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The Relationship of Teachers' Motivational Perceptions and Instructional Integration of the Internet: An Inquiry of Elementary Teachers in one Georgia School District

Starla Stone Barker

THE RELATIONSHIP OF TEACHERS' MOTIVATIONAL PERCEPTIONS AND INSTRUCTIONAL INTEGRATION OF THE INTERNET: AN INQUIRY OF ELEMENTARY TEACHERS IN ONE GEORGIA SCHOOL DISTRICT

by

STARLA STONE BARKER

Under the Direction of Dan Rea

ABSTRACT

Schools have spent much time and money providing teachers and students access to the Internet. As access has become commonplace in schools, teachers are increasingly encouraged to incorporate Internet resources in their classroom. Teachers' use of the Internet has increased in recent years; however, their use remains limited. This mixed methods study sought to understand why some teachers eagerly integrated the Internet in the classroom while others were hesitant to use the Internet with their students. More specifically, this mixed methods study explored how elementary teachers' perceptions of the extent of Internet usefulness/importance, enjoyment/liking, confidence, and anxiety may relate to their level of instructional Internet integration. Additionally, this study explored how these motivational perceptions and current integration practices differ between four subgroups of elementary school teachers (High Motivation/High Integration, High Motivation/Moderate Integration, Moderate Motivation/Moderate Integration, and Moderate Motivation/Low Integration).

The study was conducted in a small, rural school system in southeast Georgia. The participants were 93 kindergarten through fifth grade teachers in the Rose School District. The researcher utilized an e-survey, *Survey of Teachers' Integration and Motivation Instrument* (STIMI), for the quantitative portion of this study. Twelve teachers were selected from the survey participants to participate in semi-structured interviews.

The study found a significant relationship among elementary teachers' motivational perceptions and reported integration. Additionally, 49% of the teachers' reported integrating the Internet in the classroom at least 3 times per week. The tools teachers reported integrating the most were educational games and the least used tools were communication/collaboration tools.

The findings from this study imply that motivational perceptions are important to teachers' instructional integration of the Internet in the classroom. Schools should develop training initiatives that address these motivational perceptions and provide teachers time to share motivating Internet activities and tools used in their classrooms. Additionally, training should involve hands-on activities to increase teachers' motivational perceptions. Teachers need to be given the opportunity to observe other teachers successfully integrating Internet resources with their students. Motivational perceptions should be addressed through training and support, if schools want to increase teachers' instructional integration of the Internet.

INDEX WORDS: achievement motivation, Internet, instructional integration, motivational perceptions, second-order barriers

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DEDICATION

To my husband, Chad Barker, for his unwavering support and numerous sacrifices throughout this dissertation journey

To my parents, Sheila Lancaster and James Stone, and parents-in-law, Nancy and Gary Barker, for their constant encouragement and understanding

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CHAPTER I

INTRODUCTION

Due to the continued advancements in technology, federal and state officials look to educational institutions to keep the United States competitive in the global market. Federal and state governments have created a variety of initiatives to encourage the use of technology in schools. One such initiative is President Bush's No Child Left Behind (NCLB), which requires all students "to be technologically literate by the time the student finishes the eighth grade" (U. S. Department of Education, 2002). This type of educational initiative has given elementary and middle school teachers the responsibility of providing students with the skills needed for success in today's technology driven society. This responsibility has forced state and local school boards to examine the role of Internet resources and teachers' integration in the classroom.

Schools have placed great emphasis on developing methods of instruction to meet the requirements set forth in many federal and state educational technology initiatives. The computer and the Internet are important tools for teaching and learning in schools. Schools have made great attempts to connect instructional classrooms to the Internet. The National Center for Education Statistics (NCES, 2003, 2005) reported the percentage of schools with Internet access increased from 35% in 1994 to 100% in 2003. In 2006, Georgia's Annual State Technology Inventory reported that 98% of all instructional computers in Georgia schools were connected to the Internet (Georgia Department of Education, 2006). State Boards of Education and individual school systems have spent billions to equip their schools with computers and provide Internet access (Belson & Larkin, 2004); however, studies show that teachers' integration of the Internet remains

limited to some extent (Levin & Arafeh, 2002; Madden, Ford, Miller, & Levy, 2005; National School Boards Foundation, 2002). In 2006, Net Day's national survey of teachers revealed that 47% of K-12 teachers do not integrate the Internet regularly in their classroom instruction. With the increased focus on the integration of Internet resources in the classroom, why are some teachers not using the Internet with their students?

Integration Barriers

The researcher utilizes the word barriers throughout this study because researchers often refer to these factors as barriers; however, the researcher acknowledges the idea that these factors may also facilitate the integration of the Internet. There are many barriers teachers encounter that encourage or discourage their use of technology and the Internet. These barriers can be placed into two broad categories: first- and second-order barriers (Ertmer, 1999).

Much of the research concerning teachers' integration of technology focuses on first-order barriers. First-order barriers include concerns such as lack of modern equipment and time (Byrom, 1998; Madden, Ford, Miller, & Levy, 2005), technical and curricular support (Davidson, 2003; Kleiman, 2004), teacher training (Smith, 2004; Vanfossen, 2000; Yildrim, 2000), and Internet safety (Net Day, 2006; U. S. Department of Commerce, 2002). These barriers have often been the focus of federal technology initiatives.

Although first-order barriers are critical to integration, many federal initiatives assume that once these barriers are addressed teachers' integration will increase. Researchers have found that even when first-order barriers are addressed, not all teachers choose to integrate (Abbitt & Klett, 2007; Christensen, 2002; Loyd & Gressard, 1986;

Rovai & Childress, 2003). Teachers' motivation and beliefs were considered as additional barriers to integration.

Second-order barriers focus on motivational perceptions and beliefs that inhibit or enhance teachers' integration. They include perceptions such as computer usefulness/importance (Christensen, 2002; Loyd & Gressard, 1986; Ravitz, 1998), computer anxiety (Loyd & Gressard; Ropp, 1999; Rovai & Childress, 2003), ideas concerning their abilities to operate computers (Albion, 1999; Compeau, Higgins, & Huff, 1999; Loyd & Gressard; Oliver & Shapiro, 1993), and personal enjoyment (Loyd & Gressard; Rovai & Childress, 2003). In 1986, Loyd and Gressard conducted a comprehensive study, which sought to identify key beliefs that impact teachers' integration of technology. They identified four attitudes important to integration: computer usefulness/importance, computer anxiety, computer confidence, and computer enjoyment/liking. These motivational perceptions are the foundation for the present study.

Studies have found that second-order barriers are critical to teachers' integration (Abbitt & Klett, 2007; Christensen, 2002; Madden, Ford, Miller, & Levy, 2005; Loyd & Gressard, 1986; Rovai & Childress, 2003; Wang, Ertmer, & Newby, 2004; Wozney, Venkatesh, & Abrami, 2006). Schools must address these second-order barriers, if they plan to meet the educational technology goals set forth in technology initiatives like NCLB and National Education Technology Plan (NETP). The present study investigated these second-order barriers to gain a better understanding of how elementary teachers' motivational perceptions of computer usefulness/importance, enjoyment/liking, confidence, and anxiety may relate to their integration of the Internet in the classroom.

Applying a mixed methods approach, this study first utilized an e-survey to examine the motivational perceptions and Internet integration practices of 93 teachers in three elementary schools in a rural southeast Georgia school system and then performed follow-up interviews with 12 teachers based on their motivation-integration subgroup and grade level. The theory of achievement motivation (Vroom, 1995) and the research of Loyd and Gressard (1986) guided this study. This research may aid in the development of new training initiatives that enhance teachers' motivational perceptions of computers and in return, increase their instructional integration.

Teachers, Tools, and Internet Use

Schools have spent much time, effort, and money connecting schools to the Internet because it offers many educational tools within one source. Consider the following "basic educational aims of using the Internet in school: dialogue, dialectic, and open-minded inquiry" (Burniske & Monke, 2001, p. x). Furthermore, the Internet is the only educational tool that has the potential to "expand their (students) community to encompass the whole world" (Serim & Koch, 1996, p. 109).

As access has become more widespread in schools, teachers are increasingly encouraged to incorporate Internet resources in their classrooms. The National Education Technology Plan (NETP) acknowledges the need for teachers to utilize Internet tools in the classroom. The sixth action step of the NETP encourages schools "to move to digital content," which includes the need for states to "ensure that teachers and students are adequately trained in the use of online content" (U.S. Department of Education, 2004, p. 43). If students are to be well prepared to use online content, then teachers must be effectively and frequently integrating Internet resources with their students.

The resources and information available to teachers and students on the Internet are immeasurable. Educational organizations, corporations, and the federal government have spent much time and money developing sites and resources designed specifically for children. The U.S. government has a web portal specifically designed for children that allows them to easily navigate through the various government agencies' websites (Federal Citizens Information Center, 2007). The Verizon Foundation (2007) developed the site Thinkfinity.org, sponsored by various national organizations, which is a conglomerate of educational sites for students and teachers.

Educational Internet tools for elementary schools are numerous and many do not require a paid subscription. This allows all schools with adequate technology resources the ability to access tools that otherwise would not be available. The researcher has placed these tools into eight broad categories based on a review of pertinent literature and personal experiences and observations. A general description of each category is provided below:

- Communication/Collaboration tools: This category includes tools that allow communication and collaboration between all educational stakeholders. These tools include but are not limited to e-mail, chat, discussion boards, and blogs.
- Project-based Learning sites: WebQuests require students to take scenarios, often related to real-life situations, and utilize various resources to explore and provide solutions to the problem (Dodge, 2007).
- Educational Games: Sites that include interactive games that are designed to teach and reinforce a specific subject or concept as the student plays.

- Simulations/Virtual Tours: This category offers simulations of real-world experiences, which would be costly or inaccessible to students in the classroom. This category includes resources such as dissections, virtual field trips, and natural phenomenon.
- Multimedia: These tools come in a variety of formats. Teachers can download educational video from sites such as United Video Streaming (Discovery Education Streaming, 2008) and BrainPOP© (2008). These sites often offer instructional resources to enhance the use of the videos, pictures, graphics and sound in the classroom.
- Web Publishing: There are many opportunities for students to publish their work on the Internet (Burkhart & Kelly, 2000). Teachers can have students publish to the school, class, or individual student websites.
- Informational Research Tools: According to research, the most common use of the Internet with students is research for information (Levin & Arafeh, 2002; Grabe & Grabe, 2000; National School Board Foundation, 2002). This category includes search engines, encyclopedias, databases, almanacs, and dictionaries.
- Test-Preparation: Due to the increased focus on standardized tests scores, many sites offer test preparation material that align closely with state standards. The Georgia Department of Education (2007) currently offers test preparation via Georgia Online Assessment Systems (OAS).

Schools have spent much time, effort, and money to provide Internet access to teachers and students. Schools have been given the responsibility of providing students technology skills necessary for today's technology driven society. "Information and

communication technologies have helped create new types of jobs and demands for new skills, which in turn have led educational critics to ask how our schools can be more effective in meeting these needs" (Grabe & Grabe, 2000, p. 36). Serim and Koch (1996) argue, "the Internet can be a catalyst and enabler of systemic reform…a revamp of how we teach and learn as well as changes to the school structure itself" (p. 5). The Internet can provide great curricular support for teachers, but as Vrasidas and McIsaac (2001) argue, simply "buying computers and software and connecting them to the Internet does not automatically imply effective uses" (p. 128). If the Internet is going to enhance the learning environment, teachers must use it effectively in the classroom.

Teachers' use of the Internet has increased in recent years; however, it remains limited. A Net Day (2004) survey found that only 22% of teachers indicated that they always include material or information from the Internet. Furthermore, a study by Madden, Ford, Miller, and Levy (2005) found that only one-third of teachers report using the Internet regularly in the classroom. Although teachers' use of the Internet in the classroom has increased, students express concerns about its use. In a qualitative study conducted by Levin and Arafeh (2002), students suggest that when teachers assign Internet-based activities, they are often irrelevant or a misuse of the Internet. The students suggest that teachers often assign Internet activities, simply "because it is the Internet," not because the Internet is the most appropriate resource for the activity (Levin & Arafeh, p. 16). In a national survey, 80% of K-12 teachers reported their main use of computers and the Internet is for administrative tasks (Net Day, 2006). Although administrative tasks are important, teachers must use the Internet for instruction for student learning to be impacted.

Statement of Problem

Due to this increased focus on teachers' instructional integration of the Internet, many states have implemented professional development programs, like Georgia's Technology Integration Training Initiative (InTech), to encourage the integration of technology and Internet resources in the classroom (State Data and Research Center, 2000). Educators are encouraged to develop web-based projects, which can be accessed by students from school and home. School administration has encouraged the use of school and teacher web pages to maintain a line of communication between teachers, students and parents (Johnson, 2000). Teachers can post class notes, project guidelines, important dates, homework, and important links on school web pages. Teachers must acquire the skills necessary to integrate the Internet because "the use of technology by schoolchildren necessarily depends on the ability of teachers to integrate technology into their teaching" (Kent & McNergney, 1999, p.4).

While many students have exposure to computers in their homes, not all have equitable access to digital resources. In the 1990's, researchers focused on the "digital divide", which was defined as the disparity in physical access between the "have" and "have nots" (Light, 2001; National Telecommunications and Information Administration, 2000; Valadez & Duran, 2007). As access to technology and the Internet increased and became more equitable, researchers renamed the term "digital divide" to "digital equity" (Davis et al., 2007; Gorski, 2009; International Society for Technology in Education, 2007; Trotter, 2007). "Digital equity" research examines the skill level, intensity, and information literacy among groups in our society. Also "digital equity" research goes

beyond simple access of technology and the Internet and addresses the disparities in the manner they are used.

As access to computers and the Internet have narrowed and the focus has become "digital equity," the speed of connection has become a focus of concern. A 2009 study conducted by the Pew Internet found that 85% of homes with a household income $75,000 or higher had broadband access (Horrigan, 2009). In contrast, only 53% of homes with a household income between $20,000 and $30,000 had broadband access. Families with a low income typically cannot afford current technologies; therefore, their children do not have access to up-to-date digital resources or the high-speed Internet at home. These students rely on Internet access at school. If students in the lower income categories are to gain the skills necessary for future success, teachers must provide students experiences with technology and the Internet. Educators can level the "playing field" by providing all students successful and rewarding experiences utilizing the Internet.

Although studies have shown an increase in Internet connectivity in schools (Georgia Department of Education, 2006; Kleiman, 2004; NCES 2003, 2005), additional studies contend teachers' integration of this resource is limited (Levin & Arafeh, 2002; Madden, Ford, Miller, & Levy, 2005; National School Boards Association, 2002). Although the Internet offers many instructional tools, such as communication, simulation, problem solving, and video streaming, a study by NSBA (2002) found teachers' primary use of the Internet was for information research "not a forum for interactive teaching, learning, communicating and collaborating" (¶ 4). Similarly, earlier studies by Ravitz (1998) and Vanfossen (1999) posit that teachers' most frequent use of the Internet is for

searching for information. In 2006, Net Day's *Speak Up Day for Teachers* survey revealed that 53% of teachers reported they "sometimes include Internet materials" in their lessons (p. 8). This shows a promising majority of teachers are using the Internet for instructional purposes; however, there still remains 47% who occasionally or never use the Internet. Why are some teachers not integrating the Internet? What differences exist between teachers who integrate and those who do not?

Many studies have been conducted concerning teachers' motivational perceptions toward and instructional integration of technology (Abbitt & Klett, 2007; Christensen, 2002; Loyd & Gressard, 1986; Rovai & Childress, 2003; Wang, Ertmer, & Newby, 2004; Wozney, Venkatesh, & Abrami, 2006; Yildrim, 2000); however, these studies often examine the perceptions of secondary (subject specific) and preservice teachers. This study examined the perceptions of elementary (K-5) teachers. This group of teachers is often underrepresented in the literature. If by 2014 all students are to be "technologically literate" by eighth grade, it is imperative that elementary teachers effectively integrate the Internet (U.S. Department of Education, 2002). In addition, unlike previous studies, the present study will conceptually examine these motivational perceptions by applying the expectancy-value theory of achievement motivation (Vroom, 1995).

The available research has examined teachers' attitudes and motivation toward general technology integration. The limited literature that is available concerning elementary teachers' motivational perceptions toward integrating the Internet gives cause for a closer examination of teachers' integration of this resource. There is a void in the literature concerning elementary teachers' motivation to use the Internet for instructional purposes in the classroom.

The general research problem of the present study is the need for a better understanding of how elementary teachers' motivational perceptions may relate to different levels of instructional integration of the Internet. More specifically, there is a need to close the research gap and improve the current knowledge of how elementary teachers' perceptions of the extent of Internet usefulness/importance, enjoyment/liking, confidence, and anxiety may relate especially to levels of instructional Internet integration. Hence, the researcher's purpose in this study is to add to the current research by exploring—with the aid of the expectancy-value theory of achievement motivation and Loyd and Gressard's (1986) Computer Attitude Scale (CAS)—the motivational perceptions and current practices of elementary teachers' integration of the Internet.

Research Questions

Through this study, the researcher addresses the following overarching research question: How do motivational perceptions and current practices concerning instructional integration of the Internet differ among elementary teachers in a southeast Georgia school system? The following specific questions will serve as lines of investigation for this study:

1. What are the reported motivational perceptions of elementary teachers toward instructional integration of the Internet?
2. How do subgroups of elementary teachers (High Motivation/High Integration [HMHI], High Motivation/Moderate Integration [HMMI], Moderate Motivation/Moderate Integration [MMMI], and Moderate Motivation/Low Integration [MMLI]) differ in their reported motivational perceptions?
3. What are the reported Internet integration practices of elementary teachers?

4. How does the reported use of Internet tools differ among four subgroups of elementary teachers?
5. Is there a significant relationship among motivational perceptions and level of integration?

Significance of Study

The financial impact of providing access to the Internet has made teachers' use of this resource a common concern for school systems. Since the educational value of the Internet is mostly dependent upon the ability of teachers to effectively integrate it into their classrooms, it is important to study teachers' motivational perceptions that may encourage or discourage their integration of these resources. If teachers are not effectively utilizing these Internet resources, then the large amount of money school systems are spending on access is not worth its educational value. A study exploring teachers' perceptions and effective integration of the Internet provides data that may assists schools in examining and developing methods that address motivational perceptions that may encourage or inhibit integration.

This research may assist the Rose School District in the development of new technology initiatives that may encourage teachers' integration of the Internet. The Rose School District frequently offers teachers' technology training and support that focuses on integration of Internet resources. This research allows the Rose School District to reexamine this training and develop new training that will focus on teachers' motivational perceptions. This research provides the Rose School District with data concerning teachers' motivational perceptions toward integration and their level of integration of eight categories of Internet resources.

This research is important for the Georgia Department of Education (DOE), which creates and implements teacher training and technology initiatives throughout the state. In 2006, the state DOE discontinued the technology integration initiative in Georgia, INtegrating TECHnology (InTech) (Georgia Professional Standards Commission, 2006). Georgia teachers are currently required to pass a technology proficiency test to gain certification or a technology course in their undergraduate program (Georgia Professional Standards Commission). This research provides state officials with information that may assist in the development of new technology initiatives that address teachers' integration of the Internet.

As an elementary school media specialist, increasing the integration of the Internet has become an area of personal interest and concern. The title change from school librarian to media specialist has brought about a change in the role this position plays within the school. As a media specialist, I am responsible for collaborating with teachers and encouraging collaboration among teachers to develop information literate students (American Associations of School Librarians, 1998; Kearney, 2000). This encompasses the use of information that is available in multiple formats such as digital and print. The school media specialist is often given the responsibility of encouraging and monitoring integration of the Internet among teachers in their schools. This has been the most challenging but exciting responsibility for me. I have spent numerous hours purchasing hardware and software, searching for online educational resources and collaborating with teachers on technology-integrated lessons; however, often I become very discouraged with the actual integration that occurs in the classroom.

Although there are numerous resources available to teachers in my school, I do not observe an appropriate level of integration of Internet resources. I have spent much time conversing with teachers on the resources needed for successful integration. Our school administration has purchased the hardware and software requested by the teachers, but we are not experiencing an increased level of integration. My personal experience has allowed me to realize that hardware and software are but a small portion of successful integration. I have realized that a major component of integration is teacher's motivation, which has led to the focus of this research.

Delimitations

The delimitations of this study are as follows:

1. The focus of this study is elementary teachers in one southeast Georgia school district.
2. Although many factors contribute to teachers' integration of the Internet, the focus of this study is teachers' motivational perceptions.
3. The researcher utilized the school system's web portal for administering the survey, which may have discouraged some low motivated or low integrators from participating in the study.

Limitations

The limitations of this study are as follows:

1. A limitation to this research is the varied range of technological skills among the teachers participating in the study. Some teachers have received more computer training and assistance than others. Teachers with a higher skill level may be more comfortable with technology and have an increased level of integration.

2. Although all schools in the participating system have received equitable technology funding, resources differ among schools.

Definition of Key Terms

For the purpose of this study, specialized terms are defined as follows:

Achievement Motivation: A person's behavior toward achieving a particular task is the result of her perceived probability of success (expectancies) and the value of achieving the task (valences) (Madden, n.d.; Vroom, 1995).

