does utilization of distance education differ by the districts' metropolitan status (urban, suburban, rural)?
3. For what reasons do Georgia's K-12 public school districts offer distance education courses?
4. Through what entity(ies) or programs are distance education courses available? (e.g., statewide virtual school, virtual school operated by a single district, vendor, etc.)

5. What is the extent of appropriate technology use for distance education in Georgia's K-12 public school districts? (Internet, two-way interactive video, etc.)
6. What are major implementation problems that may be hindering the expansion of distance education in Georgia's K-12 public school districts?

### The Significance of the Study

Georgia State Senate Bill 33, The Georgia Virtual School Bill, was signed into law by Governor Perdue on May 4, 2005. Dr. Michael Hall, the Georgia Deputy State Superintendent for Information Technology, was charged by Governor Perdue to lead in the development and oversight of the Georgia Virtual School. Dr. Kristie Clements was appointed as the Principal and program director. Through conversations with Dr. Hall and Dr. Clements, it became apparent that there was very little statewide baseline data regarding the utilization of distance education in Georgia's K-12 public school districts, nor was there any significant data on the districts' perceived barriers to implementation and expansion of distance education programs (M. Hall & K. Clements, personal communication, April 8, 2005). Dr. Hall and Dr. Clements stated that this information was vital to the development, administration, and success of the Georgia Virtual School. The data was also important to the districts because it could be used to help justify the expansion of distance education programs (C. Carey, personal communication, November 5, 2005).

The researcher was vitally interested in this topic because a portion of his job involved the administration of an online learning program for high school students in his system. In addition, the researcher was the Treasurer of the Georgia K-12 eLearning Consortium, consisting of the Georgia State Department of Education and school districts

in the state that were interested in offering online learning opportunities to their students. The researcher was invited to join the Georgia Virtual School Task force, which recommended the rules and procedures by which the Georgia Virtual School would operate. The researcher wanted to pursue this study so that those who were involved in the creation and administration of the Georgia Virtual School would have crucial baseline data regarding current utilization of distance education courses in Georgia's public school districts. In addition, the researcher wanted to pursue this study so that all distance education stakeholders in Georgia would have data on the perceived barriers to the implementation and expansion of distance education programs available to them as they made decisions that affected Georgia's public school students.

These individuals included Dr. Michael Hall, the Georgia State Department of Education Deputy Superintendent for Information Technology, as well as Dr. Kristie Clements, the program director of the Georgia Virtual School, and their respective staffs. In addition, the researcher wanted to provide this data in an effort to assist the Georgia legislature, undergraduate and graduate programs in education at colleges and universities, local and state boards of education, curriculum experts, and technology coordinators in their efforts to work with distance education, particularly online education, in public school districts. The researcher determined that both the baseline data regarding the current utilization of distance education courses and the data on perceived barriers to the implementation and expansion of distance education programs would be helpful to the Georgia Department of Education, particularly as it pertained to the development and administration of the Georgia Virtual School (M. Hall & K. Clements, personal communication, April 8, 2005). The researcher believed that this

baseline and perceived barrier data would aid all of Georgia's distance education stakeholders in making important decisions that would guide the future of K-12 distance education research, planning, development, and implementation.

## Procedures

### *Research Design*

According to Borg, Gall, and Gall (1993), descriptive research helps describe characteristics of the phenomena being studied. The researcher conducted a descriptive study on the current utilization of distance education courses in Georgia's K-12 public school districts and the perceived barriers to the implementation and expansion of distance education programs. The researcher employed a survey instrument (see Appendix E) in order to collect this information.

### *Population*

The researcher believed that those who were the most familiar with each system's distance education program represented the best population for the study. The population who may have been able to answer the survey questions included the superintendent, assistant superintendent for curriculum and instruction, director of curriculum, technology coordinator, distance education coordinator, or someone else in each school system who was knowledgeable about the system's distance education program. Because there was no way of knowing who was responsible for the distance education program in each system, the researcher sent the survey to the system superintendents and asked them to complete the survey, or to forward the survey to the appropriate individual. The researcher included a question in the demographic section of the survey in an effort to determine the job description of the individual who provided the survey responses.

### *Instrumentation*

Nardi (2003) supported the idea that a survey is useful in this type of research. In the development of the survey, the researcher used some of the items from the survey associated with the Setzer and Lewis (2005) study as well as some self-developed items. The researcher ascertained that the Setzer and Lewis study and associated survey questions were in the public domain and could be used with other populations (see Appendix C) (B. Greene, personal communication, March 10, 2005). In addition to collecting data concerning the current utilization of distance education courses and the districts' perceived barriers to the implementation and expansion of distance education programs, the researcher collected school district demographic data.

The researcher established the validity of the survey instrument by using a panel of three experts who worked in the field of K-12 distance education in Georgia. The experts were asked to view the survey and provide feedback as to the nature of the questions, and whether any questions should be added or deleted. Reliability was established with a pilot study, using five of the 180 Georgia K-12 school system superintendents as the participants. The superintendents used in the pilot study were not asked to participate in the actual study. Based on responses from the individuals involved in the establishment of the validity and reliability, the survey directions and questions were edited.

### *Data Collection*

The researcher received approval to conduct the study from the Institutional Review Board (IRB) at Georgia Southern University (see Appendix D). Questions from a previously administered survey were used, and the researcher developed the remainder

of the questions based on the literature review and the research questions. The researcher used an online survey company, QuestionPro (<http://www.questionpro.com>), to develop the survey, and sent a web address for the survey via e-mail to the participants. A letter of introduction was included in the e-mail (see Appendix A). In addition, the researcher scanned and attached a letter of support from Dr. Kristie Clements, the principal and program director for the Georgia Department of Education's Virtual School program (see Appendix B). After two weeks, a follow-up e-mail was sent to all the participants. The follow-up e-mail served two purposes: to thank those districts who had already participated, and to ask those districts who had not participated to do so. A second follow-up was sent one week later.

The researcher maintained the anonymity of the respondents and their respective school districts in the reporting of data. The researcher offered to send the results of the study to each school system from which a survey was received. In addition, the researcher offered the results of the study to the Georgia Department of Education's Office of Instructional Technology, through which the Georgia Virtual School is operated, and to each member of the Georgia eLearning Consortium.

#### *Data Analysis*

Upon receipt of the completed surveys, the researcher used the QuestionPro (<http://www.questionpro.com>) survey tools to analyze the data. When appropriate, some of the data were also coded and entered into the Statistical Package for the Social Sciences (SPSS) software, Advanced Model 12.0 for Windows, to determine if statistically significant differences existed in responses based up on the metropolitan status (urban, suburban, and rural) of the district. This analysis was conducted through

the use of the Pearson's Chi-Square test. All of the research questions were answered with descriptive statistics common to survey research (frequencies, percentages, means, and standard deviations). The data were displayed in tables. The researcher confirmed that each of the data analysis techniques presented above are common to this type of research (Borg et al., 1993).

#### Limitations

1. Although the numbers of enrollments in distance education courses during past years would have provided valuable information for the study, the pilot study participants all reported that this data would be extremely difficult to collect and would most likely cause an extremely low survey return rate.
2. Because the survey questions were related to distance education programs, participants in school districts without any students enrolled in distance education courses may have had the perception that the survey did not apply to them.

#### Definitions

1. AP courses – Advanced Placement courses taken in high school (usually in the core content areas) that may also lead to the earning of college credit if the participant earns a certain score on the Advanced Placement course exam.
2. Asynchronous instruction – instruction happening at different times, i.e., students and teachers may interact with each other online via e-mail and a course management system, but not necessarily at the same time.
3. Consortium - a group of organizations (or school districts) that participate in a joint venture.

4. Correspondence Course – traditionally, a course in which students and the instructor interact through writing via U.S. mail. Some courses now involve interaction via the Internet and e-mail.
5. Distance education – education that occurs when the instructor and learner are separated by geography and/or time, and often supported by U.S. mail, television, videotapes, and computer technology. The most recent technology used in distance education is electronic two-way communication via the Internet and e-mail.
6. Distance learning – the act of participating in educational activities designed to instruct students, normally conducted when the student and teacher are separated by geography and/or time.
7. eLearning – any type of electronic distance learning, e.g., online learning, two-way interactive video, etc.
8. Electronic two-way communication – communication carried out in a fashion that allows each party to receive information and respond, e.g., e-mail.
9. Message board – a web page that allows users to enter text about various topics so that other users may view and respond.
10. One-way video – a distance education format in which the persons receiving instruction through video cannot respond, e.g., a videotape.
11. Online education – distance education that relies on the Internet and e-mail for communication and the delivery of course content.
12. Online learning – educational activities taking place via the Internet.

13. Online learning program – a program that exists for the purposes of offering online courses to students for credit recovery or enrichment.
14. Synchronous instruction – instruction happening at the same time, i.e. students and teachers can communicate with each other simultaneously even though they are separated by geography.
15. Telecourse – a distance education course in which the instruction is delivered via televised lectures.
16. Two-way audio – a distance education format that allows users in different locations to hear each other.
17. Two-way interactive video – a distance education format that allows users in different locations to see and hear each other.
18. Video conferencing – a method by which two or more groups of people in different locations can communicate through two-way video and audio.
19. Virtual charter school – a charter school which relies on the Internet and e-mail for communication and the delivery of course content to students.
20. Virtual school – a state approved and/or regionally accredited school offering secondary credit courses through distance education methods that rely primarily on the Internet for course delivery (Clark, 2000).

### Summary

Distance education courses have been utilized in colleges and universities for decades. However, the concept is much newer in public school districts. There are many advantages and disadvantages to distance education courses. The most recent form of technology used in distance education is the Internet, which has created a plethora of new

opportunities for student learning. Many states have created online learning programs or virtual schools. The Georgia Virtual School Bill was signed into law on May 4, 2005.

Although distance education courses have been available to students in Georgia's K-12 public school districts for at least thirteen years, the researcher determined that there was very little statewide baseline data regarding the current utilization of distance education courses and the perceived barriers to the implementation and expansion of distance education programs in Georgia's public school districts. The researcher gathered these data using questions from a previously administered survey along with researcher self-developed questions. The researcher conducted a descriptive study that included 175 of the 180 public school districts in Georgia. The researcher believed that this information would provide valuable insight for the stakeholders involved in distance education of Georgia's public school students.

## CHAPTER II

### REVIEW OF RESEARCH AND RELATED LITERATURE

#### Introduction

Distance education has its roots in correspondence study, dating back to the 19<sup>th</sup> century. Since that time, distance education courses have been made available through various technologies such as radio and TV broadcasts, two-way interactive video, and the Internet. Although distance education has been employed more frequently in higher education, opportunities for younger students to participate are increasing.

Across the nation, distance education courses have become more prevalent in K-12 public school districts during the past ten years. Moreover, in the last five years, the availability of online distance education courses has significantly increased. The numbers of online learning programs and virtual schools are on the rise. In Georgia, public high school students have been afforded the opportunity to take courses via distance education through the GSAMS two-way interactive video network since 1993. In 2000, school districts in Georgia began to offer online distance education courses to high school students.

On May 4, 2005, Georgia Governor Sonny Perdue signed Senate Bill 33, otherwise known as the Georgia Virtual School bill. The school is operated by the Georgia State Department of Education and currently serves high school students in all of Georgia's public school districts. The Georgia Virtual School is also serving private and home-schooled students. A recent study released by the National Center for Education Statistics revealed that students in middle and elementary grades have participated in distance education courses. Although the Georgia Virtual School currently serves

students in grades 9-12, plans are in place to expand these courses into the middle grades by 2007 (K. Clements, personal communication, August 15, 2005).

Although students in Georgia's public high schools have been afforded the opportunity to enroll in distance education courses for at least 10 years, the researcher ascertained that there was very little statewide baseline data regarding the current utilization of distance education courses in Georgia's K-12 public school districts. In addition, there was very little statewide data regarding the perceived barriers to the implementation and expansion of distance education programs in the public school districts. The researcher believed that this information was vital to future planning of the Georgia Virtual School and the school districts in order to meet the online distance education needs of Georgia's K-12 public school students. The researcher hoped to fill this void in the research literature as a result of the study.

In order to conduct a broad and deep literature review, the researcher examined a wide variety of research journal articles, books, publications, websites, dissertations, etc. related to the use of distance education courses in postsecondary institutions as well as secondary and elementary schools. Based on the available literature, the following sections were included in the review of related literature: (a) student learning in distance education environments, (b) characteristics of online learners, (c) student satisfaction with distance education, (d) the current utilization of distance education courses in public elementary and secondary schools, and (e) the barriers to implementation and expansion of distance education programs in public schools. Many of the available studies on distance education involve its use at the postsecondary level. However, the research base

that focuses on the current utilization of distance education at the elementary and secondary levels is growing (Clark, 2001; Kellogg & Politoski, 2002).

### Student Learning in Distance Education

Student learning represents a major area in which distance education research has been conducted. Most of the primary research in this area is based on distance education courses taught in post-secondary institutions and involves comparisons of student performance in various distance education delivery models with formats found in traditional face-to-face instruction.

#### *Traditional Distance Education*

Several researchers have conducted studies in which the student learning outcomes of various traditional distance education formats (e.g. audio recordings, video recordings, two-way interactive television, computer instruction) were compared to student outcomes of traditional education (e.g. lecture). Students enrolled in the same course were assigned to groups that received instruction in various distance or traditional education formats.

Most researchers in this area have found no statistically significant difference in student performance when comparing traditional education to distance education at the post-secondary level (Beare, 1989; McCleary and Egan, 1989; Ritchie and Newby, 1989). Moshinskie (1995) found the same result when comparing achievement among three groups of emergency medical trainees, two of which received instruction via distance education. In contrast, Martin and Rainey (1993) found a statistically significant difference in student achievement when comparing students in a traditional classroom and students in a satellite-delivered, two-way interactive television science course.

The group taking the course via interactive television had a significantly higher mean exam scores than the group in the traditional setting.

### *Online Education*

If online education is to expand and attain recognition as a viable educational alternative, further research must be conducted regarding the impact of the online educational environment on student learning and achievement (Navarro & Shoemaker, 2000; Neuhauser, 2002; Wegner, Holloway, & Garton, 1999). As with traditional forms of distance education, researchers have conducted studies designed to determine if a statistically significant difference exists between student achievement in traditional and online sections of the same course. Populations for these studies include students in post-secondary institutions, high school, and middle school.

Much of this research has shown that there is no statistically significant difference in student achievement based on the method of instruction (Carey, 2001; Cheng, Lehman, & Armstrong, 1991; Dellana, Collins, & West, 2000; Wegner et al., 1999). However, researchers who conducted two separate studies with similar designs have shown that post-secondary student achievement was higher in online sections than in traditional sections of the same course (Navarro & Shoemaker, 2000; Tucker, 2001). In a study conducted by Ridley and Husband (1998), final grades of post-secondary students in online courses were lower than those of students in traditional courses.

Studies regarding student learning in secondary and elementary online distance education courses have also been conducted. Researchers conducting these studies have found that in most cases, there is no statistically significant difference found in student achievement when comparing online courses to traditional courses (Cavanaugh, 2001;

Cavanaugh et al., 2004; Kozma, 2000). The consensus of these researchers was that secondary and elementary students can receive a comparable education through online courses compared to traditional courses.

### Characteristics of Online Learners

The learner characteristics of post-secondary and secondary online students is another area that has received recent attention from researchers. The studies reviewed in this area involve comparisons of student motivation for taking courses in traditional and online formats, comparisons of learning characteristics of students enrolled in online courses to those of students in traditional course, the influence of learning styles on performance in online courses, and the prediction of student success in online courses based on various learner characteristics.

Three researchers conducted a study involving 196 university students divided into two groups, online and traditional, in which the student were asked to complete a survey in order to rate the importance of 11 course-related factors related to student motivation for choosing an online or traditional format (Dutton, Dutton, & Perry, 2002). The researchers found that students in the traditional class chose that format because of the face-to-face interactions with peers and the instructor. The online students chose their format because of convenience-related factors such as less travel.

Other researchers have studied the influence of student learning style preferences on student performance in online and face-to-face courses at the post-secondary and secondary levels (Aragon, Johnson, and Shaik, 2002; Neuhauser, 2002). Based on data gathered from learning style instruments, the researchers found that in most areas, no

significant differences existed between the online and traditional groups regarding student learning preferences or exam scores between the two groups.

The prediction of student success in secondary online education was the subject of studies conducted by Roblyer and Marshall (2003) and Weiner (2003). Roblyer and Marshall reported that a statistically significant correlation, one that was strongly positive, existed between student confidence in their academic ability and achievement in the online courses. Weiner reported that student motivation was the most frequently cited indicator of student learning in the online environment. The researcher concluded that secondary students would be successful in online courses if they believed they were receiving support from instructors and peers and have a strong motivation to learn.

#### Student Satisfaction with Distance Education

The research on student satisfaction with distance education is mostly quantitative in nature and is survey-based (Biner, Dean, & Mellinger, 1994; Egan, Welch, Page, & Sebastian, 1992; Fulford & Zhang, 1993). Using surveys designed to measure student satisfaction with distance education, researchers have examined student perceptions of the quality of courses, their satisfaction with the instructor, and their satisfaction with the instructional media. Researchers in the field of distance education have also used surveys to examine student willingness to take more courses in a distance education format.

#### *Correspondence Courses*

Using a quantitative research design, St. Pierre and Olsen (1991) analyzed students' perceptions of their instructors and the instructional impact of their courses in terms of student satisfaction with courses taken at the college level via correspondence. Motivation was reported as the most important influence on student satisfaction. In a

related study, Tallman (1992) sought to identify factors that contribute to student satisfaction and persistence in correspondence courses. Students reported that a pre-enrollment orientation session was the most important factor associated with their satisfaction level of the courses.

### *Courses Delivered Through Television*

Egan et al. (1992) designed and conducted a comparison study of traditional face-to-face instruction to two different types of distance education models involving television in a post-secondary institution. The researchers found that students who perceived a high level of student-student and student-teacher interaction were more likely to indicate that they were satisfied with the course. In a similar study, Fulford and Zhang (1993) conducted a study concerning student perceptions of student-to-student and student-to-instructor interaction in an interactive televised distance education course and student satisfaction with the course. The participants in the study were 123 Hawaii public school teachers enrolled in a professional development program. As in the study conducted by Egan et al., the results of the study conducted by Fulford and Zhang showed that both overall interaction and personal interaction were correlated with course satisfaction. Over a two-year period, Biner et al. (1994) conducted two separate investigations to identify the factors leading to student satisfaction with a university level course, which utilized live televised broadcasts. In both studies, the researchers found that the following seven factors accounted for student satisfaction with the televised distance education courses: (a) instructor quality, (b) technology used, (c) course management, (d) on-site personnel, (e) promptness of material delivery, (f) support services, (g) and out-of-class communication with the instructor.