Barriers: Although barriers often refer to factors that inhibit teachers' use of technology, this study also acknowledges that these factors may also facilitate integration of the Internet. This study will use the term barriers to indicate both facilitators and inhibitors to integration of the Internet.

First-Order barriers: "Obstacles that are extrinsic to teachers" that discourage their integration of technology (Ertmer, 1999, p. 2). First-order barriers include issues such as lack of modern equipment and time (Byrom, 1998; Johnston & Cooley, 2001; Means, Penuel, & Padilla, 2001; Vannatta & Fordham, 2004), technical and curricular support (Davidson, 2003; Kleiman, 2004), teacher training (Net Day, 2005; Smith, 2004; Vanfossen, 2000; Yildrim, 2000), and Internet safety (Net Day, 2006; U. S. Department of Commerce, 2002).

Instructional Integration: "Using technology effectively and efficiently in the general content areas to allow students to learn how to apply technical skills in meaningful ways" (Dockstader, 1999, p. 73).

Internet: A global network of computers that allow for the transfer of data between computers connected to the network (Grabe & Grabe, 2000). This includes

resources such as but not limited to the World Wide Web (WWW), e-mail, instant messaging, file transfer protocol (ftp), discussion boards, chats and news groups.

Motivational Perceptions: A set of beliefs, attitudes or ideas that encourage an individual to instigate and sustain an activity. The specific beliefs that this research considers are those identified by Loyd and Gressard (1984, 1985, 1986): usefulness/importance, enjoyment/liking, anxiety, and confidence.

Second-Order barriers: "Underlying beliefs about teaching and learning" that discourage a teachers integration of technology (Ertmer, 1999,¶ 16). Second-order barriers also include teachers' motivational perceptions. They include perceptions such as computer importance (Christensen, 2002; Loyd & Gressard, 1986; Ravitz, 1998), computer anxiety (Loyd & Gressard; Ropp, 1999; Rovai & Childress, 2003), ideas concerning their abilities to use computers (Albion, 1999; Compeau, Higgins, & Huff, 1999; Loyd & Gressard; Oliver & Shapiro, 1993), and personal enjoyment (Loyd & Gressard; Rovai & Childress, 2003).

Technology: This is an all-inclusive term referring to available electronic or digital devices. It includes but is not limited to such items as computer, projector, digital microscope, scantron machine, electronic white board, television, compact disc (CD) player, and digital video disc (DVD) player.

Summary

The influx of the Internet into our society has forced schools to once again reconsider their role in preparing students for future success. Internet resources have become a focus of education reform and often surfaces in the continued debate over how to best educate our students. "Information and communication technologies have helped

create new types of jobs and demands for new skills, which in turn have led educational critics to ask how our schools can be more effective in meeting these needs" (Grabe & Grabe, 2000, p. 36). The development of computer literate students is more imperative today than ever before in history. As educators we are not only responsible for educating our students but for providing them the skills necessary to be "capable, productive citizens when they graduate" (Dusick, 1998, ¶14).

Schools must develop systems of support for teachers that encourage their integration of the Internet in the classroom. Although there has been an increase in Internet access in schools, the data shows that many teachers are not taking advantage of this rich resource to maximize student learning. The development and adoption of national and state technology standards will further encourage school administration to develop initiatives that address the many barriers that inhibit or facilitate teachers' Internet integration. If teachers are not successfully integrating the Internet into the learning environment, students are not receiving the experiences needed for success in our Internet- rich society.

Although there are many barriers that teachers encounter when they integrate the Internet, this research focuses on the second-order barriers/facilitators: enjoyment/liking, usefulness/importance, confidence, and anxiety. The research of Loyd and Gressard (1986) and Vroom's (1995) theory of achievement motivation guide the research. An examination of these barriers may assist in the development of initiatives that address these barriers/facilitators and increase teachers' integration of the Internet; thus, providing students the skills necessary for a technology-rich society.

CHAPTER II

REVIEW OF LITERATURE

When addressing teachers' lack of effective integration of the Internet, one must examine the literature pertaining to this topic. First, an examination of the history of computers, the Internet, and education is provided to supply a historical context for this research. Second, the "digital equity" that is often discussed in the literature is examined. Third, a description of the categories of educational Internet tools and teachers' integration practices is explored. Fourth, the review examined first-order barriers that are frequently discussed in the literature. Fifth, the concept of motivation and teachers' motivational perceptions or second-order barriers is investigated. The examination of motivation includes a discussion of Vroom's (1995) theory of achievement motivation, how this theory relates to teachers' integration of the Internet, and the four motivational perceptions—computer usefulness/importance, computer confidence, computer anxiety, and computer enjoyment—that Loyd and Gressard (1984, 1985, 1986) identified as instrumental to teachers' effective integration of technology. An examination of previous studies related to these motivational perceptions completes the comprehensive examination of literature.

History of Computers, the Internet, and Education

When discussing the Internet in the classroom, it is important to trace the history of technology and the Internet in education. An examination of technological advancements in education will provides insight into teachers' integration of the Internet in the classroom. A historical examination allows for a better understanding of the

changes and adaptations teachers have experienced as educational technology has progressed in schools.

Computers first found their way into education in the early 1980's. The Apple II was developed around 1983 and began finding its way into many schools across the United States (Murdock, n.d.). Cuban (1986) posits:

> Cultural forces pressed schools to embrace computers. Growing concern for the United States losing its grip on markets that had U.S. stamped all over them drove corporate officials to examine public schools and to join lawmakers in correcting what came to be viewed as a national problem: the inefficiency of U.S. schools in producing sufficient numbers of engineers, mathematicians, technicians, and workers flexible enough to survive in a rapidly changing workplace. (p. 75)

This thought by politicians, schools and corporate officials forced schools to closely examine the use of computers in the classrooms and the school curricula. Although government officials understood the need for technology in schools, funding for these resources was problematic for school officials. President Clinton signed the Telecommunications Act of 1996 in an effort to assist schools with the purchasing of new technologies (Federal Communications Commission, 2007). Section 254 of this act created the Schools and Libraries Program of the Universal Service Fund, commonly known as "e-rate" to "help schools and libraries obtain access to state of the art services and technologies at discounted rates" (Federal Communications Commission, ¶3). In 1998, the first set of national technology standards was developed that addressed technology integration in schools (International Society for Technology in Education, 2007).

Federal legislation and national standards allowed and encouraged schools to begin investing in technology. Around 1995, the Internet found its way into schools (Murdock, n.d.). A vast array of information was available with the click of a finger. With information becoming so easy to access from all over the world, schools immediately recognized the importance of student accessibility to this digital resource and began wiring schools for Internet access. The rise of the Internet offered many new possibilities for education. Educators now had the resource to develop projects on the WWW (World Wide Web), which could be shared among multiple individuals in different locations. E-mail permitted students and teachers the ability to communicate efficiently with one another. E-mail also gave students a medium that would allow them to easily communicate and work together on school related projects away from school (Grabe & Grabe, 2000).

The Internet has brought a digital face to schools at all educational levels. Colleges and high schools have been providing online learning environments for students for many years but not until recently have elementary schools offered this opportunity for its students. State boards of education have begun recognizing online learning environments for elementary students. The Odyssey School began offering online classes via Georgia Virtual Academy (GVA) in August, 2007 to elementary students in the state of Georgia (Georgia Virtual Academy, 2007). GVA maintains and follows state mandated curriculum standards and assessments. This non-traditional setting for elementary students is relatively new but will impact teachers and students and continue the Internet's transition of the traditional educational setting.

Educational technology remains in the era of the computer, more specifically the Internet. Students can experience many things that could not be experienced before the development of the Internet. Educational opportunities are available to students online directly from the personal computer in their home. Students, teachers, and parents have a resource that allows them to communicate with people in other cities, states, and countries. This gives individuals the opportunity to gain a broader understanding of the world and other cultures (Katz, 1997; Mitchell, 1999). Students have access to digital resources that permit them to quickly access current research and information on a variety of topics with the click of a mouse. Also, they can use e-mail to access valuable information from experts in varied fields of study (Grabe & Grabe, 2000; Serim & Koch, 1996). When teachers effectively integrate the Internet into the instructional setting, the possibilities are numerous. However, similar to previous technological advancements, the success of the Internet as an instructional tool ultimately depends on teachers' effective integration and attitudes toward its use.

Digital Equity

The Internet has been called the great equalizer because the Internet offers the same information to everyone (Orr & Heaton, 2007); however, many researchers have examined the inequalities that exist among various groups' access and use of technology and the Internet in our society (Gorski, 2009; Nagel, 2008; International Society for Technology in Education [ISTE], 2007; NTIA, 1995, 2000; Trotter, 2007). The inequality in access was coined in the 1990's by researchers in the field as the "digital divide" (Novak & Hoffman, 1998, Wenglinsky, 1998; Young, 2000). The origin of the

term “digital divide” is not certain; however, concern for these inequities surfaced as early as 1995 (Anderson et al., 1995).

In 1995, National Telecommunications and Information Administration (NTIA) published their first study of the digital divide, *Falling Through the Net*. The “digital divide” was defined as the disparity in physical access between the “have” and “have nots” (Light, 2001; NTIA, 1995; Valadez & Duran, 2007). Early research into the “digital divide” focused on income and education; however, additional factors, such as race, gender, and age were also considered to be contributors to the disparity of access (Jackson et al., 2008).

As access to technology and the Internet increased and became more equitable researchers reconceptualized the idea of a “digital divide” to “digital equity” (Davis et al., 2007; Gorski, 2009; ISTE, 2007; Trotter, 2007). The term “digital equity” suggests the disparity that exists among individuals is multidimensional, not only focus on access (Valadez & Duran, 2007). Supporters of the “digital equity” movement argue “inequities do not disappear when we add computers and Internet access to classrooms” (Gorski, 2009, p. 349). Davis et al. (2007) define “digital equity” as “equal access and opportunity to digital tools, resources, and services to increase digital knowledge, awareness, and skill” (p. 8). This definition goes beyond simple access of technology and the Internet and addresses the disparities in the manner they are used.

“Digital equity” research examines the skill level, intensity, and information literacy among groups in our society. Jackson et al. (2008) conducted a study to examine race and gender differences in children’s’ instructional technology (IT) use. This study found that African American females lead all the groups in their intensity of Internet use.

However, African American males used the Internet less often and were the least intense users of the Internet (Jackson et al., 2008). This study argued that African American males need to be introduced to Internet activities in elementary school or earlier, if possible. Additionally, a study by Judge, Puckett, and Bell (2006) suggested a disparity exists in the way technology is used in high-poverty schools. Their study found students in high poverty schools are more likely to use the Internet for rote learning; however, students in low-poverty schools use it for higher-order thinking. The divide can now be found in how the Internet is used in schools (Coulter, 2008).

As access to computers and the Internet has expanded and the focus has become "digital equity," the speed of connection has become a focus of concern. Today, many Internet sites require broadband access because they utilize sophisticated graphics, streaming audio, and video. This has forced researchers to examine the disparities in broadband access (Horrigan, 2009). A 2009 study conducted by the Pew Internet and American Life Project examined home broadband access (Horrigan). This study found that 85% of homes with a household income $75,000 or higher had broadband access. In contrast, only 53% of homes with a household income between $20,000 and $30,000 had broadband access. However, the study found the greatest increase in broadband adoption from 2008-2009 were homes with household income under $20,000. Although lower-income homes do not have the same adoption rates as higher-income homes, their adoption rate is increasing. The study also found a disparity among rural (46%) and non-rural (67%) homes.

Data has shown that access has improved among various groups in our society; however, "digital equity" remains a concern. Our students are not receiving the same

opportunity to use the Internet in meaningful and useful ways. Disparities still exist in technical skills and information literacy (Clarke, Milner, Killer, & Dixon, 2008). Although theses disparities still exist, Thomas (2008) argues that "schools can close the knowledge portion of the remaining divide (p. 14)." This can only happen if teachers are using the Internet is ways that encourage students to participate in meaningful learning activities.

Schools, Teachers, and the Internet

Internet Tools for Schools

The Internet has great potential in the educational setting because it offers many instructional tools within one resource. Educational Internet tools come in a variety of formats and are quite numerous. A review of pertinent literature allowed the researcher to place Internet tools into broad and more manageable categories. Many researchers and educational organizations have categorized Internet tools (Burkhart & Kelly, 2000; International Society for Technology in Education (ISTE), 2007; National Teacher Training Institute, 2006). The categories vary greatly among researchers and organizations; however, there exist some commonalities among the categorizations. The researcher has created a list of categories based on these commonalities and those she has frequently observed in her personal observations and experiences as a classroom teacher and school media specialist. The following sections briefly describe and provide examples of these categories of Internet tools.

Communication/Collaboration Tools. The category that most frequently surfaced in the review of the literature was the communication/collaboration category (AT& T Knowledge Network Explorer, 2007; Burkhart & Kelly, 2000; Davies, 1997; Johnson,

2007; National Teacher Training Institute, 2006). The National Education Technology Standards for Students (NETS) states that students should "use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others" (International Society for Technology in Education, 2007, ¶2). Online communication tools allow students and teachers the resources needed to successfully meet this standard. These tools include but are not limited to e-mail, chat, discussion boards, and blogs.

The National Teacher Training Institute (NTTI) suggests the easiest way to get started using the Internet with students is through e-mail because it requires minimal planning. Communication/Collaboration tools offer teachers and students a manner to communicate effectively and efficiently with peers, teachers, and a variety of field experts (Jonassen, Howland, Moore, & Marra, 2003). A national study conducted by CDW-G (2005) found that 86% of teachers report that their primary use of the Internet is for communication. Although this use is primarily for administrative duties (CDW-G; Zhao & Frank, 2003), this data illustrates the importance of communication/collaboration tools to teachers.

Examples of communication/collaboration sites:

- Email: Gaggle.Net

  www.gaggle.net

  The web portal offers free filtered e-mail for students and teachers.

- Discussion board: ePALS Book Club

  http://www.epals.com/projects/book_club/?bookclub_468_en.gif

  EPALS Book Club allows students to share information about books they have read in a discussion board format.

- Blog: 21Classes

  http://www.21classes.com/

  This free site allows teachers and students a portal for creating individual or classroom blogging environments.

Project-based Learning Tools. WebQuests are problem-based activities that are specifically designed for use in an educational setting. WebQuests are useful resources for integrating the Internet in the classroom because students get actively involved (Star, 2000). The WebQuest strategy was first developed by Bernie Dodge "to help teachers integrate the power of the Web with student learning" (March, 2003, p. 42). A WebQuest is defined as "an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet." (Dodge, 2007).

WebQuests are exceptional learning tools because "students must use their own creative-thinking and problem-solving skills to find solutions to problems" (Starr, 2000, ¶5). They require students to do more than recite information on a worksheet or a test. Students are given real life situations or problems. They are required to use Internet resources to search for possible solutions to the situation or problem. However, it is not just about locating information on the Internet; it is about doing something creative with

the information (March, 2003). Students get actively involved in their learning and are allowed the opportunity to think critically and creatively.

Example of project-based learning tools:

- WebQuest.org: http://www.webquest.org/index.php

  This web portal maintains a large database of WebQuests. Subject and grade organize WebQuests. Bernie Dodge, the original developer of WebQuests, maintains this site.

Educational Games. Although the educational gaming category did not surface often in a review of pertinent literature, statistics illustrate its importance with students and schools (Gros, 2007; Roberts et al., 2004; Starkman, 2007). Additionally, the researcher has observed great use of educational gaming sites at the elementary level. Students in school today have grown up playing digital games (Gros, 2007; Starkman, 2007). Children report that approximately one-third of their time online is spent playing games (Roberts et al., 2004). Since video games are a familiar media to students, schools are making an attempt to reach students through educational digital games (Squire, 2003). Educational game sites offer interactive activities, which are designed to teach and reinforce a specific subject or concept as the student plays. Squire and Steinkuehler (2005) argue that games benefit students because players "control their actions, actively pursue their own goals, are challenged to the optimal extent of their abilities, and are given clear feedback on their performance" (p. 2). Internet games provide all of these benefits, plus allow students the opportunity to use a medium that is appealing and available to many students (Gros, 2007).

One difficulty in utilizing Internet games with students is locating games that correlate to the learning objective the teacher is trying to address. Although online educational gaming sites can be very entertaining and beneficial to students, teachers need to closely evaluate these sites and ensure the site is teaching or reinforcing the intended learning concept.

Examples of educational game sites:

- Math Playground: http://www.mathplayground.com/games.html

  There are a variety of math games available, such as word problems and logic puzzles. The games are organized by appropriate grade and math concept.

- Starfall: http://www.starfall.com/

  Starfall is designed for elementary students and focuses on phonics and reading skills. The activities are divided by reading level or concept and special holidays.

Simulations/Virtual Tours. Educators have used simulation activities, such as role-playing, for many years; however, technology and the Internet have placed a digital face to simulation activities. The Internet has allowed teachers greater opportunities with the types of simulations activities they may offer students in the classroom (Gredler, 1996). This category offers simulations of real-world experiences that are typically costly or inaccessible to teachers and students in the classroom. Simulations include resources such as dissections, virtual field trips, multi-user virtual environments (MUVE), and natural phenomenon.

Many of the tools within this category are commonplace in classrooms but a MUVE has recently been introduced in schools across the United States. MUVEs have

great potential in a learning environment. According to Blaisdell (2006), a MUVE is "an interactive simulation of a geographical area, say a town, where features of the environment…are represented by computer graphics" (p. 28). MUVEs are designed to encourage collaborative work among students in order to solve an inquiry-based problem. The MUVE, River City Project, requires students to work collaboratively to solve a health crisis facing a simulated river town in the late 1800s (Harvard University, 2007). MUVEs and other digital simulation activities can provide students and teachers the ability to experience a variety of activities that would otherwise be difficult or often impossible.

Examples of simulations/virtual tours:

- River City Project: http://muve.gse.harvard.edu/rivercityproject/index.html
- Net Frog Dissection: http://frog.edschool.virginia.edu/Frog2/Dissection/Setup/setup2.html
- VolcanoExplorer: http://dsc.discovery.com/convergence/pompeii/interactive/interactive.html

Multimedia. Multimedia tools come in a variety of formats. Teachers can download educational videos from sites, such as United Video Streaming and BrainPOP©. These sites offer additional instructional resources, such as lesson plans, related web links, and learning activities that supplement the video's integration in the classroom (BrainPOP, 2007; United Video Streaming, 2007).

Multimedia tools also include sites, which offer pictures, graphics, and sound. Teachers and students can use these tools to enhance presentations and instructional materials. Sites, such as Google images, allow users to search for specific images. This site will search the Internet matching search criteria to images on various websites (Google, 2007). Music and sounds can be downloaded from multiple sites, such as freemusic.com. Many students use these resources frequently in their everyday lives; however, teachers must work with students and teach them how to legally use and accurately cite these resources for educational applications.

Examples of multimedia tools:

- BrainPOP (2008): http://www.brainpop.com/

  There are a variety of educational videos available on this site. A quiz, instructional resources, and links to related topics are included with each video.

- United Video Streaming (Discovery Education Streaming, 2008): http://streaming.discoveryeducation.com/index.cfm?location=gpb

  The teacher must register with this site in order to utilize the available videos. Teachers in the state of Georgia may utilize this resource free of charge. A search for videos can be conducted on the homepage or a teacher can search by standard, grade, or subject.

Web Publishing. There are many opportunities for students to publish their work on the Internet (Burkhart & Kelly, 2000). Teachers can have students publish their projects or writings to the school, class, or individual student websites, which can be accessed by parents, friends, and family. Chaika (2005) suggests students benefit from

publishing their writing on the Internet because "feedback provided in English class might not produce the same sense of self-worth that being published produces" (¶ 3). Davis and Peters created a web publishing project, which was used with English Speakers of Other Languages (ESOL) (2008). The ESOL students first created a story about their favorite toys and incorporated illustrations to enhance their stories. Then the teachers assisted the students in placing their stories and illustrations on the school website. Davis reports, "The students were elated to see their work on the web" (¶ 6). Allowing students to publish to the Internet can be a great motivation to students.

Examples of web publishing tools:

- Kidsbookshelf:

  www.kidsbookshelf.com

  This site provides students a media for publishing poems, book reviews, and short stories to the Internet.

- Think Quest: http://thinkquest.org/en/

  Think Quest is a web portal for students to publish a variety of projects online. The site has multiple sites for teachers to explore, which have been created by classes or individual students. ThinkQuest is supported by the Oracle Education Foundation (2009).

Informational Research. According to research, teachers' most common use of the Internet with students is informational research (Levin & Arafeh, 2002; M. Grabe & C. Grabe, 2000; National School Board Foundation, 2002). A study conducted by Orr and Heaton (2007) of pre-kindergarten through twelfth grade found that 84% of teachers

reported they have their students use the Internet to find information and resources. A review of the literature found that informational research is a common category among researchers (AT&T Knowledge Adventures, 2007; Burkhart & Kelly, 2000; ISTE, 2007; National Teacher Training Institute, 2006; Orr & Heaton, 2007). The International Society for Technology in Education (ISTE, 2007) suggests that students should be able to "apply digital tools to gather, evaluate, and use information" (¶3). National Teacher Training Institute advocates that the Internet allows students and teachers the resource necessary to "gather information otherwise difficult to find" (¶ 4). Online research tools provide teachers and students the resources necessary for digital research. This category includes but is not limited to search engines, encyclopedias, databases, almanacs, and dictionaries.

Student research often begins with Internet search engines. There are numerous search engines on the Internet designed as a safe place for students to locate information (Wood, 2005). Search engines can be good resources for students to locate and find information; however, educators must teach students how to evaluate the sites and material (Nunberg, 2005). Students must learn to evaluate online material and understand that anyone can post information on the web. Teachers should provide learning activities that allow students the opportunity to evaluate online resources for currency, authority, biases, and accuracy (Wood, 2005).

Additional research or reference resources available on the Internet include dictionaries, thesauruses, encyclopedias, and almanacs. The University System of Georgia (2007) maintains Georgia Library Learning Online (GALILEO), which was developed to "provide equal access to information" for all Georgians (¶ 1). Special

research tools are available to all Georgia schools through this resource. GALILEO offers various research databases, Digital Library of Georgia, and a special web portal for student research (University System of Georgia).

Examples of information research sites:

- Search Engine: Awesome Library for Kids http://www.awesomelibrary.org/student.html
- GALILEO (Kids Portal): http://galfe1.gsu.edu/cgi-bin/kidspage.cgi?nf=0

Test preparation. Due to the increased focus on standardized tests scores, some sites offer test preparation material that align closely with state standards. These sites are designed to provide students the opportunity to practice sample questions that are similar to state mandated test. The Georgia State Department of Education funds a site specifically designed to correlate with the Georgia Criterion-Referenced Competency Test (CRCT), which is utilized to determine promotion and retention of students and whether a school has made annual yearly progress (AYP). All students and teachers in the state are given special login information. Students may take pre-designed test or teacher-designed test (Georgia Department of Education, 2007). Similarly, Virginia State Department of Education offers the Virginia State Standards of Learning: Science, Math, and Technology Practice Tests, which allow students access to questions released from state test materials (Thomas Jefferson Accelerator Facility, 2007). The continued emphasis on standardized testing will force all state boards of education to develop online practice resources that correlate directly with state-mandated tests.

Example of test-preparation site:

- Georgia Online Assessment Systems (OAS):

  www.georgiaoas.org

  Georgia OAS is an online test preparation tool funded by the state of Georgia and available to all students in Georgia (Georgia Department of Education, 2007).

Current Integration Practices

The previous discussion of the eight categories of Internet tools illustrates the abundance of Internet resources that may assist teachers in developing technology-rich learning activities. Although there are many educational Internet resources available, ultimately, the teacher determines integration of these resources (Bitner & Bitner, 2002). An examination of current integration practices, will allow for a better understanding of teachers' frequency of integration and practices concerning their instructional integration of technology and the Internet

Numerous studies have examined teachers' use of computers and the Internet in schools (CDW-G, 2005; Christensen, 2002; Loyd & Gressard, 1986; Rovai & Childress, 2003; Vanfossen, 2000). This research has shown that teachers' use of the Internet in the classroom is increasing and has become a part of the instructional routine for some teachers. In 2005, CDW-G published its findings of a national survey of 1,000 K-12 teachers. The survey sought input from teachers concerning their use of Internet in the classroom. One of the key findings from this study was 54% of teachers agreed that "technology is having a profound impact on the classroom and how they teach" (CDW-

G, 2005, p. 7). The study also found 67% of the teachers reported using Internet "in their classroom instruction at least a couple of times per week" (p. 11).

Although schools are experiencing an increase in the integration of technology, the integration of the Internet remains an area of concern (Madden, Ford, Miller, & Levy, 2005). The Internet has become an important tool for teaching and learning in schools. Schools have made great attempts to connect instructional classrooms to the Internet. The National Center for Education Statistics (NCES, 2003, 2005) reported that the percentage of schools with Internet access increased from 35% in 1994 to 100% in 2003. In 2006, Georgia's Annual State Technology Inventory reported that 98% of all instructional computers in Georgia schools were connected to the Internet (Georgia Department of Education, 2006). State Boards of Education and individual school systems have spent billions to equip their schools with computers and provide Internet access (Belson & Larkin, 2004); however, studies show that teachers' integration of the Internet remains to some extent limited (Levin & Arafeh, 2002; Madden, Ford, Miller, & Levy, 2005; National School Boards Foundation, 2002; Zhao & Frank, 2003).

In 2006, Net Day's national survey of teachers revealed that 47% of K-12 teachers do not integrate the Internet regularly in their classroom instruction. Why are some teachers not using the Internet with their students, when there is an abundance of educational Internet tools and the Internet is accessible in most classrooms? An examination of research focusing on barriers to teachers' integration provides some insight into this concern. The researcher utilizes the word barriers in this review of literature because researchers often refer to these factors as barriers; however, the researcher acknowledges the idea that these factors may also facilitate the integration of

the Internet. Additionally, the researcher examines not only barriers to integration of Internet resources but general technology integration. The researcher recognizes that barriers that are often encountered by teachers in their efforts to integrate technology are applicable to teachers' integration of Internet resources.

Teachers encounter many barriers that inhibit or facilitate their integration of the Internet in the classroom. Ertmer (1999) places barriers to integration into two broad categories: first-order and second-order barriers.

First-Order Barriers

Much of the research concerning teachers' integration of the technology and the Internet focuses on first-order barriers. First-order barriers are defined as "obstacles that are extrinsic to teachers" that discourage their integration of technology (Ertmer, 1999, p. 2).

One first-order barrier that researchers have found that discourages the integration of technology and the Internet is the time necessary for successful integration (CDW-G, 2005; Means et al., 2001). Vannatta and Fordham (2004) advocate, "the process of learning to use technology requires time—time spent in training, but also time spent playing with and exploring technology" (p. 261). In a national study of 1,000 K-12 teachers conducted by CDW-G, 55% of teachers suggested that the most significant obstacle to integration is time. Additionally, in the 2006 Net Day survey, teachers reported that lack of time was the greatest barrier to integrating technology.

Teachers have limited time to share, plan, and implement technology-rich lessons (Johnston & Cooley, 2001; Means et al., 2001). ChanLin et al. (2006) conducted a study of eight teachers who won an award for creative teaching. This study utilized interviews

to explore how these teachers integrate technology into their classroom activities and their perceptions toward integration of technology. The teachers suggested they need "more time and collaborative effort for planning and implementing" technology lessons (p. 62).

Although schools have made great efforts to provide the necessary technology for successful integration (Belson & Larkin, 2004; NCES 2003, 2005), teachers often cite lack of hardware and software as a barrier to their integration (ChanLin, 2007; Johnston & Cooley, 2001). ChanLin (2007) examined the perceived importance of factors that impact teachers' technology integration. The study of 407 elementary and secondary teachers utilized a questionnaire that examined environmental, personal, social, and curricular factors. In this study, teachers rated hardware and software as the most important factor to teachers' integration of technology.

Furthermore, Wood et al. (2005) carried out a study examining the barriers and supports to teachers' integration of technology in the classroom. The study included focus-group discussions and a survey with 54 elementary and secondary school teachers. The results showed that teachers are not concerned with the "presence or absence of resources but problems using those resources in terms or malfunctions, compatibility and change" (p. 195). Hardware and software will continue to remain a concern for schools because it is important that they are not only available but they properly supported by personnel and infrastructure.

Lack of teacher training is an additional first-order barrier that is often identified in the literature. Many teachers believe they do not receive adequate training to support their integration efforts (Net Day, 2005, 2006; Smith, 2004; Vanfossen, 2000; Yildrim,

2000). Vanfossen (1999) surveyed 191 high school social studies teachers in Indiana and found that they identified lack of training as the greatest barrier to their integration of the Internet and WWW. A recent study by CDW-G (2006) established teachers' beliefs concerning technology as an important tool for learning positively related to the number of hours of technology training they had received. Without adequate continued teacher training and support, effective integration will continue to be a barrier to teachers' integration.

Two studies examined teachers' integration before and after a technology training course and found teachers confidence increases after participating in a technology course (Abbitt & Klett, 2007; Ropp, 1999). In an effort to identify possible influences on teachers' self-efficacy beliefs, Abbitt and Klett utilized pre- and post- measurements of 108 undergraduate students enrolled in four technology integration courses. The study found that pre-service teachers had a higher level of self-efficacy after the course. Training allows teachers to become comfortable and more confident with their technology skills.

The previous first-order barriers are applicable to general technology integration, but online safety is applicable solely to the use of the Internet. A common concern of Internet use in the classroom is the safety of the students. Madden et al. (2005) conducted a quantitative study that examined factors that influence teachers' use of technology in the classroom. The study found that the most common concern among teachers was protecting students from pornography and "undesirable people in chat rooms" (Madden et al., p. 268). The National Center for Missing and Exploited Children reported "in the first eight months of 2007, there were 9,533 reports of online enticement

of children (Kornblum, 2007). This is an alarming increase from the 6,374 reports in 2006. Although Internet safety is a concern for teachers, education can be a great tool for teaching students how to be safe on the Internet (Joseph, 2007).

Many researchers have examined first-order barriers (Byrom, 1998; Davidson, 2003; Johnston & Cooley, 2001; Kleiman, 2004, Net Day, 2005, 2006; Smith, 2004; Vanfossen, 2000; U. S. Department of Commerce, 2002). Although these first-order barriers are important, ultimately, the teacher determines the level of integration (Bitner & Bitner, 2002). This has led to an examination of additional barriers that are intrinsic to the teacher such as second-order barriers.

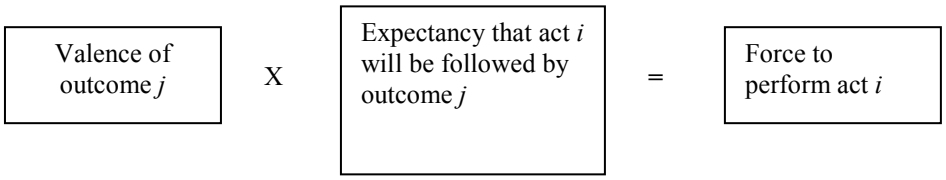
Second-Order Barriers

Ertmer (1999) defines second-order barriers as "underlying beliefs about teaching and learning" (¶ 16). Second-order barriers include teachers' motivational perceptions. They include perceptions such as computer usefulness/importance (Abbitt & Klett, 2007; Christensen, 2002; Ravitz, 1998), computer anxiety (Loyd & Gressard; Ropp, 1999; Rovai & Childress, 2003), ideas concerning their abilities to use computers (Compeau, Higgins, & Huff, 1999; Loyd & Gressard; Wang, Ertmer, & Newby, 2004), and personal enjoyment (Loyd & Gressard; Rovai & Childress, 2003).

Theory of Achievement Motivation

When examining motivational perceptions and how they may encourage or discourage teachers' integration of the Internet with their students, it is first necessary to define the concept of motivation and how it relates to this research. The term *motivation,* for the purpose of the present research, is based on the expectancy-value theory of achievement motivation originally developed by Vroom (1995) and later adapted to

educational settings by researchers such as Eccles and Wigfield (1994, 2002). According to this theory, achievement motivation is positively related to two basic motivational components: valences and expectancies. Vroom defines valences as one's "affective orientations toward particular outcomes" (p. 18). Valences can be further defined as the value one places on an expected outcome. Expectancies are one's beliefs concerning their expected level of success when performing a particular task. Vroom's basic formula for motivation is as follows (p. 32):

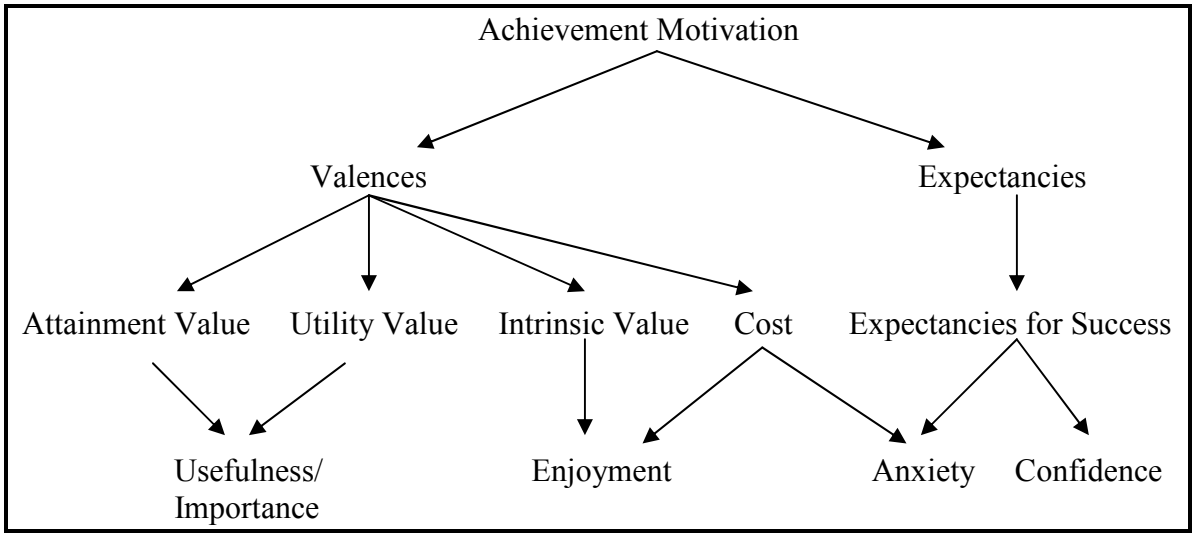


Furthermore, achievement motivation for a task is equal to the valences (values) of the task times the expectancies of success for the task. Hence, task achievement motivation will most likely be high if task values and expectancies are both high. If either task values or expectancies are low, achievement motivation may be maintained if the other motivational component is high. However, if either task value or expectancy is zero, then the resultant interaction will cancel the task achievement motivation value.

Eccles and Wigfield (2002) further defined four sub-components of task value for achievement motivation: "attainment value or importance, intrinsic value, utility value or usefulness of the task and cost" (p. 72). Attainment value refers to the personal importance of a task to a person's self-concept. Intrinsic value refers to the personal interest or enjoyment/liking of a task. Utility value refers to the usefulness/importance of a task. Cost value refers to the investment of effort or emotional risks. The components of achievement motivation are applicable to teachers' integration of the Internet.

Loyd and Gressard (1984, 1985, 1986) developed a Computer Attitude Scale (CAS) that sought to examine the components of motivation related to achievement motivation theory. Their research focused on individuals' attitudes toward learning about and working with computers. Historically, researchers have used this survey to explore teachers' beliefs concerning the use of technology (Busch, 1995; Christensen & Knezek, 2000; Christensen, 2002; Compeau, Higgins, & Huff, 1999). The scale tests four teacher attitudes found to be important to technology integration: usefulness/importance, confidence, anxiety and enjoyment/liking. All of these factors are critical components of motivation and applicable in an examination of teachers' motivation to integrate the Internet. The four attitudes are closely related to Vroom, Eccles, and Wigfield's theories of motivation. This research employs the culmination of achievement motivation theory and the attitudes represented in the CAS. Figure 1 provides an illustration of these relationships. The following four sections of this literature review offer more detailed research about how these four attitudes relate to integration.

Figure 1. A diagram of the relationships that exist among Vroom, Eccles and Wigfield's achievement motivation components and the four subscales of Loyd and Gressard's CAS.



Computer Usefulness/Importance

Loyd and Gressard (1986) identified computer usefulness or importance as a motivational perception key to teachers' integration of technology. Several studies have addressed the relationship that exists between teachers' perceptions of the usefulness/importance of the computer and their instructional integration of technology.

Studies conducted by Ravitz (1998), Manternach-Wigans (1999), and Zhao and Frank (2003) found that a positive relationship existed between teachers' perceptions of the usefulness or importance of technology and the Internet and their integration of these tools for instructional purposes. In a survey of 238 Internet-using teachers in schools with leading-edge technology, Ravitz found that 92% of the teachers suggested that one reason for their use of the Internet is that the students benefited from its use and believed it to be important for their students. An underlying theme that was identified in many of the focus group sessions conducted in Manternach-Wigan's study was that many of the

teachers who integrated technology suggested "preparing students for the future—for college and the work force—is one of the best motivations for using technology in the classroom" (p. 57). Zhao and Frank replicated these findings in their quantitative study of technology uses in 19 schools, which also found that teachers with a more positive value of technology tend to use computers more frequently in the classroom.

These studies support the notion that teachers who frequently integrate technology for instructional purposes also perceived them to be important and useful tools for their students. Teachers who did not perceive technology as a useful tool were less likely to integrate it in their classrooms. These studies suggest the need for teachers to be given opportunities where they can observe and learn about the usefulness and importance of using technology with students; therefore, increasing their likelihood of integrating technology in their classroom.

Computer Confidence

Computer confidence is the second motivational perception that Loyd and Gressard (1986) identified as being important to teachers' technology integration. According to Wang, Ertmer and Newby (2004) "there is substantial evidence to suggest that teachers' belief in their capacity to work effectively with technology—that is, their self-efficacy for technology integration—may be a significant factor in determining patterns of classroom use" (p. 231).

Studies have found that a positive relationship exists between teachers' degree of confidence and their instructional integration of technology (Abbitt & Klett, 2005; Franklin, 2005; Madden, Ford, Miller, & Levy, 2005; Pierson, 2001; Ropp, 1999; Vanfossen, 1999). These studies identify one underlying theme: teachers who integrate

technology in their classroom tend to have higher levels of confidence in their technology skills than those who do not integrate technology.

Three studies examined in-service teachers, who received no additional technology training throughout the study. The studies examined current classroom practices of teachers and found that teachers who used technology in their classroom tend to be more confident in their skills than teachers who did not integrate technology. In his quantitative study of 191 high school social studies teachers in Indiana, Vanfossen (1999) found that the "most powerful predictor of Internet use was the teacher's degree of comfort using the Internet" (p. 95).

A more recent study by Madden, Ford, Miller, and Levy (2005) examined 188 secondary teachers' integration of the Internet. The researchers for this study created a questionnaire that they created based on interviews with teachers from one school that participated in the study. This study also found a positive relationship between teachers' use of the Internet and their level of confidence. Similarly, using a qualitative survey of "exemplary technology-using teachers," Pierson (2001) found that the more confident teachers were in using technology the more likely they were to use it with their students.

Additional studies examined preservice teachers before and after a computer-training program. Ropp (1999) found in his quantitative study of 47 preservice teachers that the participants reported feeling more confident after they attended training sessions and more likely to use technology in the classroom due to their increased confidence level. A quantitative study of pre-service teachers conducted by Abbitt and Klett (2007) utilized pre- and post- measurements to examine possible influences on teachers'

integration of technology. The study found that confidence often increased with technology training.

If teachers do not believe they are competent enough to successfully integrate technology, they are less likely to integrate it in their classrooms (Franklin, 2005; Madden, Ford, Miller, & Levy, 2005). These studies establish a positive relationship between teachers' level of confidence and their instructional integration of technology. Furthermore, studies by Ropp (1999) and Abbitt and Klett (2007) illustrate the close connection between first- and second-order barriers. They showed the importance of training (first-order barrier) on teachers' level of confidence (second-order barrier) concerning their integration of technology. Training can assist in affording teachers the confidence necessary for successful integration.

Computer Anxiety

Computer anxiety has been identified as a common motivational factor affecting teachers' integration of technology (Compeau, Higgins, & Huff, 1999; Rovai & Childress, 2003). The third attitude that Loyd and Gressard (1984, 1985, 1986) identified as important to teachers' integration is computer anxiety. Studies have found that a low level of computer confidence is negatively correlated with increased computer anxiety among teachers (Hong & Koh, 2002; Rovai & Childress, 2003). Also the research (Rovai & Childress, 2003) has shown that teachers with increased levels of computer anxiety are less likely to integrate technology in their classrooms.

In a study of 92 teacher education students, Rovai and Childress (2003) found that the strongest predictor of computer anxiety was low level of computer confidence. Teachers who experienced reduced computer anxiety were more confident in their

computer skills and more likely to use technology. Similarly, in a study of 200 secondary school teachers in Malaysia, Hong and Koh (2002) found that the participants with lower levels of computer anxiety had more positive attitudes toward integrating technology in the classroom.

These studies suggest a negative correlation between teachers' computer anxiety and confidence level. They also establish that a negative relationship exists between teachers' computer anxiety and instructional integration of technology. If schools want to increase teachers' integration of technology, they must examine methods for decreasing the anxiety teachers' experience when integrating technology.

Computer Enjoyment/Liking

The fourth attitude Loyd and Gressard (1984, 1985, 1986) found important to teachers' integration of technology is computer enjoyment. Although the research concerning this component of motivation and technology integration is limited, two studies suggest a positive relationship may exist between teachers' level of enjoyment using technology and their integration of technology in the classroom (Manternach-Wigans, 1999; Rovai & Childress, 2003).

In their study of 92 teacher education students, Rovai and Childress (2003) found that computer liking and enjoyment were strong predictors of low computer anxiety. Since Rovai and Childress determined that low levels of computer anxiety correspond to increased integration of technology, a positive relationship may exist between teachers' enjoyment/liking level and their integration of technology in the classroom.

In Manternach-Wigans' (1999) study of factors that motivate teachers to integrate technology, she found that one of the "most frequently mentioned motivations for

technology integration is the teacher's enthusiasm to use technology" (p. 55); therefore, establishing a positive relationship between computer enjoyment/liking and integration.