### *Online Education*

Much research has been conducted in order to examine student satisfaction with online education (Butz, 2004; Gabrielle, 1997; Jiang & Ting, 2000; Leonard & Guha, 2001; Mason & Weller, 2000; O'Malley & McCraw, 1999; Picciano, 2002; Shea, Frederickson, & Pickett, 2001; Valenta, Therriault, Dieter, & Mrtek, 2001; Woods, 2002). Although the large majority of this research involves students attending post-secondary institutions, Butz conducted research involving student satisfaction with online courses in elementary and secondary schools.

In order to study student beliefs regarding their satisfaction with online courses as well as the effectiveness of online courses in which they were enrolled, Gabrielle (1997) collected data from 253 students attending eight post-secondary institutions. The researcher concluded that two consistent positive predictors of student perceptions of instructional effectiveness and student satisfaction in online instruction are student-instructor interaction and perceived media quality. Other researchers have found similar results when conducting this type of research (Jiang & Ting, 2000; Picciano, 2002; Shea et al., 2001). O'Malley and McCraw (1999) and Leonard and Guha (2001) found that the students in online courses perceived the level of interaction and overall educational experience to be satisfactory and equivalent to what they had experienced in traditional courses. Woods (2002) found no statistically significant difference among reported satisfaction of students assigned to groups receiving different levels of communication in an online course.

Mason and Weller (2000) found that the following factors had the greatest influence on post-secondary student satisfaction with online learning: (a) the support of

the tutor or instructor, (b) the amount of time, patience, and motivation they had to devote to the course, and (c) the extent to which the course content and presentation matched their expectations for the course. Valenta et al. (2001) surveyed 74 post-secondary students taking an online course for the first time and found the most important positive aspect of online education, according to students, was flexibility in learning, including the ability to work from home.

Butz (2004) sought to examine factors related to student and parent satisfaction with online education at the secondary and elementary levels. The researcher created and administered two satisfaction surveys: one for students and one for parents. Results showed that school-level technology support, school-level instructional support, curriculum programs, and social interactions were all significantly related to overall student satisfaction with online education. In addition, school-level instructional support, curriculum programs, and social interactions were significantly related to overall parent satisfaction. The researcher found that school-level technology support was the only variable not significantly related to parent satisfaction with online education.

#### Utilization of Distance Education Courses in Public Schools

Distance education courses for elementary and secondary students, particularly those taught online, are rapidly increasing in popularity. Evidence exists in the fact that several states, including Florida, Louisiana, Michigan, Kentucky, and Georgia have created virtual schools. Because of this, researchers have suggested that additional studies be conducted on the utilization of distance education courses in elementary and secondary schools (Clark, 2001; Kellogg & Politoski, 2002; Litke, 1998).

Endorsed by the National Center for Education Statistics, Setzer and Lewis (2005) conducted the first national descriptive study on the utilization of distance education courses for public elementary and secondary students. A sample study was conducted based on data from the 2002-2003 12-month school year, which included the summer immediately before or after the regular school year. In the fall of 2003, a survey instrument was mailed to 2,305 districts throughout the United States. The sampling frame included 15,218 public school districts. Setzer and Lewis presented national estimates in the report.

The findings were presented by district characteristics which included district enrollment size (less than 2,500 was small, 2,500 to 9,999 was medium, and 10,000 or more was large), metropolitan status (urban, suburban, rural), and poverty concentration based on the percentage of students receiving free and reduced lunch (less than 10% was low, 10%-19% percent was medium, and 20% or more was high). The researchers noted that the independent variables of district enrollment size and metropolitan status may have been related. For example, large school districts were frequently urban and small school districts were frequently rural.

Although there are additional primary and secondary research studies available regarding the utilization of distance education courses in K-12 public school districts, the Setzer and Lewis (2005) study contains the most complete and recent set of national baseline utilization data. The study is the seminal work on baseline utilization data of distance education courses in public schools in the United States. In this section of the literature review, the results of the Setzer and Lewis study are presented, along with the results of other related studies.

### *Demographics*

In terms of district size, Setzer and Lewis (2005) defined small school districts as having less than 2,500 students enrolled, medium as having between 2,500 and 9,999 students enrolled, and large as having over 10,000 students enrolled. The researchers found that large school districts reported a greater percentage (50%) of students enrolled in distance education courses than did medium (32%) or small (37%) districts during the 2002-2003 12-month school year. However, a larger percentage of schools in small districts (15%) than medium or large (6% for both) districts had students enrolled in distance education courses. The researchers found that a greater percentage of rural districts (46%) than suburban (28%) or urban (23%) districts reported students enrolled in distance education courses. Likewise, a greater percentage of schools located in rural districts (15%) reported students enrolled in distance education courses, compared to suburban (7%) or urban (5%) districts. Finally, a greater percentage of districts with a high and medium poverty concentration (42% for both) than a low poverty concentration (33%) had students enrolled in distance education courses.

Although Setzer and Lewis (2005) found that the greatest percentage of students enrolled in distance education courses are from school districts that are large or rural, further research exists showing that school districts of all sizes (e.g., small, medium, large), metropolitan status designations (e.g., rural, suburban, urban), and poverty concentrations (e.g., low, medium, and high) have had students enrolled in distance education courses (Downs & Moller, 1999; Howley & Harmon, 2000; Mills, 2003). Other evidence of this exists in the fact that state-operated virtual schools are available to

all students in the state, and most states have school districts in various sizes, metropolitan status designations, and poverty levels.

### *K-12 Enrollments in Distance Education Courses*

In a study designed to determine the level of schools offering online distance education courses to elementary and secondary students, Clark (2001) surveyed administrators from 33 elementary and secondary online programs identified in the literature. Clark estimated that by the end of the 2001-2002 school year, 40,000 to 50,000 students had enrolled in distance education courses taught online. All of the schools involved in the study reported serving students in the high school grades, while only 17 schools served middle school students and nine served students in the primary grades. In a similar study, Kellogg and Politoski (2002) conducted a study involving 88 programs that provide online courses to students in elementary, middle, and high school. The majority (62.5%) of the programs studied did not enroll full-time students and offered courses only as a supplement for students enrolled in traditional programs. In the full-time model, 37.5% of the online programs offered a full curriculum in which a student enrolled full-time to obtain a high school diploma online. The researchers reported that over 85,000 elementary and secondary students were taking at least one course online at the time of the study. They estimated that by the 2004-2005 school year, over 500,000 students would be involved in online education. They also concluded that online education at the elementary and secondary level would continue to grow in the future.

Based on data gathered during the 2002-2003 12-month school year, Setzer and Lewis (2005) estimated that about one-third (36%) of public school districts in the United

States had students who were enrolled in distance education courses. The researchers determined that this figure represents a projected 5,500 out of 15,040 public school districts in the United States. Furthermore, the researchers estimated that 8,200 public schools throughout the United States had students enrolled in distance education courses during this time. This figure represents approximately 9% of all public schools in the United States.

During the 2002-2003 12-month school year, public school districts reported an estimated 320,000 enrollments in distance education courses among regularly enrolled students (Setzer & Lewis, 2005). The researchers noted that the number of enrollments most likely includes duplicated counts of students, since the respondents were asked to count students for each course in which he or she was enrolled. Based on data received from the respondents, high schools accounted for the greatest percentage of enrollments in distance education courses (68%). The next highest percentage of enrollments were in combined or ungraded schools (29%), followed by middle or junior high schools (2%), and elementary schools (1%).

Setzer and Lewis (2005) found that as the instructional level of the school moved from the elementary grades through the high school grades, the percentage of schools with students enrolled in distance education courses increased. Fewer than 1% of all public elementary schools had students enrolled in distance education courses during the 2002-2003 12-month school year. Four percent of middle or junior high schools had students enrolled in distance education courses during this time, while 20% of combined or ungraded schools had students enrolled. In addition, 38% of public high schools had students enrolled in distance education courses. Finally, the researchers determined that

76% of the public schools with students enrolled in distance education courses were high schools, 15% were combined or ungraded schools, 7% were middle or junior high schools, and 2% were elementary schools.

Others have conducted research on the use of distance education courses and have documented their development and use in elementary, middle, and high schools (Butz, 2004; Clark, 2001; Kellogg & Pilotoski, 2002; Litke, 1998; Mills, 2003; Zucker, Kozma, & Yarnall, 2003). In addition, the number of virtual schools is on the rise, with many of these schools serving students in grades K-12 (Clark, 2001). Zucker et al. examined online learning's implications for K-12 education, primarily through a study of the Massachusetts-based Virtual High School program, and stated that increased educational access for students and teachers is most likely the primary argument in favor of online learning. Mills concurred with this idea, and further stated that special populations such as students who are at risk, home-schooled, rural, or have disabilities are frequently the targeted audiences.

#### *Distance Education Enrollments by Curriculum Area*

Based on data gathered from the respondents, Setzer and Lewis (2005) found that social studies or social science courses accounted for the largest percentage (23%) of all enrollments in distance education for students regularly enrolled in the districts during the 2002-2003 12-month school year. The remaining curriculum areas and their enrollment percentages were as follows: English/language arts (19%), mathematics (15%), natural/physical science (12%), foreign languages (12%), other unspecified curriculum areas (14%). The lowest percentages of enrollments were in general elementary school curriculum (3%) and computer science (4%). The researchers found that small districts

had a higher percentage (19%) of students enrolled in foreign language distance education courses compared to medium (11%) or large (6%) districts. Finally, data gathered from the respondents showed that the percentage of students enrolled in foreign language distance education courses was higher in rural districts (22%) than in suburban (10%) or urban (5%) districts.

Other researchers have documented K-12 students being enrolled in distance education courses related to various curriculum areas. These areas include foreign language, science, english/language arts, and mathematics. (Butz, 2004; Murphy, 2003; Schiel, Dassin, Magalhaes, & Guerrini, 2002; Urven & Yin, 2000). In most cases, distance education courses are employed in curriculum areas where there is a specific need (Mills, 2003; Zucker et al., 2003).

#### *Advanced Placement and College Preparatory Courses*

According to Setzer and Lewis (2005), exactly half (2,700) of the districts with students enrolled in distance education courses had students enrolled in Advanced Placement (AP) or college-level courses offered in a distance education format during the 2002-2003 twelve-month school year. The 45,300 estimated enrollments in AP or college-level courses accounted for 14% of the total enrollments in distance education courses during this period. Data gathered from respondents in smaller districts showed a greater percentage (24%) of students in AP or college-level distance education courses than in medium (10%) or large districts (7%). Data gathered from respondents in rural districts showed a greater percentage (27%) of students enrolled in AP or college-level distance education courses than did suburban (11%) or urban (4%) districts. Finally, the

researchers found that a greater percentage (11%) of students in suburban districts were enrolled in AP or college-level distance education courses than in urban districts (4%).

Other researchers have documented the development and teaching of AP and college-preparatory courses in an online distance education format (Hernandez, 2005; Olszewski-Kubilius & Lee, 2004; Zucker et al., 2003). Clark (2001) reported that Calculus AB was the online AP course offered by most schools, and further stated that in many cases, smaller school districts are not able to offer these types of courses because of funding and capacity issues. Zucker et al. reported that small high schools frequently do not have enough teachers available or trained to teach an AP course(s) in a particular subject area(s).

#### *Technologies Used to Deliver Distance Education Courses*

According to Setzer and Lewis (2005), respondents reported that Internet courses using synchronous (simultaneous or real-time) computer-based instruction, Internet courses using asynchronous (not simultaneous) computer-based instruction, two-way interactive video, one-way prerecorded video, and other technologies were all used to deliver distance education courses to students in their districts during the 2002-2003 12-month school year. Fifty-five percent of school districts reported that two-way interactive video was the most frequently used form of technology to deliver distance education courses to their students. Forty-seven percent of school districts reported that Internet courses using asynchronous, computer-based instruction was the primary mode of instructional delivery. Twenty-one percent of school districts reported that Internet courses using synchronous, computer-based instruction was the primary mode of instructional delivery. Sixteen percent of school districts reported that one-way

prerecorded video was the primary mode of instructional delivery, while 4% of school districts reported some other form of technology as the primary mode of instructional delivery.

Setzer and Lewis (2005) reported that in small and rural districts, the technology most often used as a primary instructional delivery mode for distance education courses was two-way interactive video. In medium and large districts, as well as urban and suburban districts, the technology most often used as a primary instructional delivery mode for distance education courses was Internet courses using asynchronous computer-based instruction. Again, the researchers acknowledge that small and rural districts are not mutually exclusive; small districts are frequently rural and vice-versa. In addition, large districts are frequently urban, and vice-versa. When reporting the technology used in the delivery of the greatest number of distance education courses, two-way interactive video (49%) was chosen more often by the respondents than any other technology. Thirty-five percent of the respondents chose Internet courses using asynchronous computer-based instruction as the technology used in the greatest number of distance education courses. Nine percent of the respondents chose Internet courses using synchronous computer-based instruction, 7% chose one-way prerecorded video, while 1% selected some other form of technology as the most frequently used to deliver distance education courses to students in their district.

In Georgia, it is known that high school students are enrolled in online distance education courses as well as courses that employ two-way interactive television (J. Brown, personal communication, June 16, 2005). Other researchers have documented

the use of various technologies in K-12 distance education courses (Clark, 2001; Litke, 1998; Mupinga, 2005).

#### *Online Distance Education Courses*

The Internet is the most recent form of technology through which distance education courses have been made available. This technology provides the means for online courses to be asynchronous, synchronous, or a mixture of both. U.S. Department of Education (2005) statistics show that 40,000-50,000 students in grades K-12 had enrolled in online distance education courses by the end of 2002. Out of all districts reporting students enrolled in distance education courses during the 2002-2003 12-month school year, Setzer and Lewis (2005) found that 59% of those districts had students enrolled in online distance education courses. The percentage of large districts (80%) with students enrolled in online distance education courses was higher than the percentage of medium (71%) or small (53%) districts with students enrolled in online distance education courses. Rural districts reported having a smaller percentage (51%) of students enrolled in online distance education courses than did suburban (71%) or urban (74%) districts.

Regarding the location from which students accessed their online distance education courses during the 2002-2003 12-month school year, Setzer and Lewis (2005) found that 92% of the districts allowed students to access their courses from school, 60% of the respondents reported that their students accessed their courses from home, and 8% of the respondents reported that their students accessed their courses from some other location. The percentage of large districts (77%) with students accessing online distance education courses from home was higher than the percentage of medium (66%) or small

districts (55%). In addition, respondents from rural districts reported a lower percentage (53%) of students accessing online distance education courses from home than did suburban (67%) and urban (78%) districts. There were no differences found in online access from home by level of poverty concentration of the school districts.

According to Setzer and Lewis (2005), some school districts have provided equipment so that students may participate in online distance education courses from home. Twenty-four percent of the districts with students accessing online distance education courses from home during the 2002-2003 12-month school year either provided or paid for a computer for all students, while 8% of the districts did so for some of their students. The Internet service provider was provided or paid for all students by 27% of the districts, while 7% of the districts provided or paid for the Internet service provider for some students. Some additional item (e.g. software programs, phone service for dial-up Internet service) was provided for all students by 6% of the districts, while only 2% of the districts did so for some students. Computers were provided or paid for all students by a greater percentage of small districts (29%) than medium (17%) or large districts (11%). Similarly, the Internet service provider was furnished or paid for students by a greater percentage of small districts (32%) than medium (20%) or large districts (15%). Finally, a higher percentage of rural districts (33%) provided or paid for computers for all students than did suburban (16%) or urban (9%) districts.

Other researchers have documented online distance education course providers that have provided or paid for computers and/or internet connections for their students (Clark & Berge, 2005). This practice is employed more often in school districts where students are less likely to have access to the necessary technology outside of school.

*Entities Delivering Distance Education Courses*

Clark (2001) conducted the first widespread study on the use of online distance education courses in elementary and secondary schools. In the study, he gathered data on program types to investigate the trends in elementary and secondary online education. Specifically, Clark identified the entities who offer elementary and secondary online education. Possible entities included state-sanctioned/state-level programs, consortium/regionally-based programs, school district programs, online charter schools, private online schools, and for-profit curricula providers. Each of the 33 elementary and secondary online programs participating in the study offered online courses to students either on a full or part-time basis. The survey was completed by administrators representing 33 elementary and secondary online programs that were identified through Internet research, literature review, and personal contacts.

Setzer and Lewis (2005) sought to determine the entities that delivered distance education courses to students who were regularly enrolled in the school districts during the 2002-2003 12-month school year. The possible entities included a cyber (online) charter school in the district, other schools in the district, their district itself (delivered centrally), another local school district, schools in another district (in their state), education services agencies within their state (not including the state education agency or local school districts), a state virtual school in their state, a state virtual school in another state, districts or schools in other states (other than state virtual schools), a postsecondary institution, an independent vendor, or other entities.

Of those districts with students enrolled in distance education courses during the 2002-2003 12-month school year, Setzer and Lewis (2005) found that 48% relied on a

postsecondary institution to deliver the courses. Students in 34% of districts were enrolled in distance education courses delivered by another local school district, or schools in other districts, within their state. Students in 18% of the districts had students enrolled in distance education courses delivered by education service agencies within their state, a state virtual school within their state, or by an independent vendor. Students in 16% of districts were enrolled in distance education courses delivered centrally from their own district. Respondents indicated that 8% of districts relied on other schools in their district (other than cyber charter schools) to deliver distance education courses. Another 3% to 4% of the respondents indicated that various additional entities delivered distance education courses to their students.

Setzer and Lewis (2005) found that other schools in the district were responsible for delivering distance education courses to students in a greater percentage of large districts (28%) than medium (15%) or small districts (5%) during the 2002-2003 12-month school year. Additionally, other schools in the district were responsible for delivering distance education courses to students in a greater percentage of urban districts (25%) than either suburban (9%) or rural districts (6%). Other local school districts or schools in other districts within the state were responsible for delivering distance education courses to students in a greater percentage of small districts (39%) than medium (25%) or large districts (13%). Additionally, a higher percentage of rural districts (40%) than either suburban (25%) or urban districts (20%) reported students enrolled in distance education courses delivered by another local school district, or schools in other districts, within their state.

Setzer and Lewis (2005) found that a smaller percentage of small districts (15%) than medium or large districts (27% each) reported students who were enrolled in distance education courses delivered by a state virtual school in their state. Postsecondary institutions were responsible for delivering distance education courses to a greater percentage of small districts (54%) than medium (30%) or large districts (33%). A smaller percentage of urban districts (22%) than suburban (44%) or rural districts (53%) that had students enrolled in distance education courses delivered by postsecondary institutions. A greater percentage of large districts (28%) than small districts (16%) reported students enrolled in distance education courses delivered by independent vendors. Finally, urban (29%) and suburban (23%) districts had greater percentages of students enrolled in distance education courses delivered by independent vendors than did rural districts (15%).

Setzer and Lewis (2005) sought to determine whether districts delivered distance education courses to students during the 2002-2003 12-month school year who were not regularly enrolled in their district (e.g. to students from other districts, private school students, or home-schooled students). According to the researchers, about 20% of districts that offered distance education courses delivered these courses to such students in this category.

#### *Reasons For Offering Distance Education Courses*

In a study designed to determine the effectiveness of virtual schools and to compare results with that of traditional education, Barker and Wendel (2001) conducted case studies in which six virtual schools in Canada served as the subjects. The researchers found that many rural schools could not offer certain courses due to low

enrollment. Therefore, it was beneficial to these districts for the virtual schools to offer courses not normally available at the traditional schools. Chaney (2001) stated that online courses serve as a way to help rural school districts whose budgets do not allow them to offer certain courses to their students. According to Doherty (2002), Kennedy-Manzo (2002), and Trotter (2002), technology-based distance education courses allow school districts to increase the number and variety of courses, and to help make student schedules and instructional delivery more flexible.

Setzer and Lewis (2005) sought to determine how important various reasons were for having distance education courses in public school districts during the 2002-2003 12-month school year. Reasons included offering courses not otherwise available at the school, offering Advanced Placement or college-level courses, addressing growing populations and limited space, reducing scheduling conflicts for students, permitting students who failed a course to retake it, meeting the needs of specific groups of students, and generating more district revenues. Eighty percent of the respondents reported that a very important reason for having distance education courses in the district was offering courses not otherwise available at the school. Fifty-nine percent of the respondents reported that meeting the needs of specific groups of students was a very important reason for having distance education courses in the district. Other reasons frequently cited as very important were offering Advanced Placement or college-level courses (50%) and reducing scheduling conflicts (23%). Four percent to 17% of the districts reported the remaining reasons listed above as being very important. A greater percentage of respondents indicated that generating more district revenues (77%) and

addressing growing populations and limited space (72%) were not as important as the other reasons for having distance education courses.

Setzer and Lewis (2005) found that respondents from a greater percentage of small districts (93%) than medium (86%) or large districts (82%) reported offering courses not otherwise available at the school as a somewhat or very important reason for having distance education during the 2002-2003 12-month school year. A greater percentage of rural districts (95%) than urban (79%) or suburban districts (86%) considered offering courses not otherwise available at the school a somewhat or very important reason for offering distance education courses. Respondents from a greater percentage of high-poverty districts (88%) than medium (79%) or low-poverty districts (80%) reported that meeting the needs of specific groups of students was a somewhat or very important reason for making distance education courses available to students.

Regarding the offering Advanced Placement or college-level courses, Setzer and Lewis (2005) reported that a greater percentage of small districts (74%) than medium (54%) or large districts (59%) rated this as a somewhat or very important reason for having distance education. In addition, a greater percentage of rural districts (76%) than suburban (59%) or urban districts (49%) cited this as a somewhat or very important reason for making distance education courses available to their students.

Regarding the reduction of scheduling conflicts for students, Setzer and Lewis (2005) reported that respondents from a greater percentage of large districts (70%) than medium (52%) or small districts (56%) cited this reason as a somewhat or very important reason for having distance education courses during the 2002-2003 12-month school year. Respondents from a greater percentage of large districts (50%) than medium (34%)

or small districts (30%) reported permitting students to retake failed courses a somewhat or very important reason for having distance education. In addition, respondents representing a greater percentage of urban districts (47%) than suburban (33%) or rural districts (31%) reported that permitting students to retake failed courses was somewhat or very important for having distance education. Setzer and Lewis reported that a greater percentage of large districts (44%) than medium (33%) or small districts (21%) rated addressing growing populations and limited space as a somewhat or very important reason for having distance education. Finally, a greater percentage of high-poverty districts (21%) than low-poverty districts (11%) reported generating more district revenues as a somewhat or very important reason for having distance education.

#### Barriers to the Implementation and Expansion of Distance Education

Several researchers have reported the following as barriers to the implementation and expansion of distance education programs in K-12 school districts: (a) increased time commitment, (b) lack of funding, (c) organizational resistance to change, (d) lack of shared vision for distance education in the organization, (e) lack of strategic planning for distance education, (f) lack of distance education training provided by the organization, (g) lack of necessary technical infrastructure, (h) slow pace of implementation, (i) lack of grants, (j) lack of technical support, (k) difficulty in convincing stakeholders of benefits to distance education, and (l) the lack of support staff necessary to develop courses (Berge & Muilenberg, 2003; Clark, 2001; Setzer & Lewis, 2005).

Setzer and Lewis (2005) sought to determine if there were any future plans for public school districts to expand their distance education programs. The researchers found that 72% of districts with students enrolled in distance education courses during

the 2002-2003 12-month school year planned to expand their programs in the future.

Based on what the respondents reported, there were no differences detected by district characteristics regarding plans to expand distance education courses.

Regarding districts whose respondents indicated there were future plans to expand distance education programs, Setzer and Lewis (2005) sought to determine the extent to which various factors, if any, might be considered barriers that were preventing the expansion from taking place. The possible factors included course development and/or purchasing costs, limited technological infrastructure to support distance education, concerns about course quality, restrictive federal, state, or local laws or policies, concerns about receiving funding based on student attendance for distance education courses, or some other reason.

More often than any other factor, Setzer and Lewis (2005) found that costs were cited as a major barrier preventing districts from expanding their distance education courses. Respondents from 36% of districts that were planning to expand their distance education programs reported that course development and/or purchasing costs were a major barrier preventing the expansion. Respondents from 54% percent of districts that were planning to expand their distance education courses said restrictive federal, state, or local laws or policies were not a factor preventing them from expanding. In addition, respondents from the districts said none of the following factors were preventing them from expanding distance education programs: limited technological infrastructure to support distance education, concerns about receiving funding for distance education courses based on student attendance, and concerns about course quality.

Among public school districts with plans to expand their distance education courses, Setzer and Lewis (2005) reported that 68% of the respondents indicated course development and/or purchasing costs were a moderate or major barrier keeping the district from expanding distance education courses. This reason was immediately followed by concerns about quality (37%), concerns about receiving funding for distance education courses based on attendance (36%), limited infrastructure to support distance education (33%), restrictive federal, state, or local laws or policies (17%), and some other reason (10%). Restrictive federal, state, or local laws or policies were cited as a major or moderate barrier preventing expansion of distance education programs by a greater percentage of urban districts (30%) than rural districts (15%). Additionally, respondents representing a greater percentage of urban districts (54%) than suburban (38%) or rural districts (34%) cited receiving funding based on attendance for distance education courses as a major or moderate barrier preventing them from expanding their distance education programs.

### Summary

In this chapter, the researcher presented findings from the major distance education research studies in each of the following areas: (a) student learning in distance education environments, (b) the characteristics of online learners, (c) student satisfaction with distance education, (d) the utilization of distance education courses at the elementary and secondary levels, and (e) the barriers to implementation and expansion of distance education programs in public schools. Secondary and expository research pieces were also included in the review. The Setzer and Lewis (2005) study is the seminal work

to date on baseline data for utilization of distance education courses in public school districts in the United States.

In much of the distance education literature on student satisfaction, student learning, and student characteristics, researchers have conducted comparison studies of variables between courses taught in traditional and distance education formats. Overall, researchers have found that distance education is comparable and is a viable alternative to traditional methods of education. Most of the primary research literature on distance education to date has focused on its usage in postsecondary institutions. Due to the increasing availability and use of these courses with younger students, many researchers agree that more attention should be devoted to the utilization of distance education courses in public elementary and secondary schools.

Distance education courses have been available to high school students in Georgia for at least 10 years. Beginning in 1993, courses were available through the Georgia Statewide Academic and Medical System (GSAMS), which is a two-way interactive video network. Online distance education courses have been available to high school students in Georgia since 2000. In May of 2005, Governor Sonny Perdue of Georgia signed Senate Bill 33 into law. Through this legislation, the Georgia Virtual School program was created. Currently, the program serves students in grades 9-12, but plans to serve students in middle grades are currently being made.

Although distance education courses have been available to high school students in Georgia since 1993, the researcher determined that there was very little statewide baseline data available regarding the current utilization of distance education courses in Georgia's K-12 public school districts. In addition, there was very little data regarding

the perceived barriers to the implementation and expansion of distance education programs in Georgia's school districts. The researcher believed that this information was vital to the operation and future success of the Georgia Virtual School program, and was important to all stakeholders involved in the distance education of Georgia's public school students. As a result of the study, the researcher hoped to fill this void in the research literature.

The following tables include information on the research studies presented in the review of related literature: table 1, p. 68, student learning in distance education; table 2, p. 73, characteristics of online learners; table 3, p. 77, student satisfaction with distance education; table 4, p. 87, utilization of distance education courses in K-12 schools, and table 5, p. 89, the barriers to implementation and expansion of distance education programs.

Table 1

## Studies related to student learning in distance education environments

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Beare (1989)	Compared the effectiveness of distance education delivery methods	175 post-secondary students enrolled in one of 6 instructional formats	Quantitative: Survey and exam scores	<ul style="list-style-type: none"> <li>No statistically significant differences found among student achievement</li> </ul>
McCleary and Egan (1989)	Compared two groups of students taking the same 3 courses in traditional and two-way interactive TV formats	20 university students in the TV course. Number of students in traditional course not reported	Quantitative: several factors compared using t-test comparison of means	<ul style="list-style-type: none"> <li>No statistically significant differences found among student achievement</li> </ul>
Ritchie and Newby (1989)	Compared results of same course taken in traditional classroom, TV broadcast studio with instructor present, and remote site without instructor	26 college undergraduates randomly assigned to the three groups	Quantitative: Survey, multiple regression analysis performed on achievement test scores	<ul style="list-style-type: none"> <li>Students in studio classroom scored significantly higher than remote group on achievement test</li> <li>No differences found in achievement between two TV groups and traditional groups</li> </ul>

Table 1 (*continued*)

## Studies related to student learning in distance education environments

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Cheng, Lehman, and Armstrong (1991)	Examined course performance in a university level computer applications course taught in a traditional setting and remote site via phone and e-mail	25 graduate students enrolled in traditional course; 28 in-service teachers enrolled in online course	Quantitative: comparisons of test results	<ul style="list-style-type: none"> <li>No significant differences found between test scores of groups</li> </ul>
Martin and Rainey (1993)	Examined effects of two-way, interactive TV instruction on student achievement in 2 high school courses – each taught in TV and traditional formats	98 high school students	Quantitative: matched-pair t-test comparisons of post-test scores at end of course	<ul style="list-style-type: none"> <li>Student achievement was not lowered by TV instruction</li> </ul>
Moshinskie (1995)	Compared effectiveness of two distance education methods for training emergency medical service providers to a traditional classroom course	Emergency medical personnel – number of participants not provided	Quantitative: Comparison of post-course exams using t-test comparison of means	<ul style="list-style-type: none"> <li>No significant difference in exam scores or attrition rates among groups</li> </ul>

Table 1 (*continued*)

## Studies related to student learning in distance education environments

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Ridley and Husband (1998)	Compared GPA of students taking online courses to that of students in traditional courses – to determine if students in online courses were more likely to cheat, also wanted to measure academic rigor of online courses	Post-secondary students – number not provided	Quantitative: compared GPA between and within groups; t-test comparison of mean course grades conducted to determine if any differences occurred between groups based on instructional setting	<ul style="list-style-type: none"> <li>• Online students did not score higher in course grades than traditional students</li> <li>• Concerns regarding academic rigor and integrity were exaggerated if not unfounded</li> </ul>
Wegner, Holloway, & Garton (1999)	Determined if course format (distance or traditional) had effect on final exam scores	17 students in traditional course; 14 students in online course	Quantitative: 100-point final exam scores compared using t-test for independent samples	<ul style="list-style-type: none"> <li>• No statistically significant difference found between final exam scores of two groups</li> </ul>
Dellana, Collins, and West (2000)	Determined if course format (distance or traditional) had effect on final course grades in an undergraduate business course	70 undergraduate students in traditional section, 151 students in online section	Quantitative: T-test comparison of means for average course grades between two groups; Pearson's product-moment to correlate GPA and absentee rates with course grades	<ul style="list-style-type: none"> <li>• No statistically significant difference found in average course grades between groups</li> </ul>

Table 1 (*continued*)

## Studies related to student learning in distance education environments

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Kozma (2000)	Compared online student outcomes and attitudes with those of students taking same courses in traditional format; compare online courses to traditional courses	Secondary students enrolled in 4 online courses	Quasi-experimental design	<ul style="list-style-type: none"> <li>• Traditional students rated courses as more difficult and higher quality than did online students</li> <li>• Traditional students reported higher rate of communication with teachers</li> <li>• No significant difference in grades between groups</li> </ul>
Navarro and Shoemaker (2000)	Compared student achievement in a university macroeconomics class taught in traditional and online settings	151 students in traditional setting, 49 students in online setting	Quantitative: T-test comparisons of mean final exam scores and other learner characteristics	<ul style="list-style-type: none"> <li>• Online students scored significantly higher on final exams than traditional students</li> <li>• No significant differences found in learner characteristics</li> </ul>

Table 1 (*continued*)

## Studies related to student learning in distance education environments

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Carey (2001)	Compared student learning outcomes for students enrolled in a post-secondary science teaching methods course taught in traditional and online formats	60 students enrolled in traditional course; 103 students enrolled in online course	Quantitative: T-test comparisons of means on pre-test scores, post-test scores, and final course grades between both groups	<ul style="list-style-type: none"> <li>• No statistically significant differences between two groups in pre-test, post-test, or final course grades</li> </ul>
Tucker (2001)	Determined if student achievement (test scores) earned in online and traditional sections of same course were comparable	23 university students in traditional course, 24 students in online course	Quantitative: T-test comparison of means on pre-test, post-test, homework grades, research paper grades, and final course scores	<ul style="list-style-type: none"> <li>• No significant differences found on pre-test scores, homework grades, research paper grades, or final scores</li> <li>• Online students scored higher on post-test and final</li> </ul>
Neuhauser (2002)	Determined if students in online or traditional courses differed significantly in their learning styles	25 students in traditional section of an undergraduate management course; 27 students in the online section	Quantitative: T-test comparison of means for test scores and final grades	<ul style="list-style-type: none"> <li>• No significant differences found on test scores and final grades</li> <li>• Online students scored higher on test</li> </ul>

Table 2

## Studies related to the characteristics of online learners

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Aragon, Johnson, and Shaik (2002)	Examined the influence of student learning style preferences on performance in online and face-to-face settings	19 students in online course; 19 students in face-to-face course	Quantitative: Assignment and exam grades compared	<ul style="list-style-type: none"> <li>• No significant differences found in exam scores</li> <li>• Some significant differences found in learning style preferences between groups</li> <li>• Students can succeed as well in online courses as traditional courses</li> </ul>

Table 2 (*continued*)

## Studies related to the characteristics of online learners

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Dutton, Dutton & Perry (2002)	Examined the learning characteristics of university students in an online course and those taking same course in a traditional setting	196 students in two groups	Quantitative: Survey; Chi-square tests used to evaluate differences between groups	<p>No difference in following factors between groups:</p> <ul style="list-style-type: none"> <li>• conflict between class time and childcare commitments</li> <li>• better learning from reading the lecture materials</li> <li>• course scheduling conflicts</li> </ul> <p>Traditional students rated following factors more important than online group:</p> <ul style="list-style-type: none"> <li>• face-to-face contact with instructor</li> <li>• face-to-face contact with fellow students</li> <li>• motivation from regular class meetings</li> <li>• better learning from hearing a lecture</li> </ul>

Table 2 (*continued*)

## Studies related to the characteristics of online learners

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Neuhauser (2002)	Determined if students enrolled in online or traditional courses different significantly in their learning styles	25 students in traditional section of an undergraduate management course; 27 students in the online section	Quantitative: T-test comparison of means for test scores and final grades	<ul style="list-style-type: none"> <li>• No significant differences found between groups on test scores and final grades</li> <li>• Online students scored slightly higher on test scores and final grades</li> </ul>
Roblyer & Marshall (2003)	Examined learner characteristics as predictors of student learning in secondary online education	135 secondary students enrolled in online courses	Quantitative: Survey	<ul style="list-style-type: none"> <li>• A statistically significant correlation was found between student confidence in academic ability and achievement in online courses</li> </ul>

Table 2 (*continued*)

## Studies related to the characteristics of online learners

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Weiner (2003)	Examined factors that influence student achievement, motivation, and completion in online courses	118 students enrolled in online courses at the secondary level	Qualitative: Interviews	<ul style="list-style-type: none"> <li>• Student motivation was the most often cited factor in predicting student learning in the online environment</li> <li>• Motivation was strongly influenced by teacher support, peer interaction, and technology support</li> <li>• Successful completion relied on desire to finish courses, keep up with deadlines, and previous success in online education</li> </ul>

Table 3

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
St. Pierre & Olsen (1991)	Analyzed students' perceptions of their instructors and the instructional impact of their courses related to student satisfaction with college correspondence courses	700 students who had completed correspondence courses at a University in the eastern United States	Quantitative: survey	<ul style="list-style-type: none"> <li>• Flexibility cited by majority as primary reason for taking courses</li> <li>• Motivation, positive reinforcement, suggestions for improvement cited as most important influences on student satisfaction</li> <li>• Significant positive relationship between opportunity to apply experiential learning, prompt return of lessons, and didactic conversation with instructors as influencing overall student satisfaction with correspondence courses</li> </ul>

Table 3 (*continued*)

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Egan, Welch, Page, & Sebastian (1992)	<p>Examined the perceptions of students participating in three instructional delivery systems:</p> <ul style="list-style-type: none"> <li>• traditional face-to-face instruction</li> <li>• a closed-circuit broadcast system through which students participated in live, interactive sessions</li> <li>• video recordings of weekly conventional classes .</li> </ul>	<ul style="list-style-type: none"> <li>• 154 students in the traditional classes</li> <li>• 93 students in the live telecast sessions</li> <li>• 267 students participating in the video-viewing classes.</li> </ul>	Quantitative: survey	<ul style="list-style-type: none"> <li>• The learners in the traditional classes perceived the overall quality of course presentation to be higher than the learners in the two distance education groups</li> <li>• All 3 groups reported that the amount of material covered and the level of difficulty of the material was high.</li> <li>• Students who perceived student interaction to be high in a course were more likely to be satisfied with the course</li> </ul>