One key point that the study advises as instrumental to increasing technology use in schools is for teachers to be given the opportunity to use technology in ways they find enjoyable (Manternach-Wigans, 1999). If teachers discover methods of using technology for enjoyment/liking, then they are more likely to use technology with their students.

Summary

The Internet has become an instrumental tool in the classroom. There are many educational resources available to teachers through the Internet. Although teachers' integration of Internet has increased in recent years, their use of this resource remains an area of concern. Many researchers have studied the barriers that teachers' encounter when integrating the Internet in their classrooms. This chapter has explored the many first- and second-order barriers that are often discussed in the literature. Although first-order barriers are important to teachers' integration, ultimately the teacher determines the level of integration in the classroom. Research focusing on second-order barriers often explores teachers' beliefs and motivational perceptions. This research further explored the possible relationships that may exist between teachers' motivational perceptions and their level of integration of Internet tools and the types of tools they choose to integrate.

The studies examined in this review of literature provide a basis for the present research of teachers' motivational perceptions and instructional integration of the Internet. Studies were examined in all areas of Loyd and Gressard's (1984, 1985, 1986) CAS: computer usefulness/importance, computer confidence, computer anxiety, and computer enjoyment/liking. The reviewed studies support this research in part; however,

they only examine one or two of the motivational perceptions at a time. Also they do not examine the research from one unifying framework. Using the expectancy-value theory of achievement motivation, this study collectively examined all four motivational perceptions and the relationships that may exist to the instructional integration of the Internet. This study furthers current research by exploring the integration practices of teachers by placing them in four integration/motivation categories and examining their use of tools within the eight categories of Internet tools discussed in this review of literature.

CHAPTER III

METHODS

This mixed methods study sought to understand why some teachers eagerly integrate the Internet in the classroom while others are hesitant to use the Internet with their students. More specifically, this mixed methods study explored how elementary teachers' perceptions of the extent of Internet usefulness/importance, enjoyment/liking, confidence, and anxiety may relate to their level of instructional Internet integration. Additionally, this study explored how these motivational perceptions and current integration practices differ between four subgroups of elementary school teachers. The purpose of this chapter is to provide a description of the research design and participants, as well as the data collection and data analysis procedures.

Research Questions

Through this study, the researcher addressed the following overarching research question: How do motivational perceptions and current practices concerning instructional integration of the Internet differ among elementary teachers in a southeast Georgia school system?

The following specific questions served as lines of investigation for this study:

1. What are the reported motivational perceptions of elementary teachers toward instructional integration of the Internet?
2. How do subgroups of elementary teachers (HMHI, HMMI. MMMI, and MMLI) differ in their reported motivational perceptions?
3. What are the reported Internet integration practices of elementary teachers?

4. How does the reported use of Internet tools differ among four subgroups of elementary teachers?
5. Is there a significant relationship among motivational perceptions and level of integration?

Research Design

Technology integration has been examined from multiple perspectives. Some researchers have examined this research from a positivist perspective using quantitative methods for their research (Loyd & Gressard, 1986; Ravitz, 1998; Ropp, 1999). Others have examined the research from a constructivist perspective utilizing qualitative methods for their research (Manternach-Wigans, 1999; Pierson, 2001). The conceptual framework for this research is a combination of these two methods. Cupchik (2001) has identified this research perspective as constructivist realism, which offers a holistic approach to research by combining both quantitative and qualitative methods.

Although some researchers argue that quantitative and qualitative research are incompatible and that researchers should choose one method in their research (Lincoln & Guba, 2000), others suggest that the two can complement one another and that both are necessary to educational research (Biddle & Anderson, 1986; Cupchik, 2001). Cupchik's constructivist realism approach allows for the combination of both methods in research.

Quantitative and qualitative methods are recursive, one can lead to the other and the sequence depends on the researcher (Cupchik, 2001). Cupchik proposes:

> Statistically significant effects (quantitative) can draw our attention to socially meaningful events, which are then re-examined in descriptive depth. This interplay between descriptive richness and experimental precision can bring accounts of social phenomena to progressively greater levels of clarity. Together,

> qualitative and quantitative methods provide complementary views of the phenomena. (¶ 33)

The mixed methods approach "typically involves the use of qualitative data to gain insights into the meaning of quantitative results or to support or corroborate such results" (Gay, 1996, p. 232). The inclusion of personal quotes, interviews, observations and numerical data can enhance a study and provide greater validity (Brewer & Hunter, 1989; Bryman, 1988). Data gathered from quantitative surveys and questionnaires can "help reframe the problem and provide a new focus for in-depth descriptive study" (Cupchik, ¶ 28). The ultimate goal of any researcher is to provide an accurate and holistic glance into social phenomena. By utilizing both approaches, the researcher is able to provide both empirical and natural data, allowing for a more comprehensive examination of the research.

The inclusion of both research methods is important to this research. The quantitative method, e-survey, allows the researcher to identify possible relationships between teacher's perceived level of integration and motivational perceptions. It also provided the researcher a method for identifying and placing teachers in the four motivation-integration subgroups necessary for the qualitative portion of this research. The qualitative method, semi-structured interviews, allowed the researcher the opportunity to further explore through interviews how motivational perceptions and current practices may differ among elementary teachers in one southeast Georgia school system.

E-research

The researcher chose to use an online survey or e-survey for the quantitative portion of the research. The rapid growth of the Internet has made the Internet a likely source for gathering data for research. However, when one decides to conduct e-research, there are both positive and negative issues that she must consider. According to Anderson and Kanuka (2003), there are advantages of using e-research techniques. These authors noted that one of the most important advantages of using e-research is "immediate respondent feedback" (p. 147). Unlike pen and paper surveys, participants may participate in the survey immediately. There is no wait time for the surveys to circulate through the mail. A study conducted by Yun and Trumbo (2000) found that e-surveys have higher return rates than traditional research methods. This can be attributed to the efficiency and flexibility of an e-survey (Anderson & Kanuka, 2003; Kerns, 2000; Vazire, Srivastava, & John, 2004). Additionally, e-surveys allow for immediate analysis of data; therefore, saving the researcher time (Vazire, Srivastava, & John, 2004).

E-surveys can be a very useful tool for conducting research; however, there are some potential obstacles that the researcher must consider. One potential obstacle with e-research is confidentiality and security (Anderson & Kanuka, 2003). The use of the Internet for research increases the concern of security because individuals may manipulate the environment to access the data. The researcher created a secure environment by protecting the data through password access. The password was only accessible to the researcher and the system technology coordinator. A second potential obstacle to e-surveys is ensuring authenticity of the participants (Anderson & Kanuka, 2003; Vazire, Arivastava, & John, 2004). Although, it is impossible to ensure

authenticity of the participants, the researcher required participants to use their personal login information to participate in the study. Third, Anderson and Kanuka (2003) suggest procrastination as a potential obstacle to e-research when the invitation is granted through e-mail. The researcher must ensure that participants do not procrastinate by creating a subject line that catches the participant's attention and encourages quick response to the e-survey. Also, the researcher sent frequent reminders via e-mail to ensure response from participants.

Interviews

The qualitative portion of this research included semi-structured interviews. Kahn and Cannell (1957) described interviewing as "as a conversation with a purpose" (p. 149). More specifically, semi-structured interviews ask a series of questions and then use open-form questions to probe more deeply for additional information (Gall, Borg, & Gall, 1996). The researcher utilized semi-structured interviews to ensure that the same questions are asked in the same way, which reduces the possibility of interviewer bias and error (Dereshiwsky, 2002). Additionally, the researcher chose to use a semi-structured interview because it is "a useful way to get large amounts of data quickly" from individual participants and it allows the researcher to better understand the feelings of each of the participants through observation (Marshall & Rossman, 1999, p. 108).

Participants

Site Selection

The study was conducted with teachers at the elementary level. The three schools involved in the research included pre-kindergarten through fifth grades. The researcher chose to work with elementary teachers, grades kindergarten to fifth, because they

typically work with students in self-contained classrooms and have extended and more flexible time with their students (Becker, 2000). Pre-kindergarten teachers were not included in this study because these teachers use software specifically designed for their program, which does not allow for integration of the Internet.

The research was conducted with the Rose School District. All names are fictitious to protect the confidentiality of participants. The district is located in rural southeast Georgia. Rose School District serves approximately 3,421 students. The system has three elementary schools, two middle schools, and one high school. Only the three elementary schools were included in this study. These elementary schools serve approximately 1,870 students. The percentage of students who qualify for free or reduced lunch within the three elementary schools ranges from 68% to 81%. All three elementary schools hold Title I status and have been recognized as *Title I Distinguished Schools*. School A has a larger percentage of students receiving free or reduced lunch and a larger Hispanic population. School C serves about half the number of students as the other two schools. Table 1 provides additional demographic information for the schools participating in this study.

The researcher has chosen to work with teachers in this school system because the schools have received equitable technology funding. Rose School District has made a great commitment to providing students and teachers the hardware, software, training, and support necessary for successful integration. In an effort to provide teachers the necessary hardware, the system has supplied each classroom teacher with a laptop that is connected to the school's wireless network. Every instructional classroom has wireless

Table 1

School Demographics

School	Enrollment	White	Black	Hispanic	Other	Free/Reduced Lunch[a]
School A	719	47%	25%	24%	4%	81.41%
School B	813	53%	25%	17%	5%	68.64%
School C	345	66%	19%	10%	5%	72.17%

Note. Data retrieved from the Georgia Department of Education Student FTE Data Collection System October 13, 2009. [a] Data reported in the system cafeteria database as of October 30, 2009.

access. Each elementary classroom has at least one modern computer (Pentium IV or higher) with Internet access. Additionally, each elementary school has at least one permanent computer lab and two mobile labs. School C has a lower number of students per instructional computer. School A has a larger number of computers available in a wireless mobile lab. Table 2 provides additional data concerning available technology in each school.

Table 2

Technology Demographics

School	Instructional computers connected to the Internet	Students per instructional computer	Computers: Wireless Mobile Labs	Computers: Stationary Labs
School A	183	3.37	81	26
School B	203	3.11	50	20
School C	140	2.11	54	35

Note. Data retrieved from the 2007 Georgia Department of Education Technology Inventory.

In an effort to provide support to the teachers, the system funds one full-time technology director and two full-time technology support staff at the district level. The technology director is responsible for administration and maintenance of technology and directs training and support for the system. Technology support staff provide hardware and software support across the system. A technology support staff member visits each school on a pre-determined day each week to handle hardware and software issues at the school level. Teachers are able to log tickets through a school web portal to report any technology issues. Technology staff can monitor and address teacher requests through this portal. The media specialist at each school is also available to support teachers in the integration and use of the Internet in the classroom at the school level.

Technology professional development training is provided throughout the school year and summer. This is offered on a voluntary basis. Media specialists offer technology classes throughout the school year, which address technology needs specific to each school. Based on a professional learning survey administered to school staff, additional technology training is offered in the summer. The researcher chose to work with this school system because of its continued commitment to technology. The system has placed great emphasis on providing hardware, software, and training necessary for effective technology integration. This has minimized many of the first-order barriers teacher's often experience and allows the researcher to focus on second-order barriers.

Sample Selection

The participants for this study are elementary school teachers within the Rose School District. The grade levels for the teachers range from kindergarten through fifth grades. There are approximately 118 teachers included in these grade levels. The

teachers in this study have varying levels of technology training, resources, and skills. Level of education and years of experience also vary among participants. Once the researcher was granted permission from the superintendent to conduct the study, the researcher requested a list of teachers by grade level from the media specialist at each school. Once approval from the IRB was granted, these teachers were invited via e-mail to participate in this study.

Instrumentation

E-survey

The researcher adapted a 44-item survey that served as a tool that provided quantitative data pertaining to teachers' motivational perceptions and current Internet integration practices and for identifying teachers for the interview sample. The survey was administered to kindergarten through fifth grade teachers via the Rose School District website. Teachers were required to login to their school e-chalk account, which gave them access to their individual school and system website, to participate in the e-survey. The e-survey, or Survey of Teachers' Internet Motivation and Integration (STIMI), is comprised of three sections.

Section I, Teacher Motivation Scale (TMS), consists of 32 questions adapted from Loyd and Gressard's (1986) Computer Attitudes Scale (CAS), which examines teachers' motivational perceptions. The researcher has been granted permission to use and adapt the CAS to fit within this area of research (see Appendix C). The original scale addressed the use of general technology. The TMS adjusts the CAS questions to examine Internet integration instead of general technology use. The original CAS consisted of 40 questions. The researcher removed eight questions, two from each subcategory of the

CAS, to maintain a reasonable number of questions on the STIMI. Questions 7, 10, 13, 16, 18, 22, 25, and 36 were removed from the original survey to create the TMS.

Section I utilizes a four-point scale. The possible answers range from "strongly agree" to "strongly disagree." Each response was assigned a score from 1 to 4 with 1 associated with low motivational perception and 4 with high motivational perception. For the questions that were positively stated, 4 corresponds with "strongly agree." For those negatively stated questions, 1 corresponds to "strongly agree."

The scores for the 32 items were summed to provide a motivation score. Motivation scores ranged from 32 to 128. The researcher derived cutoff scores by identifying teachers who reported a one or two for each question as having low motivation to integrate the Internet and those receiving mostly three and four points for each question as highly motivated. Teachers who received a score between 32 and 64 are considered to have low motivation (LM) to use the Internet in the classroom. Scores between 65 and 95 are considered moderately motivated (MM). Highly motivated (HM) teachers are those receiving a score between 96 and 128. Higher scores correspond to higher levels of motivation. Additionally, four motivation subscores were obtained from Section I survey questions. The subcategories and the survey items that fit into each category are given in Table 3.

Table 3

Motivational Perceptions and the TMS

Motivational Perception	Survey Item	
	Negative	Positive
Usefulness/importance	7, 15, 18, 32	4, 10, 21, 25
Enjoyment	12,17, 24, 31	3, 9, 20, 28
Confidence	2, 14, 19, 27	6, 11, 23, 30
Anxiety	5, 16, 22, 29	1, 8, 13, 26

Concurrent reliability for the CAS had been established in previous studies. The reliability estimates established by Loyd and Gressard (1986) ranged from .82 to .90. A study by Christensen and Knezek (2000) that utilized the CAS established similar subscale reliabilities, which ranged from .81 to .91. The pilot study established an overall Cronbach's alpha reliability coefficient of .84. Additionally, the pilot study established Cronbach's alpha reliability coefficient for each subscale: usefulness/importance .70, enjoyment/liking .74, confidence .79, and anxiety .91. These subscales or motivational perceptions are based on the expectancy-value theory of achievement motivation (Vroom, 1995).

Section II, Integration Practice, contains three items; three of which were adapted from Section III—"your experience with computer technologies" (p. 204)—of Wozney, Venkatesh, and Abrami's (2006) Technology Implementation Questionnaire (TIQ). The researcher has been granted permission to use this portion of the TIQ for this research (see Appendix D). This section examined "teachers' self-reported proficiency and

current use" of the Internet (Wozney, Venkatesh, & Abrami, p. 179). Questions 33 and 35 were adapted from the TIQ to address teachers' integration of the Internet instead of general computer technologies. The researcher added Question 34 to examine how many days per week the teacher integrates Internet activities in her classroom. An integration score is derived from Section II. Each question utilizes a six-point scale. Each answer receives a value of one to six, which corresponds directly with letters A to F. Each possible answer receives the following points: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6. Scores range from 3–18. Participants with scores ranging from 3–6 are considered to be low integrators of the Internet (LI), 7–14 moderate (MI), 15–18 high integrators (HI). Low integrators are teachers who received mostly a one or two (A and B) for each question and high integrators are teachers who frequently selected answers that earned five or six points (E and F) for each question.

Section III includes nine questions, which identify teachers' perceived use of various educational Internet tools. The questions explore teachers' integration of various tools within the eight categories of educational Internet tools. Each question allows the teacher to select how often they integrate these tools in her class each month. There are four possible selections: A. Never, B. 1–5, C. 5–10, and D. more than 10. Table 4 presents an analysis of the relationships that exist among the STIMI, the findings of the review of literature, and the research questions.

Table 4

Item Analysis of Survey Items and Research Questions

Survey Questions	Literature Review Citations	Research Question
Anxiety: 1, 5, 8, 13, 16, 22, 26, 29	Compeau, Higgins, & Huff, 1999; Hong & Koh, 2002, Loyd & Gressard, 1984, 1985, 1986; Rovai & Childress, 2003	1, 2, 5
Confidence: 2, 6, 11, 14, 19, 23, 30	Abbitt & Klett, 2005; Franklin, 2005; Loyd & Gressard, 1984, 1985, 1986; Madden, Ford, Miller, & Levy, 2005; Pierson, 2001; Ropp, 1999; Vanfossen, 1999; Wang, Ertmer, & Newby, 2004	1, 2, 5
Enjoyment/Liking: 3, 9, 12, 17, 20, 24, 28, 31	Loyd & Gressard, 1984, 1985, 1986; Manternach-Wigans, 1999; Rovai & Childress, 2003	1, 2, 5
Usefulness/Importance: 4, 7, 10, 15, 18, 21, 25, 32	Loyd & Gressard, 1984, 1985, 1986; Manternach-Wigans, 1999; Ravitz, 1998; Zhao & Frank, 2003	1, 2, 5
Integration Practices: 33–35	CDW-G, 2006, Levin & Arafeh, 2002; Madden, Ford, Miller, & Levy, 2005; NCES, 2003, 2005	3, 5
Internet Tools: 36–44	CDW-G, 2006; Zhao & Frank, 2003	4

Interviews

Once the teachers were placed into one of the four motivation-integration categories (High Motivation/High Integration [HMHI], High Motivation/Moderate Integration [HMMI], Moderate Motivation/Moderate Integration [MMMI], and Moderate Motivation/Low Integration [MMLI]), the researcher conducted semi-structured interviews with twelve teachers. A preliminary interview guide was developed (see Appendix B) based on the data analysis of the STIMI, so the researcher could further explore key findings. Nine interview participants included three teachers from each of the HMHI, HMMI, and MMMI subgroups. Three additional interview participants from the outlying subgroups (MMHI, MMLI, and HMLI) also participated in the interview.

The interview questions were based on the four motivational perceptions that the CAS and the theory of achievement motivation identify as important to integration. These questions allowed the researcher to further explore and gain a better understanding of the motivational perceptions that encourage or discourage teachers to integrate the Internet in their classrooms. Additionally, the interview included questions that explore the types of Internet tools that teachers are using and how they are integrating them into their instructional routine. The interview provided insight into the differences and similarities that may exist among the four categories of teachers and other factors that may influence their integration of the Internet in the classroom.

Procedures

E-survey

First, permission to conduct the study was obtained from the system superintendent (see Appendix H), building administrators (see Appendix I), and the

Internal Review Board (IRB) (see Appendix J). An expert panel comprised of the technology director and five media specialists from the participating school system reviewed and evaluated the survey for content validity. The review panel recommended emphasizing "integrating the Internet in the classroom with students" in the initial directions and "with your students" in the Section III directions. The review panel agreed that this emphasis needed to be made to ensure that participants understood that the questions pertained to integration with students and not professional use. The researcher addressed these suggestions by underlining "integrating the Internet in the classroom with students" in the initial directions and using a bold type face and underlining "with your students" in the Section III directions. This review was designed to ensure that the survey measured what it intended to measure and with these changes the panel agreed that the content of the survey was valid. The panel also suggested including Web 2.0 tools within the current categories and not creating a separate category. The panel felt that this categorization is quite new and many teachers would recognize some of the tools within the category but would not be familiar with the term "Web 2.0." Also, one expert suggested the tool, United Video Streaming, was too narrow and that Multimedia would be a more comprehensive category.

Once the expert panel reviewed the e-survey and the researcher made the necessary changes, a pilot study of the STIMI was conducted to reestablish reliability of the survey instrument. A pilot study was conducted with 30 elementary teachers in a neighboring school system. Although reliability had been established on the original survey (CAS), the researcher adapted the original survey to correspond within this specific area of research. The data from the pilot study was analyzed using NCSS

software. The surveys were analyzed and Cronbach's alpha reliability coefficient was determined for the overall survey and the four motivation subscales. The reliability coefficient for the STIMI was .84. The subscale reliabilities were usefulness/importance .70, enjoyment/liking .74, confidence .79, and anxiety .91. This pilot study established that the STIMI was a reliable survey.

Once reliability was established, the researcher administered the STIMI. A list of names of all elementary teachers and their e-mail addresses was requested from the media specialist in each elementary school in the Rose School District. First, the researcher sent an e-mail to 118 teachers inviting them to participate and explaining the purpose of the e-survey, STIMI. The e-mail included the informed letter of consent as an attachment (see Appendix E) and an explanation that the e-survey would not be anonymous because the data retrieved from the survey would enable the researcher to identify teachers to participate in the interview. However, the names and information remained confidential and only accessible to the researcher and system technology director. Additionally, the e-mail provided directions on how to access and complete the e-survey.

Originally, the researcher instructed the participants that the survey would be available for two weeks; however, at the two week cut off point only 44% of the participants had responded to the STIMI. In an effort to encourage participation, the researcher asked the system technology director to send out a reminder of the e-survey and extended the survey an additional week. After the one-week extension, the researcher had a desired sample size of 93 (79%). The data from the STIMI was downloaded as a text file and converted to an Excel file. Then the Excel file was

imported into Statistical Package for the Social Sciences (SPSS) 17.0. Once the data was in SPSS, it was analyzed and quantitative measures were computed.