Table 3 (*continued*)

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Tallman (1992)	Identified factors that contribute to student satisfaction and persistence in correspondence courses	311 students enrolled in correspondence courses at a small private university in the United States.	Quantitative: survey	<ul style="list-style-type: none"> <li>• Pre-enrollment orientation was most greatly associated with student satisfaction:</li> </ul>
Fulford & Zhang (1993)	Collected information concerning student perceptions of student-student and student-instructor interaction in an interactive television course and student satisfaction with the course	123 teachers enrolled in a professional development program in Hawaii	Quantitative: Survey	<ul style="list-style-type: none"> <li>• Personal interaction and overall interaction correlated with satisfaction</li> <li>• Participants' perceptions of overall course interaction significantly correlated with level of satisfaction</li> <li>• Participants' perceptions of personal interaction were moderately, but not significantly correlated with their satisfaction</li> </ul>

Table 3 (continued)

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Biner, Dean, & Mellinger (1994)	Identified the factors leading to student satisfaction with a televised live-broadcast, University-level course	<p><u>Investigation #1</u> 201 students enrolled in 14 live, interactive televised University courses located at 43 off-campus locations</p> <p><u>Investigation #2</u> 177 students enrolled in 13 live, interactive televised courses offered by the same University</p>	Quantitative: Survey (same survey was used for both investigations)	<p>Seven factors accounted for student satisfaction with the televised distance education courses:</p> <ul style="list-style-type: none"> <li>• instructor quality</li> <li>• technology used</li> <li>• course management</li> <li>• on-site personnel</li> <li>• promptness of material delivery</li> <li>• support services</li> <li>• out-of-class communication with the instructor</li> </ul>
Gabrielle (1997)	Examined student beliefs concerning the effectiveness of online courses and their satisfaction with the online courses in which they were enrolled	253 students in 8 online sections of post-secondary courses	Quantitative: Survey	Student-instructor interaction and perceived media quality were consistent positive predictors of student satisfaction in online instruction

Table 3 (*continued*)

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
O'Malley & McCraw (1999)	Examined the perceptions of two groups of University students concerning online education	128 University students enrolled in two sections of an undergraduate business course: 67 students in the traditional section; 61 students in the online section	Quantitative: Survey	<ul style="list-style-type: none"> <li>• No significant differences found between the two groups concerning their perceived learning in the course</li> <li>• Online students reported they learned as much in the online course as they would have in a traditional setting</li> <li>• Students in both groups reported that they did not believe that online education was superior to traditional teaching methods</li> </ul>

Table 3 (*continued*)

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Jiang & Ting (2000)	Identified factors that influenced the perceived learning of students in 19 web-based university courses	183 University students who had taken at least one online course	Quantitative: Survey  Qualitative: Observations, Documents	<ul style="list-style-type: none"> <li>• Findings favor an interactive and collaborative online course environment</li> <li>• The requirement of a high amount of online discussion made the most significant difference in student perceived learning</li> </ul>
Mason & Weller (2000)	Determined factors relating to student satisfaction with an online course at a post-secondary institution in England	850 post-secondary students	Qualitative: Interviews	<p>Factors that most affected student satisfaction</p> <ul style="list-style-type: none"> <li>• Support of the tutor or instructor</li> <li>• The amount of time, patience, and motivation devoted to the course</li> <li>• Extent to which course content and presentation matched expectations</li> </ul>

Table 3 (*continued*)

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Leonard & Guha (2001)	Examined the perceptions of students enrolled in traditional and online sections of a University course	University students enrolled in two sections of a teacher education mathematics methods course <ul style="list-style-type: none"> <li>• 24 students in the traditional section</li> <li>• 20 students in the online section</li> </ul>	Quantitative: Survey	<p>Students in the traditional section:</p> <ul style="list-style-type: none"> <li>• 78% reported online courses should be offered by the University</li> <li>• 78% believed chat rooms were not as effective as classroom discussions</li> </ul> <p>Students in the online section:</p> <ul style="list-style-type: none"> <li>• 75% reported satisfaction with online course and would take more</li> <li>• 60% reported the online course provided better learning opportunity</li> <li>• After experiencing an online course, student perceptions are more positive</li> </ul>

Table 3 (*continued*)

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Shea, Frederickson, & Pickett (2001)	Identified the factors that contribute to student satisfaction with online education	935 University students who had recently finished one or more online courses	Quantitative: Survey	<p>Good practices in online education included:</p> <ul style="list-style-type: none"> <li>• frequent contact between students and faculty</li> <li>• student-centered learning opportunities</li> <li>• prompt feedback</li> <li>• high teacher expectations</li> <li>• time on task</li> </ul> <p>Properly designed online courses can be equally satisfying for students as traditional face-to-face instruction</p>
Valenta, Therriault, Dieter, & Mrtek (2001)	<ul style="list-style-type: none"> <li>• Identified positive and negative aspects of online education</li> <li>• Examined factors of online education learners believe are important in choice</li> </ul>	74 post-secondary students taking an online course for the first time	Quantitative: Survey	<p>Concluded that flexibility in learning, was considered by students to be the most important positive aspect of online education</p>

Table 3 (*continued*)

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Picciano (2002)	Examined the possible relationship between student performance in an online university course based on scores on course assignments and exams and student perception of the quality and quantity of student-to-student interaction	23 students in an online educational administration course	Quantitative: Survey	Concluded that the success of an online course is dependent on the nature of student-to-student and student-to-teacher interaction.
Woods (2002)	Compared the amount of instructor-initiated e-mail contact with students and the student satisfaction with the online course	40 students randomly assigned to four instructional groups	Quantitative: Survey	<ul style="list-style-type: none"> <li>• No significant statistical difference found among four groups in student satisfaction with the online course.</li> <li>• The students who received more e-mails interacted more with other students in the online chat sessions and with the instructors in reciprocal e-mails</li> </ul>

Table 3 (*continued*)

## Studies related to student satisfaction with distance education

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Butz (2004)	Examined factors related to student and parent satisfaction with online education at the elementary and secondary levels	<ul style="list-style-type: none"> <li>• 195 elementary and secondary students enrolled in 1 of 3 full-time online educational programs</li> <li>• 186 parents with at least one child in 1 of the 3 online programs</li> </ul>	Quantitative: Surveys	<p>The following factors were significantly related to student satisfaction:</p> <ul style="list-style-type: none"> <li>• school-level technology support</li> <li>• school-level instructional support</li> <li>• curriculum programs</li> <li>• social interactions</li> <li>• All of the same factors listed above (except for school-level technology support) were significantly related to parent satisfaction</li> </ul>

Table 4

## Studies related to the utilization of distance education in elementary and secondary schools

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Litke (1998)	Identified strengths of online program as reported by students, teachers, and parents	Teachers, parents, and students (number not known)	Qualitative: Interviews	<ul style="list-style-type: none"> <li>• Strengths were time flexibility, improvements over other forms of distance education, ability to work from home</li> <li>• Criticism included student isolation, high level of labor intensity for teachers, tech difficulties</li> </ul>
Clark (2001)	Determined the entities who offered online courses to elementary and secondary students	Administrators from 33 elementary and secondary online programs	Quantitative: Survey	<ul style="list-style-type: none"> <li>• By end of 2001-02 school year, 40,000-50,000 students enrolled in online courses</li> </ul> <p>All schools served high school students, 17 schools served middle students, 9 schools served elementary students</p>

Table 4 (*continued*)

## Studies related to the utilization of distance education in public elementary and secondary schools

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Kellogg & Politoski (2002)	Described the characteristics of online education programs for elementary and secondary students	Administrators in 88 online education programs for elementary, middle, and high school students	Quantitative: Survey	<ul style="list-style-type: none"> <li>Classified programs into two models – supplemental and full time</li> <li>Over 85,000 elementary and secondary students taking at least one online course at time of study</li> <li>Estimated that by end of 2004-2005 school year, over 50,000 students would be involved in online education</li> </ul>
Setzer & Lewis (2005)	Described the utilization of distance education courses in U.S. public elementary and secondary schools	2,305 public U.S. school districts	Quantitative: Survey (descriptive study)	<ul style="list-style-type: none"> <li>Various baseline utilization data reported by demographics (rural, suburban, urban)</li> </ul>

Table 5

## Studies related to barriers to the implementation and expansion of distance education programs

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ANALYSIS	OUTCOMES
Clark (2001)	Described the barriers to implementation and expansion of K-12 distance education programs	Administrators from 33 elementary and secondary online programs	Quantitative: Survey	<ul style="list-style-type: none"> <li>Funding and course development listed as barriers</li> </ul>
Berge & Muilenberg (2003)	Described the barriers to implementation and expansion of K-12 distance education	159 K-12 educators working in distance education	Quantitative: Survey	<ul style="list-style-type: none"> <li>Reported several barriers including funding and lack of tech support</li> </ul>
Setzer & Lewis (2005)	Described the barriers to the expansion of K-12 distance education courses	2,305 public U.S. school districts	Quantitative: Survey (descriptive study)	<ul style="list-style-type: none"> <li>Reported several barriers including federal, state, and local policies, funding</li> </ul>

## CHAPTER III

### METHODOLOGY

#### Introduction

Although much of the research literature on distance education has focused on postsecondary institutions, the research base on distance education in elementary and secondary schools is growing (Clark, 2001; Kellogg & Politoski, 2002; Setzer & Lewis, 2005). In recent years, the development of the Internet and computer technology has made online distance education courses more readily available to students in public school districts. The creation of the Georgia Virtual School in May 2005 has opened new opportunities for high school students across Georgia to participate in these courses.

Although distance education courses have been available to public high school students in Georgia for at least 10 years, the researcher determined that there was very little available statewide baseline data regarding the utilization of these courses. In addition, there was very little data on the perceived barriers to the implementation and expansion of distance education programs in Georgia's K-12 public school districts. The researcher believed that this information was vital to the operation, planning, and success of the Georgia Virtual School program and to all stakeholders involved in the distance education of Georgia's public school students. The researcher attempted to close this information gap based on the findings as a result of this study.

This chapter contains the following sections: (a) the research design, (b) population and participants, (c) development of the instrumentation, (d) pilot study, (e) data collection procedures, and (f) method of data analysis. The chapter concludes with a brief summary of the methodology used for the study.

## Research Questions

The researcher, through this study, sought to answer the following overarching research questions: How are distance education courses being utilized in Georgia's K-12 public school districts? What are the perceived barriers to the implementation and expansion of distance education programs in Georgia's K-12 public school districts? The following sub-questions were also considered:

1. What has been the trend of distance education utilization in the State of Georgia over the last five years?
2. To what extent does utilization of distance education differ by the districts' metropolitan status (urban, suburban, rural)?
3. For what reasons do Georgia's K-12 public school districts offer distance education courses?
4. Through what entity(ies) or programs are distance education courses available? (e.g., statewide virtual school, virtual school operated by a single district, vendor, etc.)
5. What is the extent of appropriate technology use for distance education in Georgia's K-12 public school districts? (Internet, two-way interactive video, etc.)
6. What are major implementation problems that may hinder the expansion of distance education in Georgia's K-12 public school districts?

## Research Design

In order to answer the overarching research question and sub-questions, the researcher employed the survey research method. The researcher designed the study to be descriptive in nature, since the purpose of the study was to gather and describe

baseline data regarding the utilization of distance education courses in Georgia's K-12 public school districts, as well as the districts' perceived barriers to the implementation and expansion of distance education programs. Descriptive research describes the characteristics of the phenomena being studied. In this method of research, questionnaires are frequently used to determine the opinions and perceptions of persons of interest to the researcher (Borg, Gall, & Gall, 1993).

According to Borg et al. (1993), questionnaires are useful for collecting basic descriptive information. Therefore, the researcher used a questionnaire to collect information from 175 of the 180 Georgia K-12 public school districts. Procedures commonly used to analyze descriptive research data were used to analyze information about distance education programs. The researcher answered the proposed research questions based on a quantitative analysis of data obtained from the questionnaire.

#### Population

The population for this study was 175 of the 180 Georgia superintendents of public school districts, or their designees. The designee may have been the director of curriculum, technology coordinator, distance education coordinator, or someone else in each school system who coordinated or was knowledgeable about the system's distance education program. Because most distance education programs have a director or coordinator, the researcher felt that these individuals should be able to provide the information needed to answer the research questions. On the questionnaire, the researcher solicited the job description of the respondent.

## Instrumentation

Based on an existing survey, the researcher designed a survey instrument for the collection of data for the study (see Appendix E). Nardi (2003) stated that in order to be measured, concepts from research findings should be translated into variables. A questionnaire was ideally suited for data collection in this study, since the use of questionnaires allows researchers to measure many variables (Borg et al., 1993).

As Nardi (2003) suggested, the researcher developed questionnaire items based upon research questions and a review of the research literature regarding distance education programs in K-12 school districts. Each questionnaire item was directly related to the research questions and to the concepts studied, which included:

- Distance Education Enrollment Patterns
- Technologies Used to Deliver Distance Education
- Entities Delivering Distance Education Courses
- Course Access Locations
- Reasons for Offering Distance Education Courses
- Barriers to Implementation and Expansion of Distance Education
- Demographics of School Districts

Under the leadership of the National Center for Education Statistics, Setzer and Lewis (2005) released the first national study on this topic in March of 2005. To date, the Setzer and Lewis study is the seminal study on the utilization of distance education courses in public school districts. Some of the researcher's survey items were gleaned from the survey used in the Setzer and Lewis study. Before using some of the Setzer and Lewis questions, the researcher obtained permission to do so from the National Center for

Education Statistics (see Appendix C) (B. Greene, personal communication, March 10, 2005). The researcher created additional questions related to the research questions and based on the review of related literature. In the development of the survey instrument, the researcher's goal was to develop a questionnaire to obtain as much information as possible. The researcher also attempted to develop a survey that would be visually pleasing and would take little time to complete (Nardi, 2003).

The majority of the items on the questionnaire were in closed form, which made them quicker and easier for respondents to complete (Nardi, 2003), and permitted only certain responses (Borg et al., 1993). A variety of intensity scales with different selections of values or categories were used for questionnaire items, including typical two-directional 1 to 4 Likert-type scales where 1 indicates "not at all", 2 indicates "minor extent", 3 indicates "moderate extent", and 4 indicates "major extent". The researcher included three open-ended questions. For these questions, respondents were able to make any response they wish in their own words. Demographic items that provided information about the school districts were included to understand how distance education programs and needs varied across the different categories of school districts.

Borg et al. (1993) stated that in order to have content validity, the questionnaire items must represent the content that the questionnaire is designed to measure. The researcher provided a questionnaire item analysis, which included all items in the questionnaire, the concepts addressed by the items, the literature that supported the inclusion of the item in the questionnaire, and the research question that each item helped the researcher to answer (see Table 6).

Table 6

## Analysis of questionnaire items

ITEM	CONCEPT	RESEARCH QUESTION	RESEARCH
1	Enrollments in distance education courses by school year and instructional level	1	Barker & Wendel, 2001; Butz, 2004; Clark, 2001; Kellogg & Politoski, 2002; Litke, 1998; Setzer & Lewis, 2005; Zucker et al., 2003
2	AP and college prep enrollments	3	Clark, 2001; Hernandez, 2005; Olszewski-Kubilius & Lee, 2004; Setzer & Lewis, 2005; Zucker et al., 2003
3	Technologies used in delivery	5	Clark, 2001; Litke, 1998; Mupinga, 2005; Setzer & Lewis, 2005
4	Primary technology used	5	Clark, 2001; Litke, 1998; Mupinga, 2005; Setzer & Lewis, 2005
5	Entities delivering Courses	4	Clark, 2001; Setzer & Lewis, 2005
6	Curriculum areas in which students are enrolled in distance education courses	1	Butz, 2004; Murphy, 2003; Schiel et al., 2002; Setzer & Lewis, 2005; Urven & Yin, 2000
7	Student location while accessing courses	5	Clark & Berge, 2005; Setzer & Lewis, 2005
8	District funding for home access	5	Clark & Berge, 2005; Setzer & Lewis, 2005
9	Reasons for district funding for home access	5	Clark & Berge, 2005; Setzer & Lewis, 2005

Table 6 (continued)

Analysis of questionnaire items			
ITEM	CONCEPT	RESEARCH QUESTION	RESEARCH
10	Need to expand distance education program	6	Clark, 2001; Setzer & Lewis, 2005
11	Additional comments regarding expansion	6	
12	Reasons for offering distance education courses	3	Barker & Wendel, 2001; Berge & Muilenberg, 2003; Chaney, 2001; Doherty, 2002; Kennedy-Manzo, 2002; Setzer & Lewis, 2005; Trotter, 2002
13	Barriers to expansion of distance education programs	6	Berge & Muilenberg, 2003; Clark, 2001; Setzer & Lewis, 2005
14	Barriers to implementation of distance education programs	6	Berge & Muilenberg, 2003; Clark, 2001; Setzer & Lewis, 2005
15	Additional comments regarding barriers to implementation and expansion of distance education programs	6	Berge & Muilenberg 2003; Clark, 2001
16	Metropolitan status of district	2	Downs & Moller, 1999; Howley & Harmon, 2000; Mills, 2003; Setzer & Lewis, 2005
17	Percentage of students eligible for free and reduced lunch (poverty level)	2	Setzer & Lewis, 2005

Table 6 (*continued*)

Analysis of questionnaire items			
ITEM	CONCEPT	RESEARCH QUESTION	RESEARCH
18	Size of district	2	Downs & Moller, 1999; Howley & Harmon, 2000; Setzer & Lewis, 2005
19	Racial/ethnic makeup of district	2	Setzer & Lewis, 2005
20	Job description of respondent	2	

#### Pilot Study

After the survey was reviewed by experts, the researcher conducted a pilot study. Nardi (2003) stated that surveys should be piloted using individuals who are similar to the participants in the actual study. However, he stated that those individuals involved in the pilot should not be included in the group of individuals who will be participating in the study. Therefore, the researcher conducted a pilot study of the survey instrument using a group of five of the 180 Georgia public school system superintendents. A random stratified sample of five respondents were chosen, which included superintendents who represent rural, suburban, and urban districts. This group of five superintendents was not included in the study.

The respondents were asked to provide feedback as to any directions or questions that were confusing, and how long it took them to take the survey. The researcher used the results of the pilot study to refine the questionnaire and locate potential problems in

the interpretation or analysis of data (Borg et al., 1993). After examining the survey results, the researcher made changes to the survey instrument as necessary.

Each of the five superintendents in the pilot study stated that data regarding actual numbers of enrollments over a period of years would be extremely difficult, if not impossible, to collect. Therefore, the researcher removed that question from the survey. In its place, the researcher substituted a question that required the participants to indicate which school year(s) out of the last five, and at which instructional level(s) their district had any students enrolled in distance education courses. After feedback was received from the pilot study participants, the researcher examined the survey in an effort to determine if the respondents had trouble completing the survey. The pilot study participants reported no trouble with the completion of the survey, and that the survey took anywhere from 10 minutes to 20 minutes to complete.

#### Data Collection

The researcher obtained permission from the Institutional Review Board at Georgia Southern University to conduct the study (see Appendix D). The researcher developed a letter of introduction (see Appendix A) that was sent to the 175 participants via e-mail, with a web address for the survey. The survey was developed using an online survey company, QuestionPro (<http://www.questionpro.com>). In the letter, the researcher explained the purpose of the study and requested the participation of each recipient. The respondents were informed that their answers would be kept confidential, their responses would not be revealed, and participation in the study was voluntary (Nardi, 2003). A deadline for completing the survey, Thursday, March 23, 2006, was stated in the letter of introduction. In addition to the letter, the researcher scanned and attached a letter of

support from Dr. Kristie Clements, the director of the Georgia Virtual School, which is operated by the Georgia Department of Education (see Appendix B). The purpose of this letter was to explain to the participants that the data was valuable and important to the Georgia Department of Education as it pertained to the future planning and development of the Georgia Virtual School.

Those respondents who wished to receive a copy of the aggregated results of the survey were asked to respond to the e-mail and indicate so. After two weeks, a follow-up e-mail was sent to each participant. The follow-up e-mail served two purposes: to thank those participants who had completed the survey, and to ask those participants who had not yet completed the survey to do so. A second follow-up email was sent one week later. Of the 175 surveys sent, the researcher received 65 surveys, for a return rate of 37.14%.

#### Analysis of the Data

As a result of this study, the researcher described the current utilization of distance education courses in Georgia's K-12 public school districts, as well as the perceived barriers to the implementation and expansion of distance education programs. Descriptive statistics were appropriate for this study since the researcher's primary objective was to summarize the data collected from a questionnaire administered to Georgia's K-12 public school system superintendents or their designees. The researcher analyzed data collected from the participants using statistical procedures commonly used in descriptive research (Borg et. al, 1993).

The online survey company, QuestionPro, provided the data analysis needed for each survey question. In order to answer the closed form and Likert-scale research

questions, the researcher reported the frequencies and percentages of responses for each question. For the Likert scale questions, the researcher also reported the mean and standard deviation, and number of respondents for each of the responses. The researcher coded the responses from the open-ended question and created categories, based on similarities. Finally, the researcher calculated a cross-tabulation with each question and the metropolitan status of the district (urban, suburban, rural), to see if there were any significant differences in responses to the questions by metropolitan status of the districts (urban, suburban, rural). The cross-tabulation was calculated through the Pearson's Chi-Square test. Where necessary, the researcher entered data from the respondents into the Statistical Package for the Social Sciences (SPSS) software, Advanced Model 12.0 for Windows, to do further Chi-Square analyses in order to determine if there was a differentiation among individual parts of questions. The data were presented in Chapter IV through text and tabular format.

### Summary

In this chapter, the researcher presented the research study design and methodology. The researcher's intent was to describe the current utilization of distance education courses in Georgia's K-12 public school districts, as well as the barriers to the implementation and expansion of distance education programs, by collecting descriptive information from superintendents or their designees through the use of a survey instrument.

The researcher used a questionnaire, which was developed through a review of literature on the utilization of distance education programs in K-12 school districts. Feedback of three experts in the field of K-12 distance education was solicited in order to

establish content validity. Through the use of a pilot study involving five of the 180 Georgia public school superintendents, the researcher refined the survey questions. In this chapter, the researcher included a description of the survey instrument, along with information on the participants in the study, the data collection procedures, and the method of data analysis. The researcher presented the results of the data analysis in Chapter IV.

## CHAPTER IV

### REPORT OF DATA AND DATA ANALYSIS

The beginnings of distance education occurred during the 19<sup>th</sup> century. Distance education courses have been available in postsecondary institutions for many years, and have been delivered through a variety of methods. The Internet is now the primary mode of delivery for distance education courses. Throughout the United States, the prevalence and utilization of these courses in public elementary and secondary schools is increasing. Within the last decade, many states have created virtual schools, which have provided elementary and secondary students the opportunity to take courses online for a variety of reasons, and in a variety of subject areas. Distance education in Georgia reached a milestone when the Georgia Virtual School program was created on May 4, 2005, with the signing of Senate Bill 33 by Governor Sonny Perdue.

#### Introduction

The researcher investigated the current utilization of distance education courses and the perceived barriers to the implementation and expansion of distance education programs in Georgia's public K-12 school districts. In order to discover potential problems with the data collection instrument before the investigation began, the researcher conducted a pilot study in which a random stratified sample of five Georgia public school district superintendents were chosen to complete the survey and provide feedback. The researcher made the recommended changes to the survey. For the actual research study, the researcher surveyed the remaining 175 of the 180 Georgia public school district superintendents. Sixty-five surveys were completed, for a return rate of 37.14%.

## Research Questions

Through this study, the researcher sought to answer the following overarching research questions: How are distance education courses being utilized in Georgia's K-12 public school districts? What are the perceived barriers to the implementation and expansion of distance education programs in Georgia's K-12 public school districts? The following sub-questions were also considered:

1. What is the trend of distance education utilization in the State of Georgia over the last five years?
2. To what extent does utilization of distance education differ by the districts' metropolitan status (urban, suburban, rural)?
3. For what reasons do Georgia's K-12 public school districts offer distance education courses?
4. Through what entity(ies) or programs are distance education courses available? (e.g., statewide virtual school, virtual school operated by a single district, vendor, etc.)
5. What is the extent of appropriate technology use for distance education in Georgia's K-12 public school districts? (Internet, two-way interactive video, etc.)
6. What are major implementation problems that may be hindering the expansion of distance education in Georgia's K-12 public school districts?

## Research Design

The research design for the study was the descriptive survey approach. The researcher developed a survey (see Appendix E) to collect data regarding the current

utilization of distance education courses and the perceived barriers to the implementation and expansion of distance education programs in Georgia's K-12 public school districts. Quantitative data were gathered and analyzed by the researcher. Statistics common to quantitative research were used to analyze and report the data.

### Findings

The purpose of this study was to gather, analyze, and report baseline data on the current utilization of distance education courses in Georgia's K-12 public school districts, and to determine what the perceived barriers are to the implementation and expansion of distance education programs across the state. Research question 2 was related to the extent of differences in utilization of distance education courses by the districts' metropolitan statuses, and was analyzed throughout the findings where appropriate.

#### *Demographic Profile of the Respondents*

The superintendents were asked to complete the survey, or to forward the survey to someone else in their district who could best answer the questions. The researcher included a question in the demographic section to solicit the job description of the survey respondent.

The respondents were asked to indicate the metropolitan status which best described their district. No definitions of the terms rural, suburban, or urban were provided for the respondents. Rather, these data were self-reported. The respondents indicated that their district could best be described as the following: rural (75.81%), suburban (17.74%), and urban (6.45%).

The researcher sought to determine the poverty level of each school district. In order to determine this information, the researcher asked the respondents to indicate the

approximate percentage of students in their district who are currently eligible for free or reduced lunch. The researcher divided the responses into four categories of equal ranges. Category 1 was 0-25%, category 2 was 26-50%, category 3 was 51-75%, and category 4 was 76-100%. Table 7 indicates the researcher's findings relevant to the poverty level of the respondents' districts, measured by the percentage of students eligible for free and reduced lunch.

Table 7

Poverty Level Measured by Percentage of Students Eligible for Free and Reduced Lunch

Category	Range	Frequency	Percentage	N = 56
1	0-25%	5	8.9	
2	26-50%	15	26.79	
3	51-75%	27	48.21	
4	76-100%	9	16.07	

The researcher also sought to determine the size of the school district, in terms of the numbers of students currently enrolled. The respondents indicated that their district fell into one of the following ranges: 2,500-9,999 students (50.82%), 1-2,499 students (29.51%), and 10,000 or more (19.67%).

The respondents were asked to indicate the approximate percentages of students who fell into various ethnic and racial categories. The researcher calculated the average reported percentage for each category: White (55.28%), African-American (37.87%),

Hispanic (4.67%), Multiracial (0.82%), Asian / Pacific Islander (0.8%), and American Indian / Alaskan (0.15%).

The researcher solicited the job description of the individuals who completed the survey. The respondents reported that their job description was one of the following: Superintendent (33.87%), Associate/Assistant/Area Superintendent (14.52%), Curriculum Director (12.9%), Technology Director (12.9%), Assistant Principal (8.06%), Principal (4.84%), Media Specialist (3.23%), Counselor (1.61%), Distance Education Supervisor (1.61%), and Instructional Technology Coordinator (1.61%). One respondent reported that they were the middle school media specialist, high school media specialist, and the district's distance education facilitator (1.61%).

#### *The Trend of Distance Education Utilization in the State of Georgia*

The first research question was related to the trend of distance education utilization in Georgia over the last five years. In order to answer this research question, the researcher included three related questions on the survey. First, the researcher listed the previous five school years, including the current school year, and each instructional level (elementary, middle, high), and asked the respondents to indicate which school year(s) and at which instructional level(s) their district had any students enrolled in distance education courses. This was question 1 on the survey. Table 8 indicates the researcher's findings relevant to distance education enrollments by school year and instructional level.

Table 8

## Distance Education Enrollment by School Year and Instructional Level

Grade Level	Prior to 2001-2002	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	p	<u>N</u>
PreK-5 (Elementary)	1	1	1	1	1	0	.89	5
6-8 (Middle)	1	2	3	4	6	6	.98	22
9-12 (High)	15	15	21	30	39	49	1.0	169

p = < .05

By far, most of the respondents who indicated their district had students enrolled in distance education courses chose grades 9-12 as the instructional level for which students were enrolled. For grades 6-8 and grades 9-12, the number of respondents indicating that their district had students enrolled in distance education courses increased from the “prior to 2001-2002” designation through the current school year, 2005-2006. For grades PreK-5, one respondent from a rural district indicated that their district had students enrolled in distance education courses prior to the 2001-2002 school year through the 2003-2004 school year, and a respondent from a suburban district indicated that their district had students enrolled in distance education courses during the 2004-2005 school year. For grades 6-8, the majority of the respondents were from suburban districts. For grades 9-12, the majority of the respondents were from rural districts. According to the results of the Pearson’s Chi-Square test, there were no statistically significant differences found in the responses based on the reported metropolitan status of the respondents ( $p = < .05$ ).

In question 2, the researcher asked the respondents to indicate whether or not their district had any students enrolled in Advanced Placement (AP) or college level distance education courses, in the past or present. Table 9 indicates the researcher's findings relevant to enrollments in Advanced Placement (AP) or college level distance education courses.

Table 9

Distance Education Enrollments in AP or College Level Courses

Variable	Frequency	Percentage	p = .19	N = 55
Never	13	23.64		
In the Past, but not Currently	13	23.64		
Currently, but not in the Past	6	10.9		
Currently and in the Past	23	41.82		

p = < .05

The majority of the respondents (41.82%) indicated that their district currently has students enrolled in distance education AP or college level courses, and has had students enrolled in the past. Thirteen (23.64%) of the respondents indicated their district had never had students enrolled in distance education AP or college level courses, and another 13 (23.64%) indicated their system has had students enrolled in distance education AP or college level courses in the past, but not currently. Only six (10.9%) of the respondents indicated their district currently has students enrolled in distance education AP or college level courses, but had not in the past. By far, more respondents from rural districts than suburban or urban districts indicated that they had enrollments in

distance education AP or college level courses in the past or present. According to the results of the Pearson's Chi-Square test, there were no statistically significant differences found in the responses across the three metropolitan statuses ( $p = < .05$ ).

In question 6, the respondents were asked to indicate the curriculum area(s), if any, that their district has ever had any students enrolled. Table 10 indicates the researcher's findings relevant to curriculum areas for distance education courses.

Table 10

Curriculum Areas in Which Students Have Been Enrolled in Distance Education Courses

Area	Frequency	Percentage	$p = .83$	$N = 192$
General Elementary Curriculum	1	.52		
English / Language Arts	37	19.27		
Social Studies or Social Sciences (including History)	44	22.92		
Computer Science	15	7.81		
Natural or Physical Science	30	15.62		
Mathematics	30	15.62		
Foreign Languages	23	11.98		
Other	12	6.25		

$p = < .05$

Based on the data collected from this question, social studies or social science courses (including history) were chosen more often than any other curriculum area

(22.92%). English/Language Arts was the next highest area selected (19.27%), followed by Natural/Physical Science and Mathematics (15.62% each). General elementary curriculum was the least chosen area (.52%). Respondents from a greater percentage of rural districts selected each of the areas, followed by suburban districts, then urban districts. However, the results of the Pearson's Chi-Square test revealed that there were no statistically significant difference in responses among respondents from rural, suburban, and urban districts ( $p = < .05$ ).

The researcher gave the respondents the opportunity to respond with any additional curriculum areas in which their district has students enrolled in distance education courses. Two respondents listed specific social studies courses (economics and psychology), and another respondent listed a specific foreign language course (Latin). The researcher grouped the remaining responses into the following categories: Electives, Career/Technical/Vocational, and Health/Physical Education (PE). The elective courses listed were art, photography, music critique and composition, music history, and parenting. Career/Technical/Vocational courses listed were business education, career exploration, first responder, foods, employability skills, and career awareness. Besides Health and PE, one respondent listed personal fitness as a course in which the district has had students enrolled in distance education courses.

#### *Reasons for Offering Distance Education Courses*

In order to determine the reasons for offering distance education courses, the researcher asked one question, question number 12 on the survey. The respondents were given a list of reasons and asked to indicate whether the reason was "not important",

“somewhat important”, or “very important”. Table 11 indicates the researcher’s findings relevant to reasons why school districts offer distance education courses.

Table 11

## Reasons for Offering Distance Education Courses

Variable	Not Important 1	Somewhat Important 2	Very Important 3	M	SD	p	<u>N</u>
Offering Courses not Available at School	2 (4%)	17 (34%)	31 (62%)	2.58	.58	.26	50
AP Courses	6 (12%)	18 (36%)	26 (52%)	2.40	0.70	.38	50
Growing Populations/ Limited Space	23 (47.92%)	17 (35.42%)	8 (16.67%)	1.69	0.75	.19	48
Reducing Scheduling Conflicts	8 (16.67%)	23 (47.92%)	17 (35.42%)	2.188	0.70	.39	48
Permitting Students to Repeat Courses Failed	9 (18%)	16 (32%)	25 (50%)	2.32	0.77	.27	50
Meeting Needs of Specific Students	4 (8.33%)	22 (45.83%)	22 (45.83%)	2.38	0.64	.92	48
Generating District Revenues	35 (72.92%)	9 (18.75%)	4 (8.33%)	1.35	0.64	.72	48

p = < .05

The respondents indicated that offering courses not available at the school was the most important reason for offering distance education courses (62%). The next most important reasons were offering AP or college level courses (52%), and permitting students to repeat courses failed (50%). The least important reason for offering distance education courses was generating district revenues (72.92%), followed by addressing growing populations and limited space (47.92%). According to the results of the Pearson's Chi-Square test, there were no statistically significant differences among the respondents' metropolitan statuses for this question ( $p < .05$ ).

*Entities or Programs Through Which Distance Education Courses are Available*

In order to determine the entities or programs through which distance education courses are available, the respondent included a Likert scale question on the survey, where the respondents were presented with a list of possible entities and programs. This was question 5 on the survey. The respondents were asked to what extent their district used these entities and programs to deliver distance education courses to their students, by choosing from the following responses: "major extent", "minor extent", and "not at all". The researcher's findings are presented in table 12 below.

Table 12

Entities or Programs Used to Deliver Distance Education Courses							
Variable	Major Extent 1	Minor Extent 2	Not at All 3	M	SD	p	<u>N</u>
Cyber Charter School in District	1 (3.33%)	3 (10%)	26 (86.67%)	2.83	0.46	.98	30

$p < .05$

Table 12 (*continued*)

## Entities or Programs Used to Deliver Distance Education Courses

Variable	Major Extent 1	Minor Extent 2	Not at All 3	M	SD	p	<u>N</u>
Other Schools in District	1 (3.33%)	5 (16.67%)	24 (80%)	2.78	0.50	.17	30
Your District (Centrally)	7 (22.58%)	2 (6.45%)	22 (70.97%)	2.48	0.85	.15	31
Another District or Schools in Another District	0 (0%)	5 (17.86%)	23 (82.14%)	2.82	0.39	.052	28
Georgia Virtual School	18 (41.86%)	20 (46.51%)	5 (11.63%)	1.70	0.67	.72	43
State Virtual School in Another State	1 (3.23%)	5 (16.13%)	25 (80.65%)	2.77	0.50	.39	31
Post- Secondary Institution	5 (15.15%)	15 (45.45%)	13 (39.39%)	2.24	0.71	.43	33
Independent Vendor	12 (34.29%)	12 (34.29%)	11 (31.43%)	1.97	0.82	.07	35

p = &lt; .05

Based on the data collected from the respondents, it was apparent that more respondents chose the Georgia Virtual School (41.86%) as the program in which their district relies on to a major extent in order to deliver distance education courses, online in

this case, to their students. The next most frequently chosen option was independent vendor(s) (34.29%), followed by districts where the distance education courses are centrally delivered (22.58%). Although one respondent indicated that a cyber (online) charter school delivered distance education courses in their district to a major extent, the majority of the respondents (86.67%) indicated that their district did not rely on this option at all. The next highest response in the “not at all” category was another district or schools in another district (82.14%), immediately followed by a state virtual school in another district (80.65%), and other schools in the district (80%). According to the results of the Pearson’s Chi-Square test, there were no statistically significant differences in responses reported across the metropolitan statuses ( $p < .05$ ).

#### *Extent of Appropriate Technology Use for Distance Education Courses*

The researcher sought to determine the extent of appropriate technology use for distance education courses in Georgia’s K-12 public school districts. This was achieved by asking several questions on the survey. The researcher used survey question 3 to determine which technologies are used as primary modes of instructional delivery for any distance education courses in which students are enrolled. The respondents were asked to check all of the technologies that applied to their district. The researcher’s findings are presented in table 13.