The researcher chose to utilize the system web portal for administration of the STIMI because teachers have familiarity with this process. Teachers are required to participate in school and system-wide surveys via this web portal. Each teacher that agreed to participate used her personal information to login to her school website. This login is necessary because it allowed the researcher to use the retrieved data to identify teachers in each of the motivation-integration categories. Once the teacher successfully logged-in, she navigated to the district resources link and selected the Technology Survey (elementary teachers) link. This link allowed teachers to begin the survey. The survey began with a consent statement that informed the teacher that by completing the e-survey they are granting the researcher consent to use the information. If the teacher agreed to participate, she was required to type her name and date in the answer section at the end of the consent form. Then directions were provided for completing the STIMI. Teachers used these directions to select the most appropriate answer to each question. Once they completed the STIMI, they clicked submit and the data was stored for analysis by the researcher. The researcher transferred the data to Statistical Package for the Social Sciences (SPSS) for the purpose of analysis.

Additionally, motivation and integration scores were derived from the data that allowed the researcher to place participants into motivation/integration subgroups. A motivation score was derived from Section I of the STIMI. The answer to each question received a numeric value ranging from one to four. The motivation score is the total value of all questions in Section I (see Appendix A). The integration score is derived

from Section II. The answer to each question in Section II received a numeric value of one to six. The values allowed the researcher to place teachers in the four motivation-integration categories based on the TIMM. Figure 2 provides an illustration of the TIMM.

Table 5

Teacher Integration/Motivation Matrix (TIMM)

High Motivation/High Integration (HMHI) Motivation Score: 96–128 Integration Score: 15–18	High Motivation/Moderate Integration (HMMI) Motivation Score: 96–128 Integration Score: 7–14
Moderate Motivation/Moderate Integration (MMMI) Motivation Score: 65–95 Integration Score: 7–14	Moderate Motivation/Low Integration (MMLI) Motivation Score: 65–95 Integration Score: 3–6

Interview

The researcher developed a preliminary interview guide that further explored the teachers' motivational perceptions and Internet integration practices. First, the researcher pilot tested the interview guide with two teachers in a neighboring school district. Questions 3 and 4 of the preliminary interview guide were adapted to encourage participants to share personal experiences concerning their use of Internet tools in the classroom and specific lessons.

Originally, the qualitative portion of this research included semi-structured interviews with three teachers in each of the four motivation-integration categories but

once the survey was administered there were only two participants in the MMLI category. The researcher, after reviewing the number of individuals in each category, decided the interview participants would include three teachers from the HMHI (Category 1), HMMI (Category 2), and MMMI (Category 3) categories. The researcher selected one teacher in each of the grade categories: kindergarten/first, second/third, and fourth/fifth grades. Additionally, the researcher decided to interview one teacher in the MMLI, HMLI, and the MMHI categories, which all included only one participant with no missing data.

Each interview participant was sent an e-mail requesting their participation. Interviews were scheduled during April/May, 2009. The interviews lasted approximately 45 minutes. Recordings of the interviews were reviewed and coded, so the researcher could determine patterns that existed among participants' responses. The researcher, to ensure confidentiality of the interview participants, safely stored the handwritten notes, digital recordings, and transcription of the interviews in a locked filing cabinet in the researcher's home.

Analysis

E-survey

In the quantitative analysis, subtests of Section I of the STIMI (computer usefulness, computer enjoyment, computer confidence, and computer anxiety) were examined and the mean, median, mode, and standard deviation were determined for each (Research Question 1). Additionally, Section I was analyzed to determine the percentage of teachers selecting a particular response to each question (Research Question 1). An integration and motivation score was given to each participant based on her answers to

Section I and II (Research Question 2). The researcher utilized four one-way Analysis of Variances (ANOVAs) to examine the differences in motivational perceptions that may exist among the four subgroups of teachers (Research Question 2). Data from Section II were analyzed and mean, median, mode, standard deviation and percentage of teachers selecting a particular response was determined (Research Question 3). The research analyzed the data for Section III of the STIMI by providing descriptive statistics that illustrate the percentages of teachers in each motivation/integration category selecting a particular Internet tool (Research Question 4). The researcher examined the possible correlation between teacher's motivational perceptions and integration of the Internet by comparing the motivational perceptions and level of integration using Pearson's r correlation coefficient (Research Question 5).

Interview

In the qualitative analysis, the researcher analyzed the interview data by reviewing the digital recordings and written notes of each interview. The researcher compared and contrasted the transcribed text of the interviews and recurrent themes and patterns were identified and further explored (Research Questions 1, 2, and 3). The researcher provides a narrative description of key findings from an analysis of the interviews. Once the analysis of the information was conducted the digital recordings and notes were destroyed unless otherwise instructed by the participant.

Summary

This study explored elementary teachers' motivational perceptions and how they may relate to their integration of the Internet in the classroom. The study examined the motivational perceptions and Internet integration practices of elementary teachers in one

southeast Georgia school system. This study utilized a mixed method approach by utilizing a quantitative e-survey and qualitative interviews. An online survey, STIMI, provided the quantitative data for this research. Qualitative data was provided from interviews with 12 participants. An analysis of the research data is provided in Chapter 4.

CHAPTER IV

ANALYSIS OF DATA

The goal of this mixed methods study was to better understand the motivational perceptions and current Internet integration practices of elementary teachers and to explore possible relationships that may exist between them. The four motivational perceptions that were examined are usefulness/importance, confidence, anxiety, and enjoyment/liking. The study was conducted in a small, rural school system in southeast Georgia. Ninety-three kindergarten through fifth grade teachers in the Rose School District were invited to participate in this study. The researcher utilized an e-survey, Survey of Teachers' Integration and Motivation Instrument (STIMI), for the quantitative portion of this study and semi-structured interviews for the qualitative portion.

Research Questions

Through this study, the researcher addressed the following overarching research question: How do motivational perceptions and current practices concerning instructional integration of the Internet differ among elementary teachers in a southeast Georgia school system?

The following specific questions served as lines of investigation for this study:

1. What are the reported motivational perceptions of elementary teachers toward instructional integration of the Internet?
2. How do subgroups of elementary teachers (HMHI, HMMI. MMMI, and MMLI) differ in their reported motivational perceptions?
3. What are the reported Internet integration practices of elementary teachers?

4. How does the reported use of Internet tools differ among four subgroups of elementary teachers?
5. Is there a significant relationship among motivational perceptions and level of integration?

Respondents

The participants for this study were teachers from the Rose School District. The researcher sent an invitation to 118 kindergarten through fifth grade teachers in the district. The teachers were instructed that their participation was voluntary and they could withdraw from the study at anytime. The researcher had a participation rate of 79% with 93 teachers taking the e-survey on the system website. School A had the greatest participation rate of 90%. School B had the smallest percentage (68%) of participation. Table 5 provides additional information concerning teacher participation for each school.

Table 6

Participant Participation

School	# of Teachers	# of Teachers Completing Survey	% of Teachers Completing Survey	% of All Participants
School A	48	43	90	46
School B	50	34	68	37
School C	20	16	80	17
Total	118	93	79	100

The researcher placed respondents into motivation-integration categories. First, the scores for questions 1–32 were summed to provide a motivation score. Motivation

scores range from 32 to 128. Teachers who received a score between 32 and 64 were considered to have low motivation (LM) to use the Internet in the classroom. Scores between 65 and 95 were considered moderately motivated (MM). Highly motivated (HM) teachers were those receiving a score between 96 and 128.

Second, an integration score was determined by assigning numeric values to questions 33–35. Each question utilized a six-point scale. Each answer received a value of one to six, which corresponds directly with letters A to F. Each possible answer received the following points: A = 1, B = 2, C = 3, D = 4, E = 5, F = 6. Scores ranged from 3–18. Participants with scores ranging from 3–6 were considered to be low integrators of the Internet (LI), 7–14 were moderate integrators (MI), 15–18 were high integrators (HI).

The combination of the motivation-integration scores produced four major subgroups: High Motivation/High Integration (HMHI), High Motivation/Moderate Integration (HMMI), Moderate Motivation/Moderate Integration (MMMI), and Moderate Motivation/Low Integration (MMLI). Two participants scored in outlying subgroups: High Motivation/Low Integration (HMLI) and Moderate Motivation/High Integration (MMHI). The researcher did not include these two categories in the quantitative analysis because it would make the data unreliable; however, the two respondents were selected to participate in the interview.

Approximately 87% of the respondents were classified in the HMHI (38.9%) or HMMI (47.8%) motivation-integration subgroups. Only 13.3% of the respondents were classified as MMMI (11.1%) and MMLI (2.2%). The majority of teachers (86.7%) scored in one of the high motivation categories (HMHI and HMMI). Table 6 provides

additional data concerning the number of participants in each motivation-integration category.

Table 7

Frequencies and Percentages of Teachers in Motivation-Integration Subgroups (N=90)

Motivation-Integration Category	Frequency	Valid %
High Motivation/High Integration	35	38.9
High Motivation/Moderate Integration	43	47.8
Moderate Motivation/Moderate Integration	10	11.1
Moderate Motivation/Low Integration	2	2.2

Note. Three participants had missing data and could not be included in a motivation-integration subgroup.

Additionally, 12 teachers from the 93 respondents were selected for the interview portion of this study. These teachers were selected based on their motivation and integration scores, which were derived from the STIMI. Once the teachers were placed into the motivation-integration categories, the researcher selected one teacher from each grade category (K–1, 2–3, and 4–5) from the HMHI, HMMI, and MMMI subgroups to participate in the interview portion of this study. Additionally, one teacher from the MMLI, HMLI, and MMHI subgroups was also selected. These motivation-integration subgroups had only one participant with valid data, so the researcher believed interviewing these teachers would provide richness to the study.

The interview participants differed in terms of years of experience, grades and subjects taught, skill level, and training. Unique identifiers are used for the interview participants. They are identified by their motivation-integration and grade categories. A brief description of each interview participant is provided.

HMHI(1) is a first grade teacher at School A. She has taught first grade for 3 years and the interview participant with the fewest years of experience teaching. HMHI(2) is a third grade teacher at School B. She teaches Language Arts and Reading and has been teaching for seven years. HMHI(3) is a fifth grade math teacher at School A. She has been teaching 13 years and has taught various grades and subjects. Also, she taught gifted students for two years at her previous school.

The researcher was able to include one teacher from each of the schools in the HMMI motivation-integration category. HMMI(1) is a kindergarten teacher at School A. She is currently in her twelfth year as a teacher. Prior to becoming a teacher, she was a paraprofessional for 4 years. She has taught kindergarten and first grades. HMMI(2) is a second grade teacher at School C. She has been teaching for nine years, which have all included teaching second grade. HMMI(3) is a fifth grade teacher at School B where she teaches Social Studies. She is currently in her 22nd year as a teacher.

The MMMI category included three teachers with 12 or more years of experience. MMMI(1) is a first grade Early Intervention Program (EIP) teacher at School A. She has taught kindergarten, first, and second grades. She has 12 years of teaching experience. MMMI(2) is a second grade teacher at School B. She has been teaching for 17 years. She has taught first through fourth grades. MMMI(3) is a fifth grade Reading teacher at School A. She has 22 years of teaching experience. She has taught second, third, and fourth grades.

The outlying group of teachers that were interviewed includes one teacher from MMHI, MMLI, and HMLI motivation-integration subgroups. MMHI is a kindergarten teacher at School B. She has five years of teaching experience but she was a

paraprofessional for 7 years before she became a teacher. She has taught kindergarten and first grade. MMLI is a second grade EIP teacher at School A. She provided an interesting outlook to the study because she has 52 years of teaching experience, the most of all interview participants. She has taught many grades and subjects; however, all have been in grades one to five. HMLI is a fifth grade Social Studies teacher at School C. She has 13 years of teaching experience. She has taught third through fifth grades.

These brief biographical descriptions showed the variety that existed among the interview participants. This variety added a broader view to the study concerning teachers' use of the Internet in the classroom. Analysis of their interviews is intertwined with the quantitative analysis. The researcher used interviews to delve deeper and gain a better understanding of the quantitative results.

Data Analysis

Research Question 1: What are the reported motivational perceptions of elementary teachers toward instructional integration of the Internet?

First, the researcher examined teachers' responses to Section I of the STIMI (Appendix A) to determine teachers' motivational perceptions and to answer this research question. The four motivational perceptions that examined usefulness/importance, confidence, anxiety, and enjoyment/liking (Loyd & Gressard, 1984, 1986). Section I had 32 questions, which examined these four motivational perceptions. Each response was assigned a numeric value of 1 to 4 with 1 associated with the least favorable response and 4 with the most favorable. The lowest possible score for each motivational perception was 8 (indicating a low level of motivation) and the highest possible score was 32 (indicating a high level of motivation). One clarification needs to be emphasized

concerning the motivational perception of anxiety. A high score for anxiety indicates a low level of anxiety experienced by the teacher. The motivational perceptions examined in Section I were assigned a numeric value and descriptive statistics were determined for each.

The motivational perception that had the highest average was usefulness/ importance with a mean score of 29.19. Although usefulness/importance had the highest mean, it had the least amount of variability (*SD*=2.86), which indicates most participants agree that the Internet is a useful tool to use with students in the classroom. Confidence had the lowest mean, which was 27.33 (*SD*=4.28). Although, confidence had the lowest mean it still indicated a high level of confidence among the teachers. More variability existed with confidence than usefulness/importance. All motivational perceptions had a mean within 1 or 2 points of each other. Also, there was little variability among all motivational perceptions. Table 7 provides additional descriptive statistics concerning teachers' motivational perceptions.

Second, the questions within each motivational perception were analyzed to determine the percentage of teachers giving a specific response to each question. This analysis provided the researcher with additional information to further answer this research question. The researcher also utilized data from the semi-structured interviews to explore teachers' motivational perceptions.

Table 8

Descriptive Statistics for Teachers' Motivational Perceptions

Perception	*N*	Mean	Median	Mode	*SD*
Usefulness/ Importance	84	29.19	30	32	2.86
Enjoyment/ Liking	85	27.45	28	28[a]	3.26
Confidence	87	27.33	28	32	4.28
Anxiety	92	28.51	29	32	3.33

a. Multiple modes exist. The smallest value is shown. Number of participants varies among motivational perceptions because teachers failing to respond to a question within a particular subgroup could not be included in that motivational perception.

Usefulness/Importance

As shown in Table 8, the questions for the motivational perception subscale of usefulness/importance showed that teachers generally agreed that the Internet is a useful/important tool to integrate in the classroom. The majority of the participants (98.9%) selected slightly disagree (SLD) or strongly disagree (SRD) with the statement "I can't think of any way to use the internet in my classroom" (Question 18). The statement "Anything that the Internet can be used for, I can do just as well another way" (Question 25) had the least amount of participants (3.3%) selecting the response (SRD). Seventy-nine participants (86.9%) selected slightly agree (SLA) or strongly agree (SRA) for this question. Although this is a low percentage, these responses were selected more often for Question 25 than any other question in this subscale. Additionally, ten teachers

(10.8%) selected agreed (SRA or SLA) to Question 32, "Integrating the Internet is not important to me in my work as a teacher."

A theme that often surfaced in the interviews with teachers in all motivation-integration subgroups pertaining to the subscale of usefulness/importance was that they believed it is important to use the Internet with students because this resource is a major part of our society. HMMI(1) stated that using Internet resources with her kindergarten students "gives them a foundation for using the Internet throughout their next 12 years of school." Because this is a low socio-economic district, two interview participants, HMMI(2) and HMHI(2), argued students must acquire Internet skills at school because they do not have access at home. Earlier in the school year, HMMI(2) polled her students and found that only two students in her class of 19 students had access to the Internet at home. She stated, "Using Internet resources with my students is important because I want them to have a fair opportunity to be a success in the future."

During the interview, HMMI(3), a fourth grade Social Studies teacher, discussed the idea that Internet resources are very useful because they allow students to view things that they would not be able to visualize any other way. She gave the example of a lesson she taught about the Dust Storms. The students had difficulty understanding what she was trying to explain to them until she was able to find a website that showed footage of a dust storm. "It was nice to see them truly understand and visualize the storms. There was no way they (students) could gain the same understanding by looking at pictures in the text…The students got really excited about it."

Table 9

Frequencies and Percentages of Teachers' Perception of Usefulness

	Question	SRD	%	SLD	%	SLA	%	SRA	%
4.	There are many ways to use the Internet in the classroom. (*N*=92)	2	2.2	0	0	12	13.0	78	84.8
7.	Using the Internet in the classroom is a waste of time. (*N*=93)	63	67.7	26	28.0	3	3.2	1	1.1
10.	I think it is important to use the Internet with my students. (*N*=91)	0	0	3	3.2	16	17.6	72	79.1
15.	I expect to have little use for integrating the Internet in my classroom. (*N*= 93)	68	73.1	14	15.1	10	10.8	1	1.1
18.	I can't think of any way to use the Internet in my classroom. (*N*=92)	75	81.5	16	17.4	1	1.1	0	0
21.	Knowing how to integrate the Internet will increase my job possibilities. (*N*=90)	0	0	2	2.2	24	26.7	64	71.1
25.	Anything that the Internet can be used for, I can do just as well another way. (N=91)	3	3.3	9	9.9	35	38.5	44	48.4
32.	Integrating the Internet is not important to me in my work as a teacher. (*N*=92)	62	67.4	20	21.7	6	6.5	4	4.3

Note. SRD = *Strongly Disagree*, SLD = *Slightly Disagree*, SLA = *Slightly Agree*, and SRA = *Strongly Agree*. Number of participants varies among questions because some participants failed to answer all questions.

One interview participant, MMHI, had a unique answer to the question concerning the usefulness/importance of using the Internet with the students (Question 2). Most interviewees focused on the increase of student technology skills, which would help them with future success; however, MMHI suggested that it is very important to use the Internet with her kindergarten students because they gain listening and reading skills. Many of the Internet activities she integrates requires the students to listen to a passage, story, letter sound, which also assist students with letter and site word recognition.

Enjoyment/Liking

An examination of the questions for the motivational perception subscale of enjoyment/liking found that most teachers reported they enjoyed or liked integrating the Internet with their students. Seventy-six (81.7%) of the participants agreed (SRA or SLA) that "using the Internet with my students is enjoyable and stimulating" (Question 9). Although teachers reported they enjoyed using the Internet with their students, their responses varied more for Question 20, "once I begin using the Internet with my students, I find it hard to stop." Twenty-six (27.9%) of the participants selected SRD or SLD to Question 20. Furthermore, eight teachers agreed (SRA or SLA) to the statement, "I avoid using the Internet in my classroom" (Question 24). Twenty-four (26.7%) teachers agreed (SRA or SLA) with Question 12, "The challenge of creating a lesson using the Internet does not appeal to me." Table 9 presents the percentages of teachers selecting a specific response to each e-survey question for the enjoyment/liking subscale.

Table 10

Frequencies and Percentages of Teachers' Perception of Enjoyment/Liking

	Question	SRD	%	SLD	%	SLA	%	SRA	%
3.	I enjoy using the Internet resources with my students. (*N*=92)	4	4.3	1	1.1	18	19.6	69	75.0
9.	I think using the Internet with my students is enjoyable and stimulating. (*N*=93)	1	1.1	3	3.2	13	14.0	76	81.7
12.	The challenge of creating a lesson using the Internet does not appeal to me. (*N*=90)	47	52.2	19	21.1	9	10.0	15	16.7
17.	I don't understand how some teachers can spend so much time integrating the Internet in their classroom and seem to enjoy it. (*N*=92)	69	75.0	16	17.4	4	4.3	3	3.3
20.	Once I begin using the Internet with my students, I find it hard to stop. (*N*=93)	7	7.5	19	20.4	38	40.9	29	31.2
24.	I avoid using the Internet in my classroom. (*N*=93)	64	68.8	21	22.6	4	4.3	4	4.3
28.	If I have difficulty finding and Internet resource to use in a lesson, I will continue searching until I find it. (*N*=92)	7	7.6	6	6.5	41	44.6	38	41.3
31.	I do not enjoy working with others to create activities that utilize the Internet. (*N*=91)	56	61.5	26	28.6	6	6.6	3	3.3

Note. SRD = *Strongly Disagree*, SLD = *Slightly Disagree*, SLA = *Slightly Agree*, and SRA = *Strongly Agree*. Number of participants varies among questions because some participants failed to answer all questions.

The interview asked the participating teachers "Recount a lesson that you enjoyed integrating the Internet with your students (Question 4)." The participants quickly began naming off Internet sites they used frequently. The researcher would often have to redirect the participant to think about a specific lesson. The researcher did not see a lot of consistency among the motivation-integration subgroups. Two stories surfaced once the researcher got the participants to think a little more. Both stories came from fifth grade teachers in two different subgroups.

MMMI(3) shared a story about trying to teach her students alliteration. She had become very frustrated trying to get her EIP (Early Intervention Program) students to understand alliteration when they were reading. She thought about the song *Werewolves of London* by Warren Zevon. She knew they would be familiar with the song because Kid Rock had recently done a mix called *All Summer Long* that used part of this song. MMMI(3) went immediately to the Internet and pulled up the lyrics and found the part with alliteration. She shared this clip with her students, "little old lady got mutilated late last night." She explained all the "l" sounds in the sentence and then they got so excited and wanted to look for more examples in songs. She said, "I have never seen the students light bulb click on like that in my years of teaching and since this time, I have used songs to teach similes, metaphors, and other concepts such as these…All of us got excited. It was a lot of fun for the students."

HMMI(3) recounted a time when she was teaching her fifth grade students about World War II. When she began the lesson, she showed them pictures and read from the text but it was not having any impact on the students. She wanted them to truly understand the sacrifices the men and women made during this time, so she decided to

search the Internet. She found many artifacts to share with her students: letters from soldiers to family members and friends, pictures from the fields and beaches, and video and audio recordings. "I could see it in their eyes that they had a grasp of the sacrifices that were made by these men and women. It was important for me to get that across to them….I was excited that maybe they had a deeper understanding. I really enjoyed the week I spent sharing these items with my students…definitely rewarding."

Confidence

Data concerning the participants' confidence level is provided in Table 10. When analyzing the motivational perception subscale for confidence, the researcher found that teachers had the tendency to select the response that illustrated more confidence when the statement talked about their abilities to take a class in integrating the Internet than they did for questions that focused on actual classroom integration. Only 37% of the participants reported that they strongly disagreed with the statement, "I would not consider myself successful with integrating the Internet into my regular instructional routine" (Question 2). Conversely, 71.4% of the participants reported that they strongly agreed with the statement, "I would do well in a course that addresses the integration of Internet resources" (Question 23).

The majority (96.8%) of the teachers reported they would be "OK" trying a new Internet activity with their students. Teachers were also confident in their ability to use the Internet in their lessons (Question 11). Only five (5.4%) teachers disagreed (SRD or SLD) that they "can successfully use the Internet in their lessons." However, 13 teachers reported "using the Internet in my lesson is very difficult for me" (Question 19) and 17

teachers considered themselves to have little confidence "when it comes to integrating the Internet" (Question 30).

Eleven of the 12 interview participants suggested they are prepared and adequately trained and confident in their skills of integrating the Internet in the classroom. The type of classes and training varied among the interview participants. Seven participants had participated in the InTech program, which was a requirement in the state of Georgia until 2006. Three participants passed the Georgia Teacher Computer Competency Test, which replaced InTech. HMHI(1) is a new teacher and was required to take technology classes in her undergraduate degree program of study. One participant, HMMI(3) recommended that "you cannot learn enough because new things (Internet resources) are constantly coming out and training is a good way to stay on top of it."

MMLI, a veteran second grade teacher of 52 years, holds a lifetime certificate and was not required to participate in any technology requirements. When the researcher asked MMLI, "Do you think that you have the skills necessary to integrate Internet activities into your classroom instruction?" (Question 6), she simply replied, "Probably, don't." Then she explained her answer by discussing the idea that if a teacher does not practice using the Internet or technology, then "they most likely will not be very good at it." MMLI was not interested in taking any additional Internet integration courses. She suggested, "Students need one-on-one from the teacher…do not think taking more training for technology or the Internet would increase my use."

Table 11

Frequencies and Percentages of Teachers' Perception of Confidence

	Question	SRD	%	SLD	%	SLA	%	SRA	%
2.	I would not consider myself successful with integrating the Internet into my regular instructional routine. (*N*=93)	34	36.6	27	29.0	22	23.7	10	10.8
6.	Generally, I would feel OK about trying a new activity with my students on the Internet. (*N*=92)	2	2.2	1	1.1	26	28.3	63	68.5
11.	I can successfully use the Internet in my lessons. (*N*=92)	1	1.1	4	4.3	24	26.1	63	68.5
14.	I am not the type to be successful integrating the Internet. (*N*=92)	53	57.6	29	31.5	8	8.7	2	2.2
19.	Using the Internet in my lessons is very difficult for me. (*N*=93)	51	55.4	28	30.4	11	12.0	2	2.2
23.	I would do well in a course that addresses the integration of Internet resources. (*N*=91)	2	2.2	4	4.4	20	22.0	65	71.4
27.	I do not think I could handle creating and implementing a lesson that utilizes Internet resources. (*N*= 93)	60	64.5	25	26.9	7	7.5	1	1.1
30.	I have a lot of self-confidence when it comes to integrating the Internet in my classroom. (*N*=93)	1	1.1	16	17.2	34	36.6	42	45.2

Note. SRD = *Strongly Disagree*, SLD = *Slightly Disagree*, SLA = *Slightly Agree*, and SRA = *Strongly Agree*. Number of participants varies among questions because some participants failed to answer all questions.

HMMI(1) was one of the three teachers to suggest additional training. She thought she was adequately trained but additional training would benefit her integration of the Internet in the classroom. "I feel confident in my skill level but feel that I would definitely benefit from additional training." She participated in InTech, which focused more on technology integration and not Internet resources. She has attended additional training that focused on integration of the Internet but explains, "the Internet is a resource with so much out there to sift through. My greatest need at this time is discovering good search techniques." She spent a large amount of time searching for a short Mother's Day poem to use with her students. "It took forever because I could not find one that would work for my kindergarten students."

Anxiety

Table 11 provides data for the motivational perception subscale for anxiety. The majority of participants reported they experience little anxiety when integrating Internet tools with their students. Ninety-five percent of the participants reported that they strongly disagree or slightly disagree with the statement, "I get a sinking feeling when I think of teaching a lesson that includes the use of the Internet" (Question 22). Additionally, 75 (80.6%) of the participants reported they were not uncomfortable using the Internet with their students (Question 16).

Although most teachers reported experiencing little anxiety integrating the Internet, 18 (19.3%) participants reported they are "uncomfortable using the Internet with their students" (Question 16). Sixteen teachers (17.2%) suggested they experience some anxiety when they use the Internet with their students (Question 5).

Similar results were found concerning the subscale of anxiety in the semi-structured interviews. When asked to "describe a time when you felt anxious integrating the Internet in your classroom" (Question 5), it often resulted in a pause by the participant. The researcher would provide examples of things that might cause anxiety, but 10 of the 12 could not think of a time and seemed to be quite relaxed about using the Internet in the classroom. HMHI(1) paused and looked at the researcher with a very puzzled look and said, "Is it a bad thing that I cannot think of a time where I ever felt anxious when I was using the Internet with my kids?" HMHI(3) stated, "I do not get anxious because if I cannot figure it out, one of the students can. It's really no big deal."

HMMI(1) shared a story about a Groundhog Day lesson that she had recently taught in her kindergarten class. HMMI(1) was using the Internet to show her kindergarten students the numerous groundhogs that are watched on Groundhog Day. While they were visiting one of the sites, a pajams.com pop-up appeared. It was around Valentine's Day and the pajamas on the lady in the advertisement were not "real appropriate" for kindergarten students. HMMI(1) scrambled to get it off the screen but not before the students erupted into laughter. Finally, she removed it from the screen and got the students back on task but she shared, "I did feel anxious. I was worried what kind of letters I would be getting the next day from my kids' parents but luckily there were none." HMMI(1) suggested that this event has not kept her from using the Internet with her students; however, she will take time to visit the website before sharing with students.

Table 12

Frequencies and Percentages of Teachers' Perception of Anxiety (N=93)

	Question	SRD	%	SLD	%	SLA	%	SRA	%
1.	I am not scared to use the Internet with my students.	3	3.2	7	7.5	20	21.5	63	67.7
5.	I get very nervous when I use the Internet with my students.	56	60.2	21	22.6	16	17.2	0	0
8.	I do not feel threatened when other teachers talk about integrating the Internet in their classroom	2	2.2	7	7.5	16	17.2	68	73.1
13.	I would feel comfortable taking a class that focuses on Internet resources for the classroom.	0	0	2	2.2	26	28.0	65	69.9
16.	I am uncomfortable using the Internet with my students.	55	59.1	20	21.5	7	7.5	11	11.8
22.	I get a sinking feeling when I think of teaching a lesson that includes the use of Internet resources.	70	75.3	19	20.4	2	2.2	2	2.2
26.	I am comfortable using the Internet with my students.	1	1.1	4	4.3	20	21.5	68	73.1
29.	I feel uneasy and confused when I use the Internet in my classroom.	61	66.3	22	23.9	9	9.8	0	0

Note. SRD = *Strongly Disagree*, SLD = *Slightly Disagree*, SLA = *Slightly Agree*, and SRA = *Strongly Agree*.

Research Question 2: How do subgroups of elementary teachers (HMHI, HMMI. MMMI, and MMLI) differ in their reported motivational perceptions?

First, the researcher used the SPSS software to determine the means for the motivational perceptions by subgroup. The means are presented in Table 12. The researcher compared all subgroups and motivational perceptions and found the highest mean was found for the HMHI subgroup for usefulness/importance. The subgroup HMHI had the highest mean for all motivational perceptions. The lowest mean was for the motivational perception of confidence for the MMLI subgroup.

Table 13

Descriptive Statistics for Motivational Perceptions by Subgroups

	Motivational Perceptions							
	Confidence		Anxiety		Usefulness		Enjoyment	
MI Subgroup	*N*	Mean	*N*	Mean	*N*	Mean	*N*	Mean
HMHI	31	30.52	35	30.06	33	31.00	31	29.48
HMMI	42	26.79	43	28.63	40	28.90	42	27.21
MMMI	10	20.60	9	23.11	9	24.56	8	22.13
MMLI	2	19.00	2	22.50	1	24.00	2	21.00
Total	85	27.24	89	28.49	83	29.20	83	27.42

Note. HMHI = High Motivation/High Integration, HMMI = High Motivation/Moderate Integration, MMMI = Moderate Motivation/Moderate Integration, and MMLI = Moderate Motivation/Low Integration. Number of participants in each subgroup varies by motivational perception because some participants failed to answer all questions and their data could not be included in the analysis.

Four one-way Analysis of Variance (ANOVA) were conducted using the SPSS software to explore differences among the four motivation-integration subgroups. Significant differences were found between all four subgroups for each examined motivational perception. A significant difference exists between all motivation-integration subgroups for confidence (F=40.03). Data showed the least significant difference exists between the subgroups for anxiety (F=22.17). Table 13 provides the analysis of variance for the four motivation-integration subgroups and each of the motivational perceptions.

Table 14

Analysis of Variance for Motivation-Integration Subgroups and Motivational Perceptions

Variable	Source	*SS*	*Df*	*MS*	*F*
Confidence	Between Groups	918.08	3	306.03	40.03*
	Within Groups	619.21	81	7.65	
	Total	1537.29			
Anxiety	Between Groups	418.93	3	139.64	22.17*
	Within Groups	535.32	85	6.29	
	Total	954.25	88		
Usefulness/Importance	Between Groups	331.42	2	165.71	38.53*
	Within Groups	344.10	80	4.30	
	Total	675.52	82		
Enjoyment/Liking	Between Groups	440.55	3	146.85	25.68*
	Within Groups	451.69	79	5.718	
	Total	892.24	82		

*$p < 0.05$

Next, the researcher utilized the Scheffe post hoc procedure to determine the significant differences among the subgroups' means for each motivational perception. The first motivational perception was confidence. Results showed significant differences in confidence level between HMHI and all of the other subgroups. Additionally, HMMI was significantly different than MMMI (F= 6.19) and MMLI (F=7.79) in their confidence level. However, there was no significant difference in the level of confidence between MMMI and MMLI (F=1.60) participants. Additional data concerning the differences between the subgroups and confidence is provided in Table 14.

Table 15

Scheffe Post Hoc for Motivation-Integration Subgroups and Confidence

	HMHI	HMMI	MMMI	MMLI
HMHI	---	3.73*	9.92*	11.52*
HMMI		---	6.19*	7.79*
MMMI			---	1.60
MMLI				---

Note. HMHI = High Motivation/High Integration, HMMI = High Motivation/Moderate Integration, MMMI = Moderate Motivation/Moderate Integration, and MMLI = Moderate Motivation/Low Integration.

*$p < 0.05$

Second, the researcher utilized data from Scheffe follow-up procedure to determine the differences among the subgroups' means for anxiety. This data is provided in Table 15. Results showed that the anxiety levels of HMHI and HMMI are significantly different than MMMI and MMLI. Participants in the high motivation

categories had anxiety levels that were significantly different (lower) than those in the moderate motivation categories. In contrast, there were no significant differences in anxiety level between HMHI and HMMI (F=1.43) or MMMI and MMLI (F=.61).

Table 16

Scheffe Post Hoc for Motivation-Integration Subgroups and Anxiety

	HMHI	HMMI	MMMI	MMLI
HMHI	---	1.43	6.94*	7.56*
HMMI		---	5.52*	6.13*
MMMI			---	.61
MMLI				---

Note. HMHI = High Motivation/High Integration, HMMI = High Motivation/Moderate Integration, MMMI = Moderate Motivation/Moderate Integration, and MMLI = Moderate Motivation/Low Integration.

*$p < 0.05$

Enjoyment/Liking was the third motivational perception examined using the Scheffe procedure. The data showed the enjoyment/liking level for the HMHI subgroup was significantly different than HMMI (F=2.27), MMMI (F=7.36), and MMLI (F=8.48) subgroups. Furthermore, the HMMI subgroup was significantly different than the MMMI (F=5.09) and MMLI (6.21) subgroups. The data also showed no significant difference exists between the two moderate motivation categories (MMMI and MMLI) for enjoyment/liking. The teachers' level of enjoyment/liking for integrating the computer with their students was not significantly different. Table 16 provides additional

data concerning the differences in enjoyment/liking level between the motivation-integration subgroups.

Table 17

Scheffe Post Hoc for Motivation-Integration Subgroups and Enjoyment/Liking

	HMHI	HMMI	MMMI	MMLI
HMHI	---	2.27*	7.36*	8.48*
HMMI		---	5.09*	6.21*
MMMI			---	1.13
MMLI				---

Note. HMHI = High Motivation/High Integration, HMMI = High Motivation/Moderate Integration, MMMI = Moderate Motivation/Moderate Integration, and MMLI = Moderate Motivation/Low Integration.

*$p < 0.05$

The researcher conducted a separate post hoc Scheffe analysis for the motivational perception of usefulness/importance that only examined three of the subgroups because the MMLI subgroup only had one person with a valid score. The MMLI subgroup had to be removed from this analysis so the researcher could accurately examine the data for this motivational perception.

Results showed that the HMHI subgroup was significantly different from the HMMI (F=2.10) and MMMI (F=6.5) subgroups for usefulness and importance. The HMMI subgroups' level of usefulness/importance of the Internet in the classroom was significantly different than the MMMI (F=4.40) subgroup. Additional data concerning

the differences in usefulness/importance among the valid motivation-integration subgroups can be found in Table 17.

Table 18

Scheffe Post Hoc for Motivation-Integration Subgroups and Usefulness/Importance

	HMHI	HMMI	MMMI
HMHI	---	2.10*	6.5*
HMMI		---	4.40*
MMMI			---

Note. HMHI = High Motivation/High Integration, HMMI = High Motivation/Moderate Integration, and MMMI = Moderate Motivation/Moderate Integration.

*$p < 0.05$

Once significant differences among motivation-integration subgroups were determined for each motivational perception, a summary of the data was prepared. Table 18 provides a summary of the significant differences in motivational perceptions among the motivation-integration subgroups. First, an analysis of the data showed that highly motivated teachers have less anxiety than moderately motivated teachers, regardless of the integration level. Second, there were no significant differences in motivational perceptions (confidence, anxiety, and enjoyment/liking) among moderately motivated teachers, even though their level of integration differed. Third, the high integrators experienced a higher level of confidence and enjoyment/liking than moderate and low integrators, regardless of motivation level.

Table 19

Summary of Significant Differences in Motivational Perceptions among Subgroups

Subgroups	HMMI	MMMI	MMLI
HMHI	Confidence Enjoyment/Liking Usefulness/Importance	Confidence Anxiety Enjoyment/Liking Usefulness/Importance	Confidence Anxiety Enjoyment/Liking
HMMI		Confidence Anxiety Enjoyment/Liking Usefulness/Importance	Confidence Anxiety Enjoyment/Liking
MMMI			No significant differences in motivational perceptions

Note. HMHI = High Motivation/High Integration, HMMI = High Motivation/Moderate Integration, and MMMI = Moderate Motivation/Moderate Integration. The moderate motivation/low integration subgroup was not included in the analysis for motivational perception subscale of usefulness/importance.

Research Question 3: What are the reported Internet integration practices of elementary teachers?

The researcher examined teachers' responses to Section II (Questions 33, 34, and 35) of the STIMI (Appendix A) to determine teachers' integration level and to answer this research question. The researcher utilized descriptive statistics to examine the teachers' current integration practices. The mean score for Question 33 was 3.75, which means that the participating teachers on average use the Internet for instructional purposes 3 to 4 times per week (45.7%). Question 34 has the lowest mean score of 3.05,

which illustrated that teachers on average, spend "1 hour or more, but less than 3 hours" per week "developing or implementing, lessons that utilize the Internet." Additionally, only 9 teachers reported spending more than five hours. Question 35 had the highest mean score of 4.07, which shows that most teachers considered themselves "average" integrators of technology (44.6%). "Average" is defined in the survey with the statement, "I demonstrate a general competency in integrating, several Internet applications with my students. Table 19 provides additional descriptive statistics concerning teachers' perceived level of instructional integration of the Internet.

Table 20

Descriptive Statistics for Teachers' Instructional Integration of the Internet (N=92)

Question	Mean	Median	Mode	*SD*
33. On average, how many days a week do you integrate Internet activities in your classroom?	3.75	3	3	1.50
34. On average, how many hours per week do you spend developing or implementing lessons that utilize the Internet?	3.05	3	3	1.03
35. Determine the level that best describes you and choose the corresponding letter.	4.07	4	4	.887

An analysis of the participants' responses to each question was conducted to allow the researcher to further explore the integration level of the participants. The participants' responses to Question 33 varied. Only 21 participants (22.9%) reported using the Internet zero or one day per week with their students, which shows more than 75% of the teachers are using the Internet for instructional purposes at least twice per

week. There was not as much variability in teachers' responses to Question 34. Sixty-five teachers (70.6%) reported spending one to five hours per week "developing or implementing lessons that utilize the Internet." Only two teachers reported spending no time on the Internet for the purpose of instruction. Question 35 explored the teachers' perceived proficiency levels. Although the proficiency level varied among teachers, none of the teachers defined themselves as "unfamiliar" with integrating the Internet in the classroom. Approximately 45% of the teachers considered themselves to be "average" integrators of the Internet; however, an additional 22 (23.9%) defined themselves as "advanced." Those who selected "average" or "advanced" account for 68.5% of the participating teachers. Table 20 provides frequencies and percentages for Section II of the STIMI.

Table 21

Percentages of Teacher's Reported Integration of the Internet (N=92)

	Question	Possible Question Responses					
		A	B	C	D	E	F
		0	1	2	3	4	5
33	On average, how many days a week do you integrate Internet activities in your classroom?	3.3%	19.6%	28.3%	17.4%	10.9%	20.7%
		None	< 1 hour	1 or >, < 3	3 or >, < 5	5 or >, < 10	10 or >
34	On average, how many hours per week do you spend developing or implementing lessons that utilize the Internet?	2.2%	29.3%	41.3%	17.4%	7.6%	2.2%
		Unfamiliar	Newcomer	Beginner	Average	Advanced	Expert
35	Determine the level that best describes you and choose the corresponding letter.	0%	2.2%	23.9%	44.6%	23.9%	5.4%

Research Question 4: How does the reported use of Internet tools differ among four subgroups of elementary teachers?

The researcher placed the teachers' responses to questions 36–43 of the STIMI (Section III) into SPSS and utilized descriptive statistics to answer this research question. The researcher created eight categories of Internet tools based on her review of literature. Each question represented one of the Internet tool categories: communication/collaboration, project-based learning, educational games,

simulations/virtual tours, multimedia, web publishing, information research, and test preparation. Teachers were asked to "indicate how many days on average per month you integrate each of the …Internet tools into your classroom with your students." Each question had four possible responses: Never, 1–5, 5–10, and >10. The researcher used the SPSS software to determine the percentage of participants in each motivation-integration subgroup selecting a particular response to each of the question in Section III.

First, the researcher analyzed the responses from the total group of participants. This analysis suggested that the most used Internet tools category among this group of teachers is educational games. Fifty-six (62.2%) teachers reported using educational games with their students at least five times per month. The second most used category was multimedia tools with 33 (36.6%) teachers reporting they use multimedia tools five or more times per month. The Internet tool category that teachers reported using the least was web publishing. Fifty-seven (63.3%) teachers reported that they "never" use web-publishing tools with their students. Additionally, 53 (58.9%) teachers reported they "never" use collaboration/communication tools for instruction. Similar data was found when the researcher analyzed teachers' responses by subgroups: HMHI, HMMI, MMMI, and MMLI. Additional statistics concerning teachers' responses to Section III of the STIMI are provided in Table 21.

Table 22

Percentage of Participants' Use of Internet Tools (N=90)

Internet Tool	Never	%	1–5	%	5–10	%	>10	%
Communication/ Collaboration	53	58.9%	8	8.9%	9	10%	20	22.2%
Project-based	37	41.6%	35	39.3%	12	13.5%	5	5.6%
Educational Games	2	2.2%	32	35.6%	30	33.3%	26	28.9%
Simulations/ Virtual Tours	35	38.9%	45	50%	7	7.8%	3	3.3%
Multimedia	12	13.3%	45	50%	21	23.3%	12	13.3%
Web Publishing	57	63.3%	25	27.8%	6	6.7%	2	2.2%
Information Research	11	12.2%	52	57.8%	12	13.3%	15	16.7%
Test Prep	31	34.8%	42	47.2%	13	14.6%	3	3.4%

Note. Answers were based on the average number of times per month a teacher utilized a specific tool in the classroom.