Table 13

## Technologies Used as Primary Modes of Delivery for Distance Education Courses

Variable	Frequency	Percentage	p = .53	N=71
Synchronous Internet Courses	18	25.35		
Asynchronous Internet Courses	38	53.52		
Two-way Interactive Video (i.e., GSAMS)	9	12.68		
One-way Pre-recorded Video	5	7.04		
Other	1	1.41		

p = < .05

Fifty-three percent of the respondents indicated that the distance education courses in which their students were enrolled were asynchronous courses taught via the Internet, i.e., online courses where the student and instructor did not necessarily have to be online at the same time. Synchronous Internet courses were the next most frequently chosen primary technology (25.35%). The researcher included an “other” response, which was chosen by one respondent. This respondent reported that their district uses “V-Brick” technology (<http://www.vbrick.com/>) to deliver distance education courses, which is a system that captures live, real-time video, and stores the video for later delivery over local networks and the Internet. According to the results of the Pearson’s Chi-Square test, there were no statistically significant differences in responses of technologies used across the metropolitan statuses ( $p = < .05$ ).

The researcher used question 4 on the survey to determine the technology used for the greatest number of distance education enrollments in the school districts. The respondents were given the same list of technologies in question 3 and were asked to choose only one response. The researcher's findings are presented in table 14.

Table 14

Technology Used for the Greatest Number of Distance Education Courses

Variable	Frequency	Percentage	p = .90	N=51
Synchronous Internet Courses	8	15.69		
Asynchronous Internet Courses	37	72.55		
Two-way Interactive Video (i.e., GSAMS)	3	5.88		
One-way Pre-recorded Video	3	5.88		
Other	0	0		

p = < .05

Of the 51 respondents who answered this question, the greatest percentage of respondents (72.55%) reported that asynchronous Internet courses are used for the majority of the distance education courses in their district. Only 15.69% of the respondents chose synchronous Internet courses, followed by 5.88% for both two-way interactive video and one-way pre-recorded video. According to the Pearson's Chi-Square test, there was no statistically significant differences among the responses and metropolitan statuses ( $p = < .05$ ).

The researcher sought to determine the location from which students participate in distance education courses. This was accomplished by asking the respondents to indicate to what extent (major, minor, or not at all) their students were accessing distance education courses. The choices were as follows: at home, at school, or some other location (e.g., public library). The researcher's findings are presented in table 15.

Table 15

Location Where Students are Accessing Distance Education Courses

Variable	Minor Extent 1	Major Extent 2	Not at All 3	M	SD	p	<u>N</u>
At Home	21 (46.67%)	14 (31.11%)	10 (22.22%)	1.76	0.8	.02	45
At School	16 (32%)	29 (58%)	5 (10%)	1.78	0.62	.76	50
Some Other location	16 (43.24%)	3 (8.11%)	18 (48.65%)	2.05	0.97	.28	37

p = < .05

The respondents indicated that their students were accessing distance education courses from school more so than home. Fifty-eight percent of the respondents indicated that their students were accessing distance education courses from school to a major extent. In contrast, 46.67% of the respondents indicated that their students were accessing distance education courses from home to a minor extent. Forty-three percent of the respondents indicated that their students accessed courses from some other location, but to a minor extent. The Pearson's Chi-Square test revealed a statistically significant difference ( $p = < .05$ ) in the location from which rural students access their courses compared to locations from which urban and suburban students access their courses. The

test showed that rural students access their courses from home to a much lesser extent than do students in urban and suburban districts.

The researcher sought to determine whether the districts provide or pay for a computer, Internet service provider, and/or tuition for all, some, or none of their students who access distance education courses from home. This was question 8 on the survey. The researcher's findings are presented in table 16.

Table 16

District Funding for Student Home Access of Distance Education Courses

Variable	Yes for All 1	Yes for Some 2	None 3	M	SD	p	N
Computer	2 (5%)	6 (14%)	34 (81%)	2.76	0.53	.79	42
Internet Service Provider	2 (5%)	2 (5%)	38 (90%)	2.86	0.47	.68	42
Tuition	7 (17%)	6 (15%)	28 (68%)	2.51	0.78	.57	41

p = < .05

Although some of the respondents indicated their district absorbed the cost of a computer, Internet service provider, and tuition for all or some students, the majority of the respondents indicated that their district did not pay for any of these costs. Of the items that are paid for by the district, tuition was the most frequently selected choice, with 17.07% respondents choosing “for all”, and 14.63% choosing “for some”. The results of the Pearson's Chi-Square test did not reveal any statistically significant differences in responses across the three metropolitan statuses ( $p = < .05$ ).

The researcher attempted to discern why the districts who paid for some or all of the items did so, and why those who did not made that choice. This question was asked in an open-ended format. For those respondents who indicated that funding was allocated for a computer, an Internet service provider, and/or tuition for some or all students, most of the justification for this practice was because students need the course for graduation. Other reasons for providing these items were related to students with special needs or circumstances, such as hospital or homebound students. For those respondents who indicated that their system does not pay for computers, an Internet service provider, or tuition for any students, the justification centered around the fact that the courses were supplemental for their students, or that there were no funds available for this practice.

#### *Barriers to Implementation and Expansion of Distance Education Programs*

The next research question was related to the implementation problems that may hinder the expansion of distance education courses in Georgia's public school districts. In order to answer this question, the researcher included several questions on the survey. The researcher used question 10 to ask the respondents if there is a need to expand the distance education program in their districts at this time. Table 17 indicates the researcher's findings relevant to the need for each district's distance education program to expand.

Table 17

## Need for Each District's Distance Education Program to Expand

Variable	Frequency	Percentage	p = .041	N=50
Yes	31	62		
No	19	38		

p = &lt; .05

Of the 50 respondents to this question, 62% indicated there was a need to expand their district's distance education program. Results of the Pearson's Chi-Square test revealed a statistically significant difference in responses among respondents from rural, suburban, and urban districts ( $p < .05$ ). Specifically, the percentage of respondents from rural districts who indicated there was a need to expand their district's distance education program was significantly higher than the percentage of respondents from suburban and urban districts reporting a need to expand. Moreover, the percentage of suburban respondents reporting there was not a need to expand was greater than the percentage of suburban respondents who reported a need to expand.

Through survey question 11, the researcher sought any additional comments the respondents may have about the needs of their school district in relation to the expansion of distance education, i.e., why there was or was not a need to expand their distance education programs. This question was presented in an open-ended format. Responses were analyzed and organized into the following categories: Student capabilities, meeting specific student needs, facilities, funding, and courses.

Regarding student capabilities, one respondent noted that their district may have a need to expand if student capability increases. The respondent further noted that students sometimes think that distance education courses are easier than face-to-face courses.

In the area of meeting specific student needs, respondents noted the following populations that would benefit from the expansion of distance education courses: hospital and/or homebound, students who have been suspended and/or placed in alternative school, students who have fallen behind, students who have scheduling conflicts or have transferred from other districts and/or states with different requirements, non-traditional students, special education students, districts where the student population is growing faster than the district can add classroom space, and for meeting specific needs outlined in the No Child Left Behind Act of 2001 (NCLB).

Regarding facilities, one respondent indicated their district would like to add a computer lab to their school in order to better serve students in distance education courses, but that this addition is currently cost prohibitive. Another respondent indicated that their district needs more funding for courses that require tuition, particularly in cases where the student cannot pay for these courses. Along these same lines, one respondent indicated their district office personnel would like to have more FTE-based slots through the Georgia Virtual School program

In terms of specific courses, respondents indicated they would like to expand their course offerings in the following areas: all AP courses, AP Calculus, advanced math, physics, remedial courses, and electives. One respondent indicated that students in their district have so many required courses that they cannot take many electives. The respondent stated that online course availability in required areas of study would lessen

the burden on student schedules so that students would be able to take additional electives.

The researcher sought to determine the specific perceived barriers to the expansion of distance education courses. Survey question 13 was designed to gather this information. Respondents were presented with a list of possible barriers, and were asked to indicate to what extent these were barriers for their district. The choices were “not at all”, “minor barrier”, “moderate barrier”, and “major barrier”. The major findings from are presented in table 18. The table is displayed in its entirety as Appendix F.

Table 18

Perceived Barriers to the Expansion of Distance Education Programs

Variable	Not at All 1	Minor Barrier 2	Moderate Barrier 3	Major Barrier 4	M	SD	p	<u>N</u>
Course Development and/or Purchasing Costs	8 (16%)	10 (20%)	15 (31%)	16 (33%)	2.8	1.1	.15	49
Restrictive Laws or Policies	23 (47%)	19 (39%)	5 (10%)	2 (4%)	1.71	.82	.14	49
Resistance to Change	21 (43%)	18 (37%)	7 (14%)	3 (6%)	1.84	.9	.03	49
Lack of Shared Vision for Distance Education in the District	16 (33%)	24 (49%)	8 (16%)	1 (2%)	1.89	.75	0	49

Table 18 (*continued*)

## Perceived Barriers to the Expansion of Distance Education Programs

Variable	Not at All 1	Minor Barrier 2	Moderate Barrier 3	Major Barrier 4	M	SD	p	<u>N</u>
Lack of Strategic Planning for Distance Education	19 (39%)	18 (37%)	9 (18%)	3 (6%)	1.92	.91	.08	49
Lack of Other Sources of Funding	5 (10%)	12 (24%)	15 (31%)	17 (35%)	2.9	1.0	.63	49
Difficulty in Convincing Stakeholders of Benefits	23 (47%)	15 (31%)	9 (18%)	2 (4%)	1.8	.89	.02	49
Lack of Support Staff Necessary to Develop Courses	15 (31%)	14 (29%)	10 (20%)	10 (20%)	2.31	1.12	.04	49

p = < .05

Based on the data gathered from this question, it was evident that the barriers receiving the highest average scores, those rated as a major barrier to the expansion of distance education, were related to cost and/or funding. These were course development and/or purchasing costs (32.65%), and lack of other sources of funding (34.69%).

Many of the variables were assigned the lowest score possible, rated by the respondents as not a barrier at all. These include lack of technical infrastructure,

restrictive federal, state, or local laws or policies, resistance to change, lack of strategic planning for distance education, lack of technical support, difficulty in convincing stakeholders of benefits, and lack of support staff necessary to develop courses.

Variables which received the highest average scores as minor and moderate barriers included lack of distance education training for personnel in the district, increased time commitment, slow pace of implementation, lack of shared vision for distance education in the district, concerns about course quality, concerns about receiving funding for distance education courses based on student attendance, and lack of grants. Results of the Pearson's Chi-Square test revealed that there were some statistically significant differences between respondent choices across the three metropolitan statuses. Rural respondents indicated that the following variables were not a barrier, were a minor barrier, or were a moderate barrier, at a statistically significant higher rate than suburban or urban respondents: organizational resistance to change, lack of shared vision for distance education in the district, lack of strategic planning for distance education, difficulty in convincing stakeholders of the benefits of distance education, and lack of support staff necessary to develop courses ( $p = <.05$ ).

In order to determine the perceived barriers to the implementation of distance education programs, and to determine the percentage of respondents who did not have any students currently enrolled in distance education courses, the researcher developed a question regarding the barriers to the implementation of distance education programs. Only those individuals who represent districts with no current distance education enrollments were asked to respond. This was survey question 14. The participants were presented with a list of possible reasons, considered as barriers to implementation, as to

why their district did not currently have any enrollments. They were asked to choose from the following: “not at all”, “minor reason”, “moderate reason”, and “major reason”.

The researcher’s findings are presented in table 19.

Table 19

Reasons Why Districts Do Not Have Students Enrolled in Distance Education Courses

Variable	Not at All 1	Minor Reason 2	Moderate Reason 3	Major Reason 4	M	SD	p	<u>N</u>
Lack of Technical Infrastructure	8 (40%)	5 (25%)	3 (15%)	4 (20%)	2.2	1.2	.59	20
Lack of Training for Personnel	8 (38%)	5 (24%)	7 (33%)	1 (4.76%)	2.1	.97	.54	21
Lack of Technical Support	10 (50%)	3 (15%)	4 (20%)	3 (15%)	2.0	1.2	.87	20
Lack of Grants	6 (30%)	3 (15%)	7 (35%)	4 (20%)	2.5	1.2	.20	20
Lack of Other Sources of Funding	5 (25%)	0 (0%)	7 (35%)	8 (40%)	2.9	1.2	.51	20
Increased Time Commitment	5 (24%)	3 (14%)	10 (48%)	3 (14%)	2.5	1.0	.66	21
Resistance to Change	14 (70%)	3 (15%)	2 (10%)	1 (5%)	1.5	.89	.98	20
Slow Pace of Implementation	7 (35%)	4 (20%)	6 (30%)	3 (15%)	2.3	1.1	.69	20

Table 19 (*continued*)

Reasons Why Districts Do Not Have Students Enrolled in Distance Education Courses								
Variable	Not at All 1	Minor Reason 2	Moderate Reason 3	Major Reason 4	M	SD	p	<u>N</u>
Lack of Shared Vision	10 (48%)	6 (29%)	3 (14%)	2 (10%)	1.9	1.0	.73	21
Lack of Strategic Planning for Distance Education	6 (29%)	6 (29%)	6 (29%)	3 (14%)	2.3	1.1	.57	21
Difficulty in Convincing Stakeholders of Benefits	12 (60%)	4 (20%)	3 (15%)	1 (5%)	1.7	.93	.59	20
Lack of Support Staff to Develop Courses	6 (30%)	3 (15%)	7 (35%)	4 (20%)	2.5	1.2	.68	20

p = < .05

The purpose of this question was twofold. One purpose was to determine the percentage of respondents from districts without any students currently enrolled in distance education courses. Twenty-one of the respondents (32%) reported that their districts did not currently have any students enrolled in these types of courses. The second purpose of the question was to determine what these respondents perceived as the major reason(s) why their district did not have any students currently enrolled in distance education courses. The researcher ascertained from the data gathered with this question that a lack of other sources of funding (besides grants) was the variable given the highest

ranking (40%) in the “major reason” category. In contrast, organizational resistance to change was the variable chosen the most often in the “not at all” category. There were no statistically significant differences found in the percentages of respondents across the three metropolitan statuses.

The researcher gave the participants the opportunity to make any additional comments or provide any additional information they wanted to share regarding the barriers to implementing and/or expanding the distance education program in their district. An open-ended question, #15, was included in the survey for this purpose. The researcher analyzed the data from this question and organized the responses into three categories: infrastructure, student needs, and funding.

Two respondents commented on issues related to infrastructure. Specifically, one respondent stated that their district was currently experiencing a lack of available computer equipment. The other respondent indicated that their district suffered from a lack of technical support necessary to sustain a distance education program.

Several respondents made comments related to students and their needs. One respondent stated that student maturation was a barrier to the implementation and expansion of distance education courses. Another respondent stated that distance education has worked better for their “average” to “above average” students than for their “below average students”. However, it is most often those students in the “below average” category who need additional opportunities for credit recovery. In terms of specific courses, two respondents commented on Advanced Placement (AP) courses by indicating that their students who had taken online AP courses had not performed as well on the AP exam as those students who took the same courses in a traditional setting.

Another respondent indicated that they would like more data on the performance of students who have taken AP courses online before they would be comfortable allowing their own students to participate in these courses. Another respondent indicated that if more academic and technical/career/vocational courses were offered, their district would be more likely to participate.

Other respondents indicated that funding issues are the barriers to implementation and expansion of distance education courses in their district. Specifically, the loss of FTE funding and student tuition costs made distance education courses prohibitively expensive for these districts. Other districts reported that they need funding to support a teacher who is assigned to be the monitor or facilitator for the students enrolled in distance education courses.

Finally, two respondents added that their districts have not explored the option of distance education courses. One of these two respondents indicated that they acknowledged the benefits of having this option available to their students.

### Summary

The researcher investigated the current utilization of distance education courses in Georgia's K-12 public school districts, as well as the perceived barriers to the implementation and expansion of distance education programs. Data were collected from a survey containing 20 items that were related to the following areas: (1) the trend of distance education utilization in the State of Georgia over the last five years, (2) the extent of the difference of distance education utilization by metropolitan status (urban, suburban, rural), (3) reasons that school districts offer distance education courses, (4) the entities or programs through which distance education courses are offered, (5) the extent

of appropriate technology use for distance education, and (6) the major implementation problems that may hinder the expansion of distance education in Georgia's K-12 public school districts.

The survey was developed online and was carefully examined through a pilot study by five superintendents, who were chosen as a random stratified sample. The researcher then sent the surveys to the remaining 175 superintendents and asked them either to complete the survey, or to forward the survey to someone else in the district who could best answer the questions. Sixty-five of the surveys were received, for a return rate of 37.14%. Procedures common to quantitative research were used to analyze the survey responses. Descriptive statistics such as frequencies, means, standard deviations, and percentages were reported. In addition, the researcher calculated the Pearson's Chi-Square test to determine if statistically significant differences existed among responses across the three metropolitan statuses (rural, suburban, and urban).

The first research question was related to the trend of distance education utilization across the last five school years and prior to the 2001-2002 school year. The researcher analyzed the frequencies of responses from each school year, as well as the instructional level (elementary, middle, and high). The researcher determined that the majority of enrollments in distance education courses were at the high school level, and these have increased over the last five school years. No statistically significant differences were found among the three metropolitan statuses for this question.

Enrollments in AP or college level distance education courses were also examined. The researcher found that the majority of respondents who indicated their district had AP or college level distance education course enrollments in the past or

present were from rural school districts. Again, no statistically significant differences were found among the three metropolitan statuses for this question.

The researcher included another survey item for this research question, which was related to the curriculum areas in which students have been enrolled in distance education courses. More respondents chose social studies or social sciences (including history) than any other curriculum area. More rural respondents selected every curriculum area than did respondents from suburban and urban districts, but there was no statistically significant difference among responses across the three metropolitan statuses. The participants were given the opportunity to respond to an open-ended question by indicating any additional curriculum areas in which their district has had students enrolled in distance education courses. In addition to Economics and Psychology, Latin was also reported as a course in which students had been enrolled through distance education. The remaining categories of curriculum areas included electives, Career/Technical/Vocational courses, and Health/Physical Education (PE).

The second research question was designed to determine whether the extent of distance education utilization differed across the three metropolitan statuses. In order to answer this question, the researcher calculated the Pearson's Chi-Square test where appropriate. The results of this question are presented in the sections for each of the other research questions.

The third research question was related to the reasons why districts offered distance education courses. Sixty-two percent of the respondents indicated that offering courses not available at school. This was the highest percentage of responses from any of the choices listed. The ability to offer AP or college level courses was the next most

frequent choice of the respondents. There was no statistically significant difference reported among the three metropolitan statuses.