High Motivation-High Integration (HMHI)

Teachers in the HMHI subgroup had results that matched the overall group. The most used category of Internet tools was educational games. Thirty-one teachers (88.6%) reported using educational games with their students five or more times per month. Subsequently, 57.2% (20) of the HMHI participants reported using multimedia tools five or more times per year. This was the second most used category among this subgroup. The least used categories were communication/collaboration and web publishing tools. Twenty (57.1%) teachers reported "never" using web publishing tools with their students.

Furthermore, only 5 (14.3%) reported using web publishing tools with their students five or more times per month. Eighteen (51.4%) teachers reported "never" using communication/collaboration tools with their students. Table 22 provides additional data concerning HMHI integration of specific Internet tools.

Table 23

Percentage of HMHI Use of Internet Tools (N=35)

Internet Tool	Never	%	1–5	%	5–10	%	>10	%
Communication/ Collaboration	18	51.4%	3	8.6%	5	14.3%	9	25.7%
Project-based	9	25.7%	14	40%	9	25.7%	3	8.6%
Educational Games	0	0%	4	11.4%	16	45.7%	15	42.9%
Simulations/ Virtual Tours	10	28.6%	18	51.4%	5	14.3%	2	5.7%
Multimedia	1	2.9%	14	40%	12	34.3%	8	22.9%
Web Publishing	20	57.1%	10	28.6%	3	8.6%	2	5.7%
Information Research	2	5.7%	20	57.1%	5	14.3%	8	22.9%
Test Prep	11	31.4%	14	40%	8	22.9%	2	5.7%

Note. Answers were based on the average number of times per month a teacher utilized a specific tool in the classroom.

The interviews of teachers in this subgroup strongly suggested that educational games were the most used category. When all three participants were asked about the sites that they use with their students, they immediately started naming off educational gaming sites. Some of the sites that were suggested were AAA Math, Education City, Adlibs, iknowthat.com, A+ Math, and Destination Math. Two of the three suggested that

they use some multimedia sites to reinforce the skills they teach in class. HMHI(3) recommended Academic Skills Builder, which incorporates video to teach various skills. HMHI(1) suggested United Video Streaming to use with students because "it catches the students attention."

High Motivation-Moderate Integration

The HMMI subgroup of teachers had results that were similar to the overall group data. The most used category of Internet tools was educational games. Twenty-three (53.5%) teachers reported using educational games with their students five or more times per month. The communication/collaboration category was the least used among HMMI participants. More than one-half (58.1%) of the HMMI participants reported that they "never" use communication/collaboration tools with their students. Additional data concerning HMMI use of Internet tools is provided in Table 23.

The HMMI interview participants supported this data by suggesting that they frequently use educational games with their students. HMMI(1) discussed her use of starfall.com, a site that provides interactive games that relate directly to what the students are learning in class. She stated, "The students really enjoy the games they play on starfall.com. I am able to select activities that go with our units that we work on in class." One example that she gave was their plant unit. The students were able to play a game that allowed students to plant a seed, water and care for plant, and watch it grow. Although the students could plant a seed in class and do the same process, it would take a longer amount of time. HMMI(1) suggested, "it makes it all seem real to the students and reinforces what I teach in class."

Table 24

Percentage of HMMI Use of Internet Tools (N=43)

Internet Tool	Never	%	1–5	%	5–10	%	>10	%
Communication/ Collaboration	25	58.1%	5	11.6%	3	7%	10	23.3%
Project-based	19	45.2%	19	45.2%	3	7.1%	1	2.4%
Educational Games	2	4.7%	19	45.2%	13	30.2%	10	23.3%
Simulations/ Virtual Tours	17	39.5%	23	53.5%	2	4.7%	1	2.3%
Multimedia	7	16.3%	24	55.8%	8	18.6%	4	9.3%
Web Publishing	2	67.4%	11	25.6%	3	7%	0	0%
Information Research	7	16.3%	24	55.8%	5	11.6%	7	16.3%
Test Prep	16	37.2%	21	48.8%	5	11.6%	1	2.3%

Note. Answers were based on the average number of times per month a teacher utilized a specific tool in the classroom.

Additionally, the other two interview participants in this subgroup suggested that they use educational games more frequently than any other subgroup; however, they frequently use multimedia tools with their students. This is the one subgroup that made many references to multimedia tools in the interviews. HMMI(2) suggested many multimedia tools that she enjoys using with her students. "My students enjoy the videos that are available on Brainpop.com and Brainpopjr.com. I use these videos to reinforce things I have taught in class. The students will tell me that we have learned about this in class." HMMI(3) also suggested that she utilizes many multimedia tools in her

classroom. Since she teaches Social Studies, she locates and shares video, audio, and pictures that relate to the information she is teaching in class. "Hearing and seeing real video or audio footage is a great way to help students relate to the information."

Moderate Motivation-Moderate Integration (MMMI)

Although there were a limited number of participants (10) in the MMMI category, results were similar to the overall group and previous subgroups. The least used category was communication/collaboration with 90% (*N*=9) teachers reporting they "never" integrate these tools into their instructional routine. The researcher did not expect the MMMI group to be frequent integrators of technology due to their moderate level of integration and the data proved that they did not use any of the categories more than 5 times per month. The researcher had to consider this closely with examining the category that is used the most often by this group. Educational games (80%) and multimedia (70%) were the two most used categories within this group of participants; however, they reported only using these categories of tools one to five times per month. Table 24 provides additional data concerning the MMMI subgroup's use of Internet tools.

Interview participants in the MMMI subgroup suggested educational gaming sites but MMMI (2) suggested research tools. MMMI(2)'s second grade students used google.com and discovery.com to complete research assignments or to simply find the answer to something that the teacher cannot answer. "Sometimes I am not sure of something the students have asked and we use google.com or Galileo to find the answer to their question," suggested MMMI(2).

Table 25

Percentage of MMMI Use of Internet Tools (N=10)

Internet Tool	Never	%	1–5	%	5–10	%	>10	%
Communication/ Collaboration	9	90%	0	0%	1	10%	0	0%
Project-based	8	80%	2	20%	0	0%	0	0%
Educational Games	1	10%	8	80%	1	10%	0	0%
Simulations/ Virtual Tours	7	70%	3	30%	0	0%	0	0%
Multimedia	2	20%	7	70%	1	10%	0	0%
Web Publishing	6	60%	4	40%	0	0%	0	0%
Information Research	2	20%	7	70%	1	10%	0	0%
Test Prep	0	0%	5	50%	5	50%	0	0%

Note. Answers were based on the average number of times per month a teacher utilized a specific tool in the classroom.

Moderate Motivation-Low Integration (MMLI)

Table 25 provides data for the MMLI subgroup of teachers. There were only two teachers with valid data in this subgroup; however, this subgroup had results that were quite different from the overall group of participants and the other three subgroups. The most used categories of tools within this subgroup were information research and test preparation. Both participants reported using test preparation one to five times per month. When examining the information research, one participant reported using this

category one to five and the other participant reported using it five to ten times per month. Multimedia and web publishing were used the least. Both participants reported "never" using these two categories of Internet tools.

One participant in the MMLI category participated in the interview portion of this research. Since she reported "never" using the Internet with her students, the interview did not have much to offer concerning the tools used. MMLI stated, "I really do not think my using the Internet will make a difference with my students. They go visit the teacher in the computer lab for extra help...Using the Internet would take away from them picking up a book and reading on their own."

Table 26

Percentage of MMLI Use of Internet Tools (N=2)

Internet Tool	Never	%	1–5	%	5–10	%	>10	%
Communication/ Collaboration	1	50%	0	0%	0	0%	1	50%
Project-based	1	50%	0	0%	0	0%	1	50%
Educational Games	0	0%	1	50%	0	0%	1	50%
Simulations/ Virtual Tours	1	50%	1	50%	0	0%	0	0%
Multimedia	2	100%	0	0%	0	0%	0	0%
Web Publishing	2	100%	0	0%	0	0%	0	0%
Information Research	0	0%	1	50%	1	50%	0	0%
Test Prep	0	0%	2	100%	0	0%	0	0%

Note. Answers were based on the average number of times per month a teacher utilized a specific tool in the classroom.

Research Question 5: Is there a significant relationship among motivational perceptions and level of integration?

The researcher organized teachers' responses to the STIMI in SPSS 17.0 to answer the previous research questions. The researcher used the SPSS software and utilized Pearson's r correlation coefficient to compare the integration scores and motivational scores, which were determined in the previous research question, to determine if any relationships exist. A statistical analysis revealed that a significant relationship exist between all four motivational perceptions and level of integration ($p < .01$). The strongest correlation exists between confidence and integration ($r = .746$, $p < .01$). This positive correlation suggests that the more confident the teacher is, the more likely she is to integrate the Internet in her classroom. The correlation between anxiety and integration was the weakest; however, it was significant ($r = .462$). Table 26 provides additional data concerning the correlations that exists between motivational perceptions and teachers' integration of the Internet.

Table 27

Pearson's r Correlation for Motivational Perceptions and Teachers' Integration

	Confidence	Anxiety	Usefulness	Enjoyment	Integration
Confidence	---				
Anxiety	.687*	---			
Usefulness	.624*	.645*	---		
Enjoyment	.738*	.676*	.638*	---	
Integration	.746*	.462*	.536*	.609*	---

*Correlation is significant at the 0.01 level

Additionally, the analysis revealed a significant relationship between all motivational perceptions. A strong positive relationship exists between enjoyment/liking and confidence (r=.738), suggesting the more confident a teachers is in her skills of integrating the Internet, the more she enjoys it. Additionally, a strong positive relationship exists between confidence and anxiety (r = .687). A low motivational perception score for anxiety indicates high anxiety experienced by the teacher. Therefore, this finding indicates that teachers with low levels of anxiety (high anxiety motivation score) are more confident. The data suggested that strong positive relationships exist among all motivational perceptions, which illustrates that one perception can be impacted by all of the other motivational perceptions. Ultimately, they all work in a relationship with one another to determine a teacher's instructional integration of the Internet.

Additional Interview Data

Although the study was designed to examine motivational perceptions, often the discussion of first-order barriers/facilitators surfaced during the interviews. These discussions need to be considered because they are pertinent to teachers' integration of the Internet in the classroom. During the interviews, many participants noted additional barriers/facilitators they faced when they used the Internet with their students. The reasons varied among the teachers; however, multiple teachers noted many.

First, the most noted first order barrier/facilitator was speed of connection. Eight interviewees reported that the connection occasionally became really slow and it took a long time for students or the teacher to connect to sites. The wait time was sometimes

too long, and often the teachers had to adjust their plans for the day. HMMI(1) noted, "My kindergarten students' attention spans are quite short, so if the connection is really slow I cannot wait. I just move on to something else." HMHI (2) utilized multiple learning centers with her students and often one of the centers involved an Internet activity. "If the server goes down or the connection is really slow, that center is ruined and I have to create another one," stated HMHI(2). Although the Rose School District has fiber optic lines, the teachers may occasionally experience slow connections. Additionally, the HMHI (2) and HMMI (2) contended the connection became really slow when all of the students in their classroom were connected to the server with wireless laptops. Slow connections can consume too much time, which is a first order barrier that is often discussed in the literature.

Second, seven teachers noted a concern of the Internet safety of students. The Internet has a vast array of information and resources that are inappropriate for student access. MMMI (3) argued, "I am scared to allow my students to use the Internet on an individual basis because I cannot always ensure they are going to appropriate sites. I do not want to be held accountable if they go to an inappropriate site." Internet safety was an important concern for many teachers. The Rose School District has an Internet filter in place but it cannot completely prevent students from never accessing inappropriate sites.

Third, five teachers addressed pop-ups that appeared during lessons. MMHI exclaimed, "I have a hard time trying to find sites that do not have a lot of pop-ups or advertisements. My kindergarten students do not know how to close them out and it can get really aggravating!" HMMI (1) shared the story concerning an inappropriate pajama

pop-up that appeared during her lesson on Groundhog Day. HMHI(1) recommended visiting all sites before using them with students to determine the pop-ups and advertisements that may appear; however, she understood there times when you simply needed to search for something at the last minute. Most of the interview participants recommended using a pop-up blocker; however, they also recognized pop-up blockers may prevent access to useful sites and information.

An additional barrier discussed by three of the interviewed teachers included laptops freezing up when multiple students were on the wireless laptops, which required extra time to restart the computers. HMHI(1)'s first grade students often had difficultly typing the correct web address and locating the correct site. HMMI (3) contends that her fourth and fifth grade students had difficulty transitioning from an Internet activity to other activities. MMMI (2) asserted she does not have enough computers in her classroom, and students must share when participating in Internet activities.

Summary

Chapter IV presented information obtained from an analysis of data collected from an e-survey and interviews of elementary teachers in a southeast Georgia school system. The participants included 93 elementary teachers (grades kindergarten through fifth grade). Twelve teachers among the 93 participants were selected based on their motivation-integration score to participate in the interview portion of this study. Results from the study were used to address research questions concerning the following topics: (a) teachers' motivational perceptions, (b) differences in motivational perceptions among subgroups, (c) teachers' integration practices, (d) use of Internet tools among subgroups, and (d) relationships among motivational perceptions and integration. Data gathered on

these topics was used to answer the over-arching question for this study: How do motivational perceptions and current practices concerning instructional integration differ among elementary teachers in a southeast Georgia school system?

First, major findings from the data analysis of the STIMI found that the teachers' had a high to moderate motivation level to integrate the Internet in their classroom and there were no teachers in the low motivation subgroup. The motivational perception that ranked the highest among teachers was usefulness/importance. Second, an analysis of variance showed the strongest significant difference exists between the subgroups for anxiety. The HMHI subgroup was more confident than the other three subgroups. Third, descriptive statistics for Section II of the STIMI showed that most participants classified themselves as "average" to "advanced" integrators of the Internet. Fourth, an analysis of Section III of the STIMI found that educational games and multimedia tools were the most used Internet tools among participants and subgroups and communication/ collaboration tools were the least used. Fifth, Pearson's *r* correlation coefficient found that the strongest relationship existed between confidence and integration. However, a significant relationship existed among all motivational perceptions and teachers' integration. The weakest significant relationship exists between anxiety and integration. These results are discussed more fully in Chapter V where a synopsis of the study with considerations for the future, including implications and suggestions for further study are presented.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Schools have spent much time and money providing teachers and students access to the Internet. As access has become commonplace in schools, teachers are increasingly encouraged to incorporate Internet resources in their classroom. Teachers' use of the Internet has increased in recent years; however, they continue to face barriers that inhibit their integration of this resource. This study sought to understand teachers' motivational perceptions (second-order barriers) and how they might relate to teachers' instructional integration of the Internet. This chapter presents a summary of the study and important conclusions drawn from the data presented in Chapter IV. It provides a discussion of implications for action and recommendations for educators and future researchers.

Summary of Procedures and Research Questions

The goal of this mixed methods study was to better understand the motivational perceptions and current Internet integration practices of elementary teachers and to explore possible relationships that may exist among them. The four examined motivational perceptions were usefulness/importance, confidence, anxiety, and enjoyment/liking. The participants were 93 elementary teachers (kindergarten through fifth grade) in the Rose School District, which is located in rural southeast Georgia.

The mixed methods study included an e-survey, Survey of Teachers Integration Motivation Instrument (STIMI) and semi-structured interviews. The participants were asked to complete the STIMI via the school system's web portal. The researcher analyzed the survey responses and each participant was given a motivation and integration score based on their responses. Then the researcher placed each participant

into a motivation-integration subgroup based on these scores. The combination of motivation-integration scores resulted in four major subgroups: High Motivation/High Integration (HMHI), High Motivation/Moderate Integration (HMMI), Moderate Motivation/Moderate Integration (MMMI), and Moderate Motivation/Low Integration (MMLI). Data from the survey was analyzed using the Statistical Package for the Social Sciences (SPSS), four one-way ANOVAs, descriptive statistics, and Pearson's *r* correlation coefficient.

Additionally, 12 teachers from the 93 respondents were selected for the interview portion of this study. These teachers were selected based on their motivation and integration scores, which were derived from the STIMI. Once the teachers were placed into the four motivation-integration categories, the researcher selected one teacher from each grade category (K–1, 2–3, and 4–5) from the HMHI, HMMI, and MMMI motivation-integration subgroups to participate in the interview portion of this study. Additionally, one teacher from the MMLI, HMLI, and MMHI subgroups were also selected. Transcripts of the interviews were reviewed and coded, so the researcher could determine patterns that existed among participants' responses.

Through this study, the researcher addressed the following overarching research question: How do motivational perceptions and current practices concerning instructional integration of the Internet differ among elementary teachers in a southeast Georgia school system? The following specific questions served as lines of investigation for the study:

1. What are the reported motivational perceptions of elementary teachers toward instructional integration of the Internet?

2. How do subgroups of elementary teachers (HMHI, HMMI, MMMI, and MMLI) differ in their reported motivational perceptions?
3. What are the reported Internet integration practices of elementary teachers?
4. How does the reported use of Internet tools differ among four subgroups of elementary teachers?
5. Is there a significant relationship among motivational perceptions and level of integration?

Analysis and Discussion of Findings

The National Center for Education Statistics (NCES, 2003, 2005) reported the percentage of schools with Internet access increased from 35% in 1994 to 100% in 2003. In 2006, Georgia's Annual State Technology Inventory reported that 98% of all instructional computers in Georgia schools were connected to the Internet (Georgia Department of Education, 2006). State Boards of Education and individual school systems have spent billions to equip their schools with computers and provide Internet access (Belson & Larkin, 2004); however, studies show that teachers' integration of the Internet remains limited to some extent (CDW-G, 2005; Madden, Ford, Miller, & Levy, 2005). In 2006, Net Day's national survey of teachers revealed that 47% of K-12 teachers do not integrate the Internet regularly in their classroom instruction.

As access has become more widespread in schools, teachers are increasingly encouraged to incorporate Internet resources in their classrooms. The Internet can provide great curricular support for teachers, but as Vrasidas and McIsaac (2001) argued, simply "buying computers and software and connecting them to the Internet does not automatically imply effective uses" (p. 128). The National Education Technology Plan

(NETP) acknowledges the need for teachers to utilize Internet tools in the classroom. The sixth action step of the NETP encourages schools "to move to digital content," which includes the need for states to "ensure that teachers and students are adequately trained in the use of online content" (U.S. Department of Education, 2004, p. 43). If the Internet is going to enhance the learning environment, teachers must integrate it in the classroom.

Teachers encounter many barriers that may encourage or discourage their use of the Internet with their students. The researcher utilized the word barriers throughout this study because researchers often refer to these factors as barriers; however, the researcher acknowledged the idea that these factors may also facilitate the integration of the Internet. In 1986, Loyd and Gressard conducted a comprehensive study, which sought to identify key beliefs that relate to teachers' integration of technology. They identified four attitudes important to integration: computer usefulness/importance, computer anxiety, computer confidence, and computer enjoyment/liking. This study examined these key beliefs or motivational perceptions, which are classified as second-order barriers, and how they relate to teacher's integration of the Internet. Additionally, the researcher applied Vroom's (1995) theory of achievement motivation with Loyd and Gressard's (1986) study to guide this research.

Many studies have been conducted concerning teachers' motivational perceptions toward and instructional integration of technology (Abbitt & Klett, 2007; Loyd & Gressard, 1986; Rovai & Childress, 2003; Wang, Ertmer, & Newby, 2004; Wozney, Venkatesh, & Abrami, 2006); however, these studies often examined the perceptions of secondary (subject specific) and preservice teachers or general integration of technology. This study examined the motivational perceptions of elementary (K-5) teachers and their

instructional integration of the Internet. This group of teachers is often underrepresented in the literature. If by 2014 all students are to be "technologically literate" by eighth grade, it is imperative that elementary teachers effectively integrate the Internet (U.S. Department of Education, 2002). The researcher's purpose in this study was to add to the current research by exploring—with the aid of the expectancy-value theory of achievement motivation and Loyd and Gressard's (1986) Computer Attitude Scale (CAS)—the motivational perceptions and current practices of elementary teachers' integration of the Internet. The researcher's findings and a discussion of these findings are provided as each research question is addressed in this chapter.

Research Question 1: What are the reported motivational perceptions of elementary teachers toward instructional integration of the Internet?

The participants' motivation scores ranged from a moderately motivated level of 78 to a highly motivated level of 128 as defined by the researcher. No participants scored less than 78 on their overall motivation score. The mean motivation score was 112.4, which is within the high motivation range. The researcher was not surprised to find the teachers motivated to use the Internet in their classrooms because she often teaches classes in the Rose School District that pertain to integration of Internet tools, and teachers seem responsive and excited about using the Internet with their students. Teachers in the Rose School District are motivated; however, the researcher was surprised there were no teachers with a low motivation score. The researcher expected to have one or two teachers in the low motivation subgroup because use of the Internet in the classroom is expected and encouraged in the Rose School District. The researcher believed some teachers may be resentful toward this encouragement. However, the

absence of low motivation scores may be attributed to the Rose School District's administration because it is important to them to encourage teachers in a positive and supportive manner. The technology director and support staff are available to assist teachers with integration and have made integration a priority for the school system. Additionally, the low motivated teachers may have chosen not to participate in the study, which may explain why there were no teachers in the low motivation category.

Additional data was analyzed to determine the motivation score for each motivational perception subscale. The lowest possible score for each motivational perception was 8 (indicating a low level of motivation) and the highest possible score was 32 (indicating a high level of motivation). A high score for anxiety indicated a low level of anxiety experienced by the teacher. Studies have shown the more anxiety a teacher experiences the less likely they are to integrate the Internet with their students (Compeau, Higgins, & Huff, 1999; Hong & Koh, 2002; Rovai & Childress, 2003). All motivational perceptions had moderate to high levels; however each will be discussed separately.

Usefulness/importance

Overall, teachers reported they found Internet resources to be useful and important tools to use with their students. Rose School District teachers often share resources and are given many training opportunities that allow them to view a variety of Internet resources, which they can easily integrate into their classroom. These findings are most likely the result of these opportunities.

The subscale of usefulness/importance had the highest mean score of 29.19. The scores for this subscale ranged from 18 to 32. Thirty-seven participants had a score of 31 or 32. Teachers' responses to Question 18 of the STIMI, "I can't think of any way to use

the Internet in my classroom," supported the idea that teachers believe the Internet is a useful/important tool to use in the classroom. Ninety-one (98.9%) participants disagreed with this statement. This data confirmed that participants agree they can find a way to use Internet resources in their classrooms. This data is consistent with data from previous studies. In a survey of 238 Internet-using teachers in schools with leading-edge technology, Ravitz (1998) found that 92% of the teachers suggested that one reason for their use of the Internet is that the students benefited from its use, and teachers therefore believed it to be important for their students. Additionally, a quantitative study by Zhao and Frank (2003) found teachers often used the Internet with their students because they believed Internet skills are important to their students' future success.

Additionally, the interview participants' responses supported the findings from these earlier studies and the quantitative portion of this study. All interview participants reported that the Internet is a useful and important tool for them to use with their students; however, their definition of useful and important varied. HMMI(2) and HMHI(2) focused on the importance of using the Internet with students because many do not have access at home. HMMI(2) stated, "this is the only place 95% of my students get to see or use the Internet." HMMI(3) and HMMI(1) focused on the usefulness/importance of the Internet to show students places and things that would otherwise be impossible. HMMI(3) suggested, "…the Internet is probably one of the most useful tools in my classroom because I do not have another resource that I can go to quickly and find what I need to show the students." All of the participants including MMLI, who reported never using the Internet or technology resources in her classroom,

suggested that it was important for her students to go to the computer lab and work with the resource teacher on various Internet activities.

Enjoyment/Liking

The mean score for the motivational perception subscale of enjoyment/liking was 27.4, which is within the high motivation range. The participants reported a high level of enjoyment/liking for using the Internet with their students. The participants' scores ranged from 16 to 32. Approximately 82% of the participants suggested that "using the Internet with my students is enjoyable and stimulating" (Question 9). In study by Manternach-Wigans (1999), teachers suggested one of their motivations for using technology was their enjoyment or enthusiasm, which supports the findings of this study.

This subscale was interesting for the researcher to discuss with the interview participants. When the participants were asked, "Recount a lesson that you enjoyed integrating the Internet with your students (Question 4)," they became really excited and began naming websites they often use in the classroom. It was a rewarding experience for the researcher. The researcher had to redirect their answers to attempt to get them to share specific lessons. Some interviewees could give specific examples and some did not; however, it was evident to the researcher that most were excited by the topic and enjoyed using the Internet with their students. HMMI (1) gave an answer that sums up the teachers feelings concerning the Internet in the classroom, "It makes learning fun!"

Confidence

The subscale for confidence had a mean score of 27.33. The scores for this subscale ranged from 15 to 32. Thirty-nine participants (42%) had a score of 30 to 32, which indicates a high motivation score for confidence. Abbitt and Klett's (2007) study

of pre-service teachers and Madden, Ford, and Miller's (2005) study of 188 secondary teachers found that most teachers are confident in their skills, and often these teachers integrate the Internet more than those with a lower level of confidence. An earlier study by Vanfossen (1999) also supports this conclusion. Vanfossen's study of high school social studies teachers found that the "most powerful predictor of Internet use was the teacher's degree of comfort using the Internet" (p. 95). The data from the current study concerning teachers' level of confidence integrating the Internet in the classroom is consistent with previous studies.

In the present study, only 34% of the participants reported they agreed with the statement, "I would not consider myself successful with integrating the Internet into my regular instructional routine" (Question 2). This means that 66% of the teachers perceived themselves as successful integrators of the Internet. Additionally, 71% of the participants reported that they strongly agreed with the statement, "I would do well in a course that addresses the integration of Internet resources" (Question 23).

An analysis of teachers' responses to the STIMI and findings from previous studies (Abbitt & Klett, 2007; Madden, Ford, & Miller, 2005) suggests that most teachers are confident in their skills to integrate the Internet. According to research (Abbitt & Klett, 2007; Brinkerhaoff, 2006; Staples, Pugach, & Himes, 2005), teachers experience an increase in confidence with participation in technology training courses. The Rose School District offers numerous Internet training sessions throughout the school year. The teachers are not required to attend these but if they are having problems with particular content or web resources they will attend the class pertaining to that resource, which helps increase their integration of the resource.

The survey data was supported by the interviewees' responses. Eleven of the 12 interview participants suggested that they are prepared and adequately trained and confident in their skills of integrating the Internet in the classroom. The only participant to suggest that she was not adequately trained was MMLI, which the researcher had anticipated. The type of classes and training varied among the interview participants. The teachers felt they could implement a variety of Internet resources. Although most believed they were adequately trained, three interviewees acknowledged the Internet is continuously changing and additional training would be necessary. HMMI(1) summed it up by saying, "I feel confident in my skill level but feel that I would definitely benefit from additional training." This was a common belief among the interviewees.

Anxiety

A high score for anxiety indicates a low level of anxiety experienced by the teacher. The present researcher reversed this subscale because a high score on a motivational perception indicated the participant is more likely to integrate the Internet. Previous studies have shown the more anxiety a teacher experiences the less likely they are to integrate the Internet with their students (Compeau, Higgins, & Huff, 1999; Hong & Koh, 2002; Rovai & Childress, 2003).

The mean score for the subscale for anxiety was 28.51, which indicates participating teachers had low levels of anxiety. This subscale had the second highest mean score. The scores ranged from 19 to 32. Fifty-seven percent of the teachers reported a high motivational perception score for anxiety. The majority of the participants reported they experience little anxiety when integrating Internet tools with their students. Ninety-five percent of the participants reported they strongly disagree or

slightly disagree with the statement, "I get a sinking feeling when I think of teaching a lesson that includes the use of the Internet" (Question 22). Based on previous studies (Hong & Koh, 2002; Rovai & Childress, 2003), which indicated a negative relationship exists between teachers' level of confidence and level of anxiety experienced, the researcher expected the teachers to report low levels of anxiety after the data revealed teachers had high scores for confidence. The findings of this study support these researchers' previous studies.

Similar results were found concerning the subscale of anxiety in the semi-structured interviews. When asked to "describe a time when you felt anxious integrating the Internet in your classroom" (Question 5), it often resulted in a pause by the participant and then a giggle. Ten of the 12 participants could not think of a time when they felt anxious using the Internet with their students. HMHI(1) paused and looked at the researcher with a very puzzled look and said, "Is it a bad thing that I cannot think of a time where I ever felt anxious when I was using the Internet with my kids?" The researcher believes the teachers paused and giggled because they felt the researcher expected them to be anxious. Once the researcher affirmed that it was fine for them not to be anxious using the Internet, they would often provide a response. The researcher believes that teachers are not anxious because they think they can find someone to help solve problems encountered while using the Internet in their classrooms. HMHI(3) stated, "I do not get anxious because if I cannot figure it out, one of the students can. It's really no big deal."

Research Question 2: How do subgroups of elementary teachers (HMHI, HMMI, MMMI, and MMLI) differ in their reported motivational perceptions?

Approximately 87% of the respondents were classified in the HMHI (38.9%) or HMMI (47.8%) motivation-integration subgroups. Only 13.3% of the respondents were classified as MMMI (11.1%) or MMLI (2.2%). The majority of teachers (86.7%) scored in one of the high motivation categories (HMHI and HMMI). Only two teachers were classified in a low integration category. The researcher used four one-way ANOVAs to explore the differences among the motivation-integration subgroups and their motivational perceptions.

The researcher utilized the Scheffe post hoc procedure to determine the significant differences among the subgroups' means for each motivational perception. Each motivational perception was analyzed and the subgroups were compared to determine where differences exist. When examining the subscale for anxiety, the researcher found that there were no significant differences between similar motivation subgroups (HMHI and HMMI or MMMI and MMLI). However, The HMHI and HMMI subgroups were significantly different than the MMMI and MMLI subgroups. These results were expected because previous studies have found that a negative relationship exist between level of anxiety and level of integration (Compeau, Higgins, & Huff, 1999; Hong & Koh, 2002; Rovai & Childress, 2003). One would expect teachers with a high score for the subscale for anxiety (low anxiety) would also be those within the high motivation subgroups.

Second, the researcher examined the subscale for enjoyment/liking. Participants in the HMHI subgroup were significantly different from all other subgroups. HMMI was

significantly different from MMMI and MMLI; however, no significant difference was found between the two moderate motivation subgroups (MMMI and MMLI).

Third, the subscale of confidence was examined. Once again, the HMHI subgroup was significantly different from all other subgroups. Additionally, HMMI subgroup was significantly different than MMMI and MMLI; however, no significant differences existed between MMMI and MMLI. These results are similar to those found for the subscale of enjoyment/liking.

Fourth the subscale for usefulness/importance was examined. This subscale was examined with only three motivation-integration subgroups because there was no valid data for the MMLI subgroup. Results were similar to the subscale of anxiety. HMHI subgroup was significantly different than HMMI and MMMI subgroups. Additionally, significant differences existed between HMMI and MMMI.

This was the most difficult question for the researcher to analyze because the significant differences varied between each motivational perception. One of the interesting findings was the only subscale where there was no significant difference between HMHI and HMMI was anxiety. This had not been anticipated by the researcher because she believed there would be a significant difference between the HMHI and HMMI subgroups for all motivational perceptions. When the participants were asked about anxiety in the interview, they had interesting answers compared to the other subscales. They would pause and giggle and then respond that they are not anxious about using the Internet with their students. It is the researchers' belief that the participants in the HMHI and HMMI categories experience little to no anxiety concerning their integration of the Internet. The researcher was surprised significant differences existed

between HMHI and HMMI for remaining subscales, since high motivation would typically indicate high levels among all motivational perceptions. A second interesting finding was no significant differences existed among the MMMI and MMLI subgroups for the anxiety, enjoyment/liking, and confidence subscales.

Research Question 3: What are the reported Internet integration practices of elementary teachers?

The researcher examined teachers' responses to Section II (Questions 33, 34, and 35) of the STIMI (see Appendix A) to determine teachers' integration level and to answer this research question. The researcher utilized descriptive statistics to examine the teachers' current integration practices. An examination of Question 33 found only 21 participants (22.9%) reported using the Internet zero or one day per week with their students, which shows more than 75% of the teachers are using the Internet for instructional purposes at least twice per week. Sixty-five teachers (70.6%) reported spending one to five hours per week "developing or implementing lessons that utilize the Internet" (Question 34). Only two teachers reported spending no time on the Internet for the purpose of instruction. The researcher was surprised to find that most teachers are trying to integrate the Internet with their students to some extent. This is an increase from the 2006 Net Day study, which revealed that 47% of K-12 teachers reported they do not integrate the Internet regularly in their classroom instruction. These findings suggest that teachers' use of Internet resources is increasing. The researcher also acknowledges, as a media specialist, that she has observed a major increase in teachers' use of Internet resources in the classroom over the past five years, which supports this data.

Question 35 explored the teachers' perceived proficiency levels. An interesting conclusion from this question was that none of the teachers defined themselves as "unfamiliar" with integrating the Internet in the classroom. Approximately 45% of the teachers considered themselves to be "average" integrators of the Internet; however, an additional 22 (23.9%) defined themselves as "advanced." Those who selected "average" or "advanced" account for 68.5% of the participating teachers. A study by CDW-G (2006) found that 54% of teachers agreed that "technology is having a profound impact on the classroom and how they teach" (CDW-G, 2006, p. 7). The researcher believes this is the reason more teachers are unable to classify themselves as unfamiliar. Many school applications require the use of the Internet, so teachers have become more comfortable using the Internet. Teachers are greatly encouraged and provided training and support, which allows them to become familiar with using Internet resources with their students. This data supports the idea that teachers are becoming more accepting of the Internet and are increasing their integration of it with students.

Research Question 4: How does the reported use of Internet tools differ among four subgroups of elementary teachers?

The researcher placed the teachers' responses to questions 36–43 of the STIMI (Section III) into SPSS and utilized descriptive statistics to answer this research question. The researcher created eight categories of Internet tools based on her review of literature (Burkhart & Kelly, 2000; International Society for Technology in Education (ISTE), 2007; National Teacher Training Institute, 2006) and personal experiences as a school media specialist. Teachers were asked to "indicate how many days on average per month you integrate each of the …Internet tools into your classroom with your students."

According to previous studies, teachers' most common use of the Internet with students was informational research (Arafeh, 2002; Grabe & Grabe, 2000; National School Board Foundation, 2002). The findings from this study contradict these earlier studies. Teachers in this study reported that the Internet tool used the most with their students was educational games. Fifty-six (62.2%) teachers reported they use educational games at least five times per month. This finding may be the result of the school system's purchase of multiple online educational game subscriptions. The second most used tools were multimedia. Thirty-three (36.6%) teachers reported using multimedia tools at least five times per month. The third most used tools were information research tools. Twenty-seven (30%) teachers reported using this Internet resource five or more times per month.

The findings from the present study contradict some of the finding from previous studies. A national study conducted by CDW-G (2006) found that 86% of teachers reported their primary use of the Internet is for communication. This contradiction may be the result of the present study's focus on integration in the classroom and does not include teachers' use for administrative purposes. The CDW-G study and a study by Zhao and Frank (2003) found that communication tools were the most used by teachers but neither study focused solely on teachers' integration of these tools in the classroom. This focus may account for the contradiction in the studies.

There is limited research on teachers' use of online educational games with students; however, Oblinger (2004) argues that students have grown up playing digital games and this has shaped how they learn. Children report that approximately one-third of their time online is spent playing games (Roberts et al., 2004). Online games seem to

be quite motivating and engaging to students (Gros, 2007). This may explain why many of the teachers in the present study utilized online games with their students. Additionally, the school system has purchased multiple subscriptions to educational online gaming sites. Professional development sessions have often encouraged the use of these sites, which may account for teachers' use of this category of Internet tools.

Conversely, the least used tools were web publishing and communication/ collaboration. Fifty-seven (63.3%) teachers reported "never" using web publishing tools with their students. Similarly, 53 (58.9%) teachers reported "never" using communication/collaboration tools with their students. Interviews with participants supported this finding. When discussing teachers' use of web publishing and communication/collaboration tools with interview participants, it was evident to the researcher that the teachers are not comfortable using these resources for two main reasons. First, safety of the students was a primary concern. HMMI (2) suggested, "it is difficult to ensure that students are getting e-mails from appropriate people, even with filters on the system. I do not feel comfortable placing my students in that environment at this point." Second, permission to publish on the web was a deterrent from web publishing tools. Teachers must ensure permission from parents or guardians to publish student information on the web. HMHI (2) argues, "It is too much trouble to make sure I have the appropriate permission to use student material, so I do not use any web publishing tools."

Second, the researcher analyzed each motivation-integration subgroup's use of each tool. The most used tools for HMHI (88.6%), HMMI (53.5%), and MMMI (80%) categories were educational games. These results were a replication of the findings from

the overall group. The second most used tools for the HMHI and MMMI subgroups were multimedia tools. Twenty teachers (57.2%) in the HMHI subgroup and eight (80%) of the teachers in the MMMI subgroup reported using multimedia tools at least five times per month. HMHI (3) emphasized, "Sites like brainpop.com and United Video Streaming are great ways to reinforce things I have taught in class. Often the students will say, "Hey, that is what you taught us yesterday. It just seems to make the connection for them (students)."

One of the least used tools for the HMHI, HMMI, and MMMI subgroups was communication/collaboration tools. For these subgroups, 51.4% of the HMHI, 58.1 % of HMMI, and 90% of MMMI participants reported they "never" use communication/collaboration tools with their students. The researcher found this to contradict studies concerning teachers' overall use of Internet resources. This data contradicts the National Teacher Training Institute (NTTI) suggestion that the easiest way to get started using the Internet with students is through e-mail because it requires minimal planning. A national study conducted by CDW-G (2005) found that 86% of teachers reported that their primary use of the Internet is for communication. However, this study and a study by Zhao and Frank (2003) found teachers' use of communication/collaboration tools was primarily for administrative duties and not classroom integration.

The study by CDW-G (2005) surveyed 1,000 elementary, middle, and high school teachers to explore their use of Internet tools. Elementary teachers (51.4%) reported their primary use of communication tools was for e-mailing parents and colleagues. Only 16.6% of the elementary teachers reported using e-mail with their students. This data

may explain the contradiction in teachers' use of collaboration/communication tools that was found between this study and previous studies.

One additional concern that was expressed among teachers was maintaining the safety of students. Communication/Collaboration tools require special monitoring or specific parameters for student use. HMHI (3) expressed her concern with allowing students to use e-mail resources, "Before I allow my students to use e-mail at school, I want to ensure that I have full access to monitoring who they are talking to and what they are discussing. I am not sure I can allow this at this time." Internet safety surfaced with seven of the interview participants and may relate to their low use of communication/collaboration tools.

There were additional tools that teacher subgroups reported "never" using with their students. The HMHI and MMLI subgroups reported one of their least used tools was web publishing tools. In contrast to major findings in other subgroups and the overall group, 70% of the MMMI reported they "never" used educational game tools. This was an interesting finding considering it was the most used tool in the HMHI, HMMI, and overall group.

There is little focus on teachers' perceptions of educational games available in the literature. However the researcher suggests this low use of online educational games by the MMMI subgroup may be the result of their unfamiliarity with this category of resources. Often the training that is provided to teachers in the Rose School District concerning the use of these resources is voluntary; the present researcher has observed that often the highly motivated teachers are more likely to attend these training sessions

than other groups of teachers. Therefore, they may not be as familiar and comfortable using these resources as teachers who attend these training sessions.

When examining the MMLI subgroup, the data varied greatly from the other subgroups. The researcher expected to find different data for this subgroup, since they are the only group of low integrators. Previous studies (Johnson, 2007; Zhao & Frank, 2003) found that low integrators, often used lower-level Internet applications with students, and the data from this study supported this conclusion. Although the teachers in these subgroups did not report using any of the tools five or more times per month, they reported using information research and test preparation tools one to five times per month. In contrast, they reported "never" using multimedia or web publishing tools with their students. The teachers' lack of use of these tools may be attributed to their lack of knowledge or skills in using the Internet. These tools require a better understanding of the Internet than the information research and test preparation tools, which they reported using with their students.

Research Question 5: Is there a significant relationship among motivational perceptions and level of integration?

The researcher organized teachers' responses to the STIMI in SPSS 17.0 to answer the previous research questions. The researcher used the SPSS software and utilized Pearson's r correlation coefficient to compare the integration scores and motivational scores, which were determined in the previous research question, to determine if any relationships existed. A statistical analysis revealed that a significant relationship existed between all four motivational perceptions and level of integration

($p < .01$). This data supports a study conducted by Zhao and Frank (2003), which also found that teachers' outlook on technology influenced their use of computers in the classroom. Although the previous study focused on general technology use, the findings of this study on integration of the Internet are consistent with their findings.

The strongest correlation existed between confidence and integration ($r = .746$, $p < .01$). An earlier study of high school social studies teachers by Vanfossen (1999) found the "most powerful predictor of Internet use was the teacher's degree of comfort using the Internet" (p. 95). A more recent study of secondary teachers by Madden, Ford, Miller, and Levy (2005), which also examined teachers' integration of the Internet, found a positive relationship between teachers' use of the Internet and their level of confidence. This research and previous studies indicate high integrators tend to be more confident in their skills (Abbitt & Klett, 2005; Franklin, 2005; Pierson, 2001; Ropp, 1999).

Furthermore, the researcher examined the relationships that existed among motivational perceptions. The Pearson's *r* correlation coefficient revealed a significant relationship between all motivational perceptions. According to Vroom's (1995) theory of achievement motivation, expectancies and valences work together to determine an individual's achievement motivation. This research supports this theory because the motivational perceptions (expectancies and valences) all worked in relation to one another to determine one's motivation toward a particular task, which in this case was integration of the Internet.

The strongest relationship existed between enjoyment/liking and confidence ($r = .738$). Studies by Rovai and Childress (2003) of teacher education students and Hong and Koh (2002) of rural secondary teachers indicate computer liking and enjoyment were

strong predictors