Research question four was related to the entities or programs through which distance education courses are offered. The researcher included a Likert-scale question to collect data for this question. The respondents were presented with a list of entities and programs, and were asked to select the extent to which their district relies on the program or entity to deliver distance education courses to their students. More respondents chose the Georgia Virtual School program as the program on which their district relies than any other program or entity. Independent vendors were the next most frequent choice. There were no statistically significant differences found among the responses by metropolitan status.

The fifth research question was related to the extent of appropriate technology use for distance education in Georgia's public school districts. The researcher sought to determine which technologies are being used to deliver any distance education courses, and which technology is used to deliver the greatest number of distance education courses in the districts. The majority of respondents indicated that asynchronous Internet courses were one of the technologies used, and these courses were also the most frequently used technology to deliver distance education courses. No statistically significant differences were found among the metropolitan status designations.

The researcher also sought to determine the location from which students are accessing distance education courses. The majority of the respondents indicated that students were accessing their courses from school rather than home or some other location. A statistically significant difference was found among respondents from rural

districts, in that rural students are more likely to access their distance education courses from school than from home.

In order to determine if the districts absorb the cost of a computer, Internet service provider, or tuition, the researcher included a survey item in which these three choices were displayed, and the respondents were asked to indicate whether their district pays for these items for all students, some students, or no students. The majority of respondents indicated that their district did not pay for any of these items. Of the items that were paid for by certain districts, tuition was the most frequently selected choice. Rural districts provided some or all of the items for some or all of the students at a higher percentage than did suburban and urban districts. There were no statistically significant differences found in the responses to this question across the three metropolitan statuses. In an effort to gain a deeper understanding of why districts did or did not pay for some or all of the items, the researcher included an open-ended question on the survey in which the respondents were asked to explain why they did or did not pay for the items. The majority of the justification for paying for some items was that the student(s) needed the course(s) for graduation. The main reason for not paying for any or all items was that the courses were supplemental, or there were no funds available.

The sixth and final research question was related to the perceived barriers to the implementation and expansion of distance education programs in Georgia's public school districts. The researcher asked the respondents if there was a current need to expand the distance education program in their district. Sixty-two percent of the respondents to this question indicated that there was a need to expand. A statistically significant difference was found in responses from rural district respondents compared to respondents from

suburban and urban districts. Specifically, rural respondents were more likely to indicate a need to expand distance education courses in their district than were suburban or urban respondents. The researcher also gave the respondents the opportunity to respond to an open-ended question by offering any additional comments on the specific need(s) of their school district in relation to the expansion of distance education courses. Responses to this question were grouped into five categories: student capabilities, meeting specific student needs, facilities, funding, and courses.

Next, the researcher included a survey question in which the respondents were presented with a list of possible barriers to the expansion of distance education courses. Costs and/or funding were the most frequently chosen “major” barrier. The most frequently chosen “minor” or “moderate” barriers were lack of distance education training for personnel in the district, increased time commitment, slow pace of implementation, lack of shared vision for distance education in the district, concerns about course quality, concerns about receiving funding for distance education based on student attendance, and lack of grants. For this question, there were some statistically significant differences found in the responses. Namely, rural districts were more likely to respond that the following variables were not a barrier, were a minor barrier, or were a moderate barrier to the expansion of their distance education program: organizational resistance to change, lack of shared vision for distance education in the district, difficulty in convincing stakeholders of benefits of distance education, and a lack of support staff necessary to develop courses.

The next survey item for this research question was related to reasons why districts do not have students enrolled in distance education. The respondents were

presented with a list of possible reasons, and were asked to choose the extent to which each choice was a reason why their district did not have any current enrollments. Respondents from districts with no current enrollments were the only individuals who were asked to respond to this question. About one-third of the total number of survey respondents indicated that their district did not currently have any enrollments in distance education courses. Lack of other sources of funding (besides grants) was chosen the most number of times as a major reason why districts did not currently have any distance education enrollments. There were no statistically significant differences found among the three metropolitan statuses.

The researcher solicited open-ended comments from the participants regarding any additional information they wanted to share about the barriers to implementing and/or expanding distance education courses in their district. Infrastructure, student needs, and funding issues were the three categories into which the responses were grouped. An analysis and discussion of the research findings, as well as conclusions and implications of the findings, are presented in Chapter V.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND IMPLICATIONS

In recent years, interest in the utilization of distance education courses has increased, particularly with those courses taught online. Although distance education courses have been available to postsecondary students for many years, the availability and use of these courses in public schools is a relatively new phenomenon. To date, there has been only one national sample study conducted on the utilization of distance education courses in public elementary and secondary students. As more public school students in Georgia begin to participate in distance education courses, many issues will need to be addressed by the state department of education and the individual districts. Through this study, the researcher hoped to fill this gap in understanding the current utilization of distance education and its inherent barriers to implementation expansion in Georgia's K-12 public school districts.

#### Summary

The researcher's purpose was to study the current utilization of distance education courses in Georgia's public school districts, and to determine the barriers to the implementation and expansion of distance education programs. A descriptive research design was used by the researcher to address the following research questions:

1. What has been the trend of distance education utilization in the State of Georgia over the last five years?
2. To what extent does utilization of distance education differ by the district's metropolitan status (urban, suburban, rural)?

3. For what reasons do Georgia's K-12 public school districts offer distance education courses?
4. Through what entity(ies) or programs are distance education courses available? (e.g., statewide virtual school, virtual school operated by a single district, vendor, etc.)
5. What is the extent of appropriate technology use for distance education in Georgia's K-12 public school districts? (Internet, two-way interactive video, etc.)
6. What are major implementation problems that may hinder the expansion of distance education in Georgia's K-12 public school districts?

The researcher used an online survey in order to gather, analyze, and report the data. The survey was sent to 175 of the 180 Georgia public school superintendents, who were asked to complete the survey, or to forward the survey to someone in their district who could best answer the questions. The researcher sent a letter of introduction along with a link to the online survey to each superintendent. Two weeks after the initial message, the researcher sent a reminder, which served to thank those superintendents who responded, and to remind those who had not yet responded to do so. Another reminder was sent approximately one week later, in an effort to gather the maximum number of surveys for the study. Of the 175 surveys, 65 were completed, for a return rate of 37.14%.

#### Analysis of Research Findings

The researcher was able to conclude that the majority of the distance education enrollments in Georgia are at the high school level, and that these enrollments have

increased each school year since 2001-2002. The majority of the respondents indicating that their district had students enrolled in distance education AP or college prep courses were from rural districts. Social studies (including history) was the most frequently chosen area of the curriculum in which districts had students enrolled in distance education courses.

The majority of the respondents indicated that the most important reason their district offers distance education courses is so that courses not offered at the school can be made available to students. The offering of AP and college level courses was also cited as a reason that students were enrolled in these courses.

The Georgia Virtual School program was chosen as the program or entity which is used the most to enroll students in distance education courses. Independent vendors were the next most frequently chosen program or entity.

Asynchronous Internet courses were the most frequently reported primary technology used to deliver any distance education courses, and were also the most frequently reported technology used to deliver the greatest number of distance education courses in the districts. The majority of the respondents indicated that students were accessing their distance education courses from school rather than home or some other location. Rural students were more likely to access their courses from school than were their suburban or urban counterparts. The majority of the respondents indicated their district did not pay for computers, an Internet service provider, or tuition for students to take distance education courses.

The majority of the respondents indicated there was a need to expand the distance education program in their district. Specific needs in relation to the expansion of distance

education were gathered through an open-ended question, and grouped into the following categories: student capabilities, meeting specific student needs, facilities, funding, and courses. Costs and/or funding were chosen as the most frequent “major” barrier to the expansion of distance education courses. Lack of funding was chosen the most number of times as a barrier to the implementation of distance education programs, i.e. as a reason why districts do not have any current enrollments in distance education courses. Approximately one-third of the 65 survey participants indicated that their district did not currently have any students enrolled. Infrastructure, student needs, and funding issues were the three categories into which open-ended responses were grouped on the final question, regarding additional information the respondents wanted to share about the barriers to implementing and/or expanding distance education courses in their district.

#### Discussion of Research Findings

The researcher gathered data from public school districts in Georgia regarding their current utilization of distance education courses, and the perceived barriers to the implementation and expansion of distance education courses. As a result of the study, the researcher was able to provide current data for the state of Georgia which was not previously available, so that those involved with the planning and administration of distance education programs in Georgia’s public school districts would benefit. The following discussion of research findings is presented in response to the six research questions listed in Chapter IV and two of the major themes in the review of related literature in Chapter II. In the review of related literature, the researcher presented a synthesis of research from the following themes: student learning in distance education, characteristics of online learners, student satisfaction with distance education, utilization

of distance education courses in public elementary and secondary schools, and the barriers to the implementation and expansion of distance education programs. Although the researcher did not include any research questions in the study that pertained to the first three areas mentioned above, these areas helped give significance to the study and served as useful background information.

#### *Utilization of Distance Education Courses in Public Elementary and Secondary Schools*

The first research question involved the trends in distance education utilization across the state of Georgia over the last five years. The researcher found that as the instructional level moved from elementary grades to the high school grades, the numbers of students enrolled in distance education courses increased. This is consistent with the findings of Clark (2001) and Setzer and Lewis (2005). The researcher found that a greater percentage of respondents from rural districts reported that they had students enrolled in distance education courses, which is also consistent with the findings of Setzer and Lewis.

The researcher found that respondents in rural districts reported a greater percentage of enrollments in AP and college level distance education courses as compared to respondents from suburban and urban districts. This is consistent with the findings of Clark (2001), Setzer and Lewis (2005), and Zucker et al. (2003). The researcher found that social studies or social science courses (including history) courses accounted for the greatest percentage of distance education enrollments. This is consistent with the findings of Setzer and Lewis.

The second research question involved the differing extent, if any, of distance education utilization across rural, suburban, and urban districts. In order to answer this

question, the researcher conducted a cross-tabulation, using the Pearson's Chi-Square test, with the results of each quantitative survey question and the reported metropolitan statuses. Throughout the discussion of the research findings, the researcher indicated if any significant differences were found based on the self-reported metropolitan status of each respondent.

The third research question was related to the reasons that Georgia school districts offer distance education courses. The researcher found that the ability to offer courses not otherwise available at the school was the most important reason reported for having distance education courses. This finding is consistent with the findings of Setzer and Lewis (2005). Barker and Wendel (2001) found that many rural schools could not offer certain courses due to low enrollment. In addition, Chaney (2001), Doherty (2002), Kennedy-Manzo (2002), and Trotter (2002) all found that distance education courses served as ways to help increase course offerings at schools that could not afford to do so otherwise. Respondents in this research study reported that offering AP and/or college level courses was the next most important reason for offering distance education courses. This differs from the findings of Setzer and Lewis, who reported that the next most frequently cited reason was meeting the needs of a specific group of students.

Through the fourth research question, the researcher sought to determine which entities or programs were responsible for delivering the distance education courses in the school districts. The researcher found that a greater percentage of respondents in Georgia districts reported that the Georgia Virtual School program (a statewide virtual school) was responsible for delivering the distance education courses in their district. Setzer and Lewis found that the majority of districts relied on a post-secondary institution to deliver

the courses. This finding of Setzer and Lewis is inconsistent with this researcher's finding. Respondents from Georgia districts indicated that an independent vendor was the second most frequently used entity to deliver distance education courses. Setzer and Lewis (2005) and Clark (2001) identified possible entities or programs that delivered distance education courses. Setzer and Lewis found that the second most frequently chosen entity was another school district. The findings of Setzer and Lewis were inconsistent with the findings of this researcher in relation to this question.

The fifth research question involved the use of technology to deliver distance education courses. Asynchronous Internet courses were the technology chosen most often by Georgia respondents as the technology most frequently used to deliver distance education courses to their students. In contrast, Setzer and Lewis (2005) indicated that a greater percentage of respondents chose two-way interactive video when asked to indicate which technology was used most often to deliver distance education courses in their district. Asynchronous Internet courses received the next highest frequency of responses in the Setzer and Lewis study.

The researcher also sought to determine the location from which students are accessing their distance education courses. Findings indicated that students accessing their courses at school represented a larger percentage as compared to students accessing their courses from home or from another location. This is consistent with the findings of Setzer and Lewis (2005). In addition, the researcher found that the majority of the students accessing distance education courses at school were from rural districts. This finding was also consistent with the findings of Setzer and Lewis.

The researcher found that the majority of school districts did not pay for a computer or Internet service provider for students who were accessing distance education courses from home. The researcher's findings are consistent with the findings of Setzer and Lewis (2005). In fact, the majority of the respondents from Georgia also indicated that they do not absorb the cost of tuition.

*Barriers to the Implementation and Expansion of Distance Education Programs*

The sixth research question was related to the perceived barriers to the implementation and expansion of distance education programs in Georgia's public school districts. In order to determine the barriers to implementation and expansion, the researcher asked several questions. First, the researcher asked the respondents if there was a current need to expand distance education courses in their district. The majority of the respondents indicated that there was a need to expand. This researcher's findings are consistent with the research of Setzer and Lewis (2005).

When presented with a list of possible barriers to the expansion of distance education courses, the greatest percentage of respondents in this study chose costs and/or funding as a major barrier. Setzer and Lewis (2005) found the same to be true in the national sample study. However, there were major differences between the variables chosen as "moderate" or "minor" barriers in the Setzer and Lewis study as compared to the Georgia study. Respondents in the Georgia study indicated that lack of distance education training for personnel in the district was the next most frequently chosen barrier. In contrast, Setzer and Lewis indicated that course development and/or purchasing costs were the most frequently chosen to be moderate or minor barriers.

Finally, the researcher sought to determine the percentage of respondents indicating that their district did not have any distance education enrollments. This was roughly one-third of the responding districts, which was the exact opposite of the findings of Setzer and Lewis (2005), which indicated that approximately two-thirds of the public school districts in the United States did not have students enrolled in distance education courses.

### Conclusions

The researcher has concluded from the study that:

1. Distance education enrollments are increasing in Georgia's public school districts, especially at the high school level.
2. School districts in Georgia are using distance education courses to meet a variety of needs.
3. The majority of rural school districts in Georgia that have students enrolled in distance education courses have some students enrolled in AP or college level distance education courses.
4. Social studies courses (including history) represent the curriculum area in which the greatest numbers of Georgia students are enrolled in distance education courses.
5. The majority of rural districts in Georgia offer distance education courses to their students because the courses are not offered in the regular school setting.
6. Most of the rural school districts in Georgia with students enrolled in distance education are using the Georgia Virtual School program as the course provider.

7. Asynchronous Internet-based (online) courses, e.g. the courses taught by the Georgia Virtual School, are used for the greatest number of distance education courses in Georgia's public schools
8. Most of the students from rural districts in Georgia who are enrolled in distance education courses are accessing their courses from school.
9. The majority of school districts in Georgia do not pay for a computer, Internet service provider, or tuition for students who are accessing online distance education courses from home.
10. For those Georgia districts that have a distance education program, especially those that are rural, most are experiencing a need to expand their program.
11. Costs and/or funding issues are the most frequently noted major barriers to the implementation and expansion of distance education programs in Georgia.

#### Implications

The researcher's purpose was to gather and report current utilization data on distance education courses in Georgia's public school districts, and to determine the perceived barriers to the implementation and expansion of distance education programs. The research findings presented are beneficial to several individuals, as well as several groups. The individuals include Dr. Michael Hall, the Georgia State Department of Education Deputy Superintendent for Information Technology, as well as Dr. Kristie Clements, the program director of the Georgia Virtual School, and their respective staffs. The groups include the Georgia legislature, undergraduate and graduate programs in education at colleges and universities, local and state boards of education, curriculum experts, and technology coordinators, in their efforts to work with distance education,

particularly online education, in public school districts. The researcher determined that both the baseline data regarding the current utilization of distance education courses and the data on perceived barriers to the implementation and expansion of distance education programs would be helpful to the Georgia Department of Education, particularly as it pertained to the development and administration of the Georgia Virtual School (M. Hall & K. Clements, personal communication, April 8, 2005). In addition, the researcher believes that the data will aid all of Georgia's distance education stakeholders in making important decisions that will guide the future of K-12 distance education research, planning, development, and implementation.

Data revealed through this study led to the conclusion that the numbers of distance education enrollments in Georgia are on the rise, and online courses are the main vehicle being used to deliver these courses. Therefore, those individuals and groups associated with providing the capacity for increased student enrollments in online courses will benefit from the data. These include individuals and groups at the state and local levels. Individual school districts will benefit from knowing the current state of distance education utilization, including barriers to the implementation and expansion of distance education programs in other districts. District level personnel may choose to use the results in their system and/or school technology plans in their justification to implement or expand distance education programs.

Because costs and/or lack of funding were the most frequently cited barriers to the implementation and expansion of distance education programs, the Georgia legislature should be aware of this problem. The researcher's findings have a direct impact on educational policy in the state of Georgia, and serve as proof that changes should be

made in order to ease the financial burden so that all school districts who wish to participate may do so.

Finally, the study will enrich the literature in the area of distance education because it is the first study of its kind in the state of Georgia, and serves as a comparison to national estimates provided in the Setzer and Lewis (2005) landmark study. A subsequent and similar national study is currently in progress. When released, the results of the new study should be compared to the Setzer and Lewis study, and should also serve as a further comparison for this study.

#### Recommendations

1. Lawmakers in Georgia should search for ways to provide free seats in online courses for rural districts and students who cannot afford them otherwise.
2. Further research should include actual numbers of enrollments in distance education courses in order to gain a better sense of trends in enrollment.
3. Further research should be conducted on enrollments in distance education courses based on racial and ethnic categories.
4. Further research should be conducted on the use of distance education courses with career/technical preparatory students and special education students.
5. The study should be replicated in several years to determine if any significant changes have occurred in relation to the utilization of distance education courses and the perceived barriers to the implementation and expansion of distance education programs.
6. Similar studies should be conducted in other states, possibly incorporating qualitative research methods.

### Dissemination

The researcher' will be shared with Dr. Michael Hall, the Deputy Superintendent of Instructional Technology for the Georgia Department of Education, Dr. Kristie Clements, the principal and program director of the Georgia Virtual School, each of the study participants who requested a copy of the results, and the member districts of the Georgia eLearning Consortium. The researcher will attempt to present the research findings at the conference hosted by the Georgia Educational Technology Consortium (GaETC), the National Educational Computing Conference (NECC), and the Virtual School Symposium (VSS). In addition, the researcher will attempt to publish the research findings in several journals, including, but not limited to, the Journal for Research on Technology in Education (JRTE). Copies of the dissertation will be on file at the Georgia Southern University Library and will be available electronically through the doctoral dissertations search engine on Georgia Library Learning Online (GALILEO).

### Concluding Thoughts

For most of his academic and professional career, the researcher has found the concept of distance education, where students and teachers are separated by time and/or geography, to be quite fascinating. As a current facilitator of high school students enrolled in online courses, the researcher is thankful that the students in his district have the opportunity to participate, because it has helped many of them graduate in a timely manner, particularly those who have been assigned to the district alternative school for behavior problems. Although the researcher does not believe that any form of distance

education will ever fully replace traditional classroom instruction, he does believe that distance education can be an appropriate and viable alternative.

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APPENDICES

## APPENDIX A

## LETTER TO PARTICIPANTS



**COLLEGE OF EDUCATION**  
**DEPARTMENT OF LEADERSHIP,**  
**TECHNOLOGY AND HUMAN**  
**DEVELOPMENT**

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Dear Superintendent:

Your help is needed in providing vital information for a research study, the results of which would be highly beneficial to your district, as well as all school districts in the state of Georgia. Your participation will be rewarded by a full report of the aggregate data obtained from the study. The report could be used in your district and school technology plans, your justification for funding related to distance education (including online education) initiatives in your district, and in your plans to incorporate distance education at your alternative school.

I am the online learning facilitator for the Columbia County, Georgia school district, and a doctoral student in Educational Administration at Georgia Southern University. For my dissertation, I am conducting a statewide survey regarding distance (including online) education programs in Georgia's K-12 public school districts. The purpose of the study is to gather baseline data regarding the utilization of distance education courses, and to determine the perceived barriers to the implementation and expansion of distance education programs. The title of my study is: "Distance Education in Georgia's Public School Districts: Baseline Data on Utilization and the Perceived Barriers to Implementation and Expansion." The results of the study will provide educators with descriptive data concerning distance education programs in Georgia.

The survey is online and may be accessed by clicking on the web address at the end of this message. If you feel that another individual in your district is more familiar with the district's distance education program and could better answer the survey questions, please feel free to forward this message to that individual and request that they complete the survey. Please ensure that only one person from your district responds to the survey, which consists of 20 questions and should not take any longer than 20 minutes to complete.

Although there is no penalty should you decide not to participate, your assistance with this study would be greatly appreciated. Any of the survey items may be left blank.

By completing this survey you will have helped to provide valuable information about how distance education courses are currently being utilized across the state, as well as the barriers that exist to the implementation and expansion of these programs.

If you choose to participate, I would appreciate it if you would complete the survey by Thursday, March 23, 2006. Your responses to survey items will remain confidential. Completion of the survey implies that you agree to participate and your data may be used in this research. If you would like a copy of the aggregated results of the study, please indicate so in a reply to this message, and I will send the results to you as soon as the study is completed. Individuals in the Office of Instructional Technology, of the Georgia Department of Education, will also receive a copy of the aggregated results. Please see the attached letter from Dr. Kristie Clements, program director of the Georgia Virtual School, in support of this study.

If you would like to contact me, my e-mail address is [william\\_j\\_tankersley@georgiasouthern.edu](mailto:william_j_tankersley@georgiasouthern.edu). My mailing address is 2645 Louisville Road, Appling, Georgia 30802 and my telephone number is (706) 541-9721. You may also contact my faculty advisor, Dr. James Burnham, at Georgia Southern University, P.O. Box 8131, Statesboro, Georgia 30460 or by telephone at (912) 681-5567. If you have any questions or concerns about your rights as a research participant in this study, you may also contact the IRB Coordinator at the Office of Research Services and Sponsored Programs at (912) 681-5465.

Thank you for your assistance in this study regarding distance education courses in Georgia's K-12 public school districts. The contribution of your time and expertise is very much appreciated.

Please click on the web address below to access the survey:

<http://www.questionpro.com/akira/TakeSurvey?id=365315>

Sincerely,

William Joseph Tankersley

-----  
Georgia Southern University  
<http://www.GeorgiaSouthern.edu/>

APPENDIX B  
LETTER OF SUPPORT



**Georgia Department of Education**  
**Office of the State Superintendent of Schools**  
**Twin Towers East**  
**Atlanta, Georgia 30334-5001**  
[www.doe.k12.ga.us](http://www.doe.k12.ga.us)

Kathy Cox  
State Superintendent of Schools

December 1, 2005

Georgia District Superintendents

Re: Dissertation Study Survey of William Tankersley

Dear Sir or Madam:

In order to better serve your local districts and schools, I am asking for your participation in responding to the attached survey by Georgia Southern University doctoral student William Tankersley. Mr. Tankersley's dissertation focuses on the current utilization of distance education courses in Georgia's public K-12 school districts, and the barriers to the implementation and expansion of those programs. Your individual responses will be kept confidential. However, the aggregate data will be shared with the Georgia Department of Education's Virtual School program to help determine needs and focus as the program expands and grows over the next few years.

The Georgia Virtual School program serves students and has expanded its course offerings to over 84 core curriculum, AP, and elective courses, including SAT Preparation, each meeting QCC/GPS or College Board standards. These classes are offered in both block and semester formats on various schedules to meet the differing course offering and scheduling needs of local school districts.

Regards,

A handwritten signature in cursive script that reads "Kristie Clements".

Kristie Clements  
Principal / Program Director  
Georgia Virtual School  
Office of Instructional Technology

Superintendent Kathy Cox  
Georgia Department of Education  
205 Jesse Hill Jr. Drive  
Atlanta, GA 30324  
404.657.0574

An Equal Opportunity Employer

## APPENDIX C

## PERMISSION TO USE THE SETZER AND LEWIS SURVEY

From: Greene, Bernard [Bernard.Greene@ed.gov]  
Sent: Thursday, March 10, 2005 10:02 AM  
To: William J. Tankersley  
Subject: RE: Study on distance education courses

The study, including questionnaire (see last few pages of report), is in the public domain. Feel free to use it.

Good luck.

Bernie Greene

-----Original Message-----

From: William J. Tankersley [mailto:wjtank@comcast.net]  
Sent: Wednesday, March 09, 2005 9:04 PM  
To: Greene, Bernard  
Subject: Study on distance education courses

Dear Sir,

I am a doctoral student in the department of Educational Leadership at Georgia Southern University. With great interest, I have just read the study released on March 2 of this year titled "Distance Education Courses for Public Elementary and Secondary School Students: 2002-2003." I would like to ask for permission to use some of the questions from the associated survey in my dissertation. Please let me know if this is permissible.

Thank you,

William J. Tankersley  
Appling, GA

## APPENDIX D

## INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL

Georgia Southern University Office of Research Services & Sponsored Programs <b>Institutional Review Board (IRB)</b>		
Phone: 912-681-5465		Administrative Annex
		P.O. Box 8005
Fax: 912-681-0719	Ovrsight@GeorgiaSouthern.edu	Statesboro, GA 30460

**To:** William J. Tankersley  
2645 Louisville Road  
Appling GA 30802

**CC:** Dr. James F. Burnham  
P.O. Box 8131

**From:** Office of Research Services and Sponsored Programs  
Administrative Support Office for Research Oversight Committees  
(IACUC/IBC/IRB)

**Date:** February 23, 2006

**Subject:** Status of Application for Approval to Utilize Human Subjects in Research

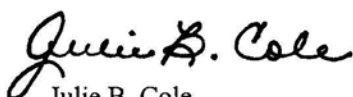
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After a review of your proposed research project numbered: **H06159**, and titled "**Distance Education Courses In Georgia's Public School Systems: Baseline Data on Utilization and the Perceived Barriers to implementation and Expansion**", it appears that (1) the research subjects are at minimal risk, (2) appropriate safeguards are planned, and (3) the research activities involve only procedures which are allowable.

*Therefore, as authorized in the Federal Policy for the Protection of Human Subjects, I am pleased to notify you that the Institutional Review Board has approved your proposed research.*

**This IRB approval is in effect for one year from the date of this letter.** If at the end of that time, there have been no changes to the research protocol, you may request an extension of the approval period for an additional year. In the interim, please provide the IRB with any information concerning any significant adverse event, **whether or not it is believed to be related to the study**, within five working days of the event. In addition, if a change or modification of the approved methodology becomes necessary, you must notify the IRB Coordinator **prior** to initiating any such changes or modifications. At that time, an amended application for IRB approval may be submitted. Upon completion of your data collection, you are required to complete a *Research Study Termination* form to notify the IRB Coordinator, so your file may be closed.

Sincerely,



Julie B. Cole  
Director of Research Services and Sponsored Programs

## APPENDIX E

## GEORGIA K-12 DISTANCE EDUCATION QUESTIONNAIRE

This survey is part of a statewide study on the current utilization of distance (including online) education courses, and the perceived barriers to the implementation and expansion of distance education programs in public schools in Georgia.

Before responding to any of the survey questions, please read the following:

Distance education courses are credit-granting courses offered to students enrolled in your district in which the teacher and students are in different locations. These courses:

- May originate from your district or from other entities (e.g., a state virtual school or a postsecondary institution).
- May be delivered via audio, video (live or prerecorded), or Internet (online) or other computer technologies, including both synchronous (i.e., simultaneous or “real time”) and asynchronous (i.e., not simultaneous) instruction.
- May include occasional face-to-face interactions between the teacher and the students. For example, a teacher teaching a course at several schools via video-conferencing may rotate between schools, or the teacher and students may be in the same location for occasional lab work or tests.

For purposes of this survey, please DO NOT include information about any of the following:

- supplemental course materials
- virtual field trips
- online homework
- staff professional development
- courses conducted mainly via written correspondence

Please DO include information about all of the following:

- all schools administered by your district (e.g., regular schools, charter schools, magnet schools, alternative schools)
- any distance education Advanced Placement (AP) or college-level courses in which students in your district are enrolled

In completing this survey, you acknowledge that your responses will be used as a part of a published dissertation, and that you have been advised of the risk and benefits of this activity. You should be aware that Internet security cannot be guaranteed. The risk of others reading your responses is very small; however, neither I or Georgia Southern University can guarantee total anonymity.

1. For each grade level listed on the left, and each school year listed across, please check the box to indicate if your district has had any students enrolled in distance education courses at that level during each school year. Note: If your district has never had any students enrolled in distance education courses, please skip to question 14 by clicking Continue at the bottom of each screen, and answer questions 14-20.

	prior to 2001-2002	2001- 2002	2002- 2003	2003- 2004	2004- 2005	2005- 2006
Grades PreK-5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 6-8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grades 9-12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please choose the following statement that best describes your district:

- My district has never had any students enrolled in AP or college level courses delivered via distance education.
- In the past, my district has had student(s) enrolled in AP or college-level courses delivered via distance education, but not currently.
- My district currently has student(s) enrolled in AP or college-level courses delivered via distance education, but has not in the past.
- My district has had students enrolled in AP or college-level courses delivered via distance education in the past, and we have student(s) currently enrolled.

3. Which technologies are used as primary modes of instructional delivery for any distance education courses in which students in your district are enrolled? (Please check all that apply). If a course uses multiple technologies to deliver instruction, but one mode predominates, choose the predominant mode for the course. Please take into account any distance education courses in which students in your district are enrolled, regardless of where the courses originated. Please do not consider technologies used for supplemental course materials or professional development.

- Internet courses using synchronous (i.e., simultaneous or real-time) computer-based instruction (e.g., interactive computer conferencing)
- Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction
- Two-way interactive video (e.g., GSAMS)
- One-way pre-recorded video (including pre-recorded videos provided to students, and television broadcast and cable transmission using pre-recorded videos)
- Other technology (please describe) \_\_\_\_\_

4. Of the technologies listed below, which one is used for the greatest number of distance education courses in which students in your district are enrolled?

1. Internet courses using synchronous (i.e., simultaneous or real time) computer-based instruction (e.g., interactive computer conferencing)
2. Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction
3. Two-way interactive video (i.e., two-way video with two-way audio)
4. One-way pre-recorded video (including pre-recorded videos provided to students, and television broadcast and cable transmission using pre-recorded videos)
5. Other technology (please describe) \_\_\_\_\_

5. To what extent are the following entities used to deliver the distance education courses in which students in your district are enrolled? (Please choose one response per line.)

	Major Extent	Minor Extent	Not at all
Cyber (i.e., online) charter school in your district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other schools in your district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your district (i.e., delivered centrally from the district)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Another local school district, or schools in another district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Georgia Virtual School Program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State virtual school in another state	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Postsecondary Institution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Independent Vendor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. For each of the curriculum areas below, please choose each area in which your district has ever had any student(s) enrolled in distance education courses:

1. General elementary school curriculum
2. English or Language Arts
3. Social Studies or Social Sciences (including History)
4. Computer Science
5. Natural or Physical Science (e.g., Biology, Chemistry, Physics)
6. Mathematics
7. Foreign Languages
8. Other (please describe) \_\_\_\_\_

7. To what extent are students in your district accessing online distance education courses at the following locations? (Please choose one response per line.)

	Minor Extent	Major Extent	Not at all
At home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some other location (e.g., public library)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Does your district provide or pay for the following items for students accessing online distance education courses from home? (please choose one response per line.) If online distance education courses are not accessed at home by students in your district, please skip to question 10.

	Yes, for all students	Yes, for some students	No
Computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internet service provider	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tuition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. If your district pays for some or all of the items listed in the previous question, why? If not, why not? Please type your answer below.

10. Is there a need to expand the distance education program in your district at this time?

1. Yes
2. No

11. Please use the space below to provide any additional comments or information you would like to share about the needs of your school district in relation to the expansion of distance education courses, i.e., why there IS or IS NOT a need to expand distance education courses in your district at this time.

12. How important are the following reasons for having students enrolled in distance education courses in your district? Please take into account any distance education course in which students in your district are enrolled, regardless of where the courses originate. (Please choose one response per line.)

	Not important	Somewhat important	Very important
Offering courses not otherwise available at the school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offering Advanced Placement or college-level courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Addressing growing populations and limited space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reducing scheduling conflicts for students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Permitting students who failed a course to take it again	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meeting the needs of specific groups of students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generating more district revenues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. To what extent are the following items considered barriers to the expansion of the distance education program in your district? (Please choose one response per line.)

	Not at all	Minor barrier	Moderate barrier	Major barrier
Course development and/or purchasing costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of distance education training for personnel in your district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of necessary technological infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restrictive federal, state, or local laws or policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased time commitment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organizational resistance to change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slow pace of implementation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of shared vision for distance education in the district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of strategic planning for distance education in the district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concerns about course quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concerns about receiving funding based on student attendance for distance education courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of grants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of other sources of funding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of technical support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Difficulty in convincing stakeholders of benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of support staff necessary to develop courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. Please answer this question ONLY if there are currently NO students in your district enrolled in distance education courses. To what extent are the following factors considered reasons why there are currently no students enrolled in distance education courses in your district? (Please choose one response per line.)

	Not at all	Minor reason	Moderate reason	Major reason
Lack of necessary technological infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of distance education training provided by your district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of technical support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of grants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of other sources of funding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Increased time commitment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organizational resistance to change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slow pace of implementation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of shared vision for distance education in the district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of strategic planning for distance education in the district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Difficulty in convincing stakeholders of benefits to distance education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of support staff necessary to develop courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Please use the space below to provide any comments or information you would like to share about the barriers to the implementation or expansion of distance education courses in your school district, i.e. factors that may be hindering your district from implementing or expanding distance education courses.

16. How would you best describe the metropolitan status of your district?

1. Urban
2. Suburban
3. Rural

17. What is the approximate percentage of students in your district who are eligible to receive free or reduced lunch?

18. How many students are enrolled in your district?

1. 10,000 or more
2. 2,500 - 9,999
3. 1 - 2,499

19. Please report the approximate percentages of students regularly enrolled in your district who are in each of the following ethnic/racial categories:

1. African-American
2. White
3. American Indian / Alaskan
4. Multiracial
5. Hispanic
6. Asian / Pacific Islander

20. Which of the following best describes your position within the school district? (Please choose only one response.)

1. Superintendent
2. Associate/Assistant/Area Superintendent
3. Principal
4. Curriculum Director
5. Technology Director
6. Assistant Principal
7. Counselor
8. Media Specialist
9. Teacher
10. Distance Education Facilitator
11. Other (please describe) \_\_\_\_\_

## APPENDIX F

## PERCEIVED BARRIERS TO THE EXPANSION OF DISTANCE EDUCATION

Variable	Not at All 1	Minor Barrier 2	Moderate Barrier 3	Major Barrier 4	M	SD	p	<u>N</u>
Course Development and/or Purchasing Costs	8 (16%)	10 (20%)	15 (31%)	16 (33%)	2.8	1.1	.15	49
Lack of Training for District Personnel	11 (22%)	23 (47%)	10 (20%)	5 (10%)	2.18	.91	.3	49
Lack of Technical Infrastructure	19 (39%)	16 (33%)	13 (27%)	1 (2%)	1.92	.86	.81	49
Restrictive Laws or Policies	23 (47%)	19 (39%)	5 (10%)	2 (4%)	1.71	.82	.14	49
Increased Time Commitment	9 (18%)	24 (48%)	11 (22%)	6 (12%)	2.28	.9	.38	50
Resistance to Change	21 (43%)	18 (37%)	7 (14%)	3 (6%)	1.84	.9	.03	49
Slow Pace of Implementation	16 (33%)	22 (45%)	10 (20%)	1 (2%)	1.92	.79	.24	49
Lack of Shared Vision for Distance Education	16 (33%)	24 (49%)	8 (16%)	1 (2%)	1.89	.75	.0	49

p = &lt; .05

Variable	Not at All 1	Minor Barrier 2	Moderate Barrier 3	Major Barrier 4	M	SD	p	<u>N</u>
Lack of Strategic Planning	19 (39%)	18 (37%)	9 (18%)	3 (6%)	1.92	.91	.08	49
Concerns About Course Quality	13 (27%)	20 (41%)	11 (22%)	5 (10%)	2.16	.94	.97	49
Concerns About Funding Based on Student Attendance	7 (14%)	19 (39%)	12 (24%)	11 (22%)	2.55	1.0	.77	49
Lack of Grants	10 (21%)	10 (21%)	16 (33%)	12 (25%)	2.63	1.08	.99	48
Lack of Other Sources of Funding	5 (10%)	12 (24%)	15 (31%)	17 (35%)	2.9	1.0	.63	49
Lack of Technical Support	19 (40%)	18 (38%)	8 (17%)	3 (6%)	1.9	0.91	.37	48
Difficulty in Convincing Stakeholders of Benefits	23 (47%)	15 (31%)	9 (18%)	2 (4%)	1.8	0.89	.02	49
Lack of Staff Necessary to Develop Courses	15 (31%)	14 (29%)	10 (20%)	10 (20%)	2.31	1.12	.04	49

p = < .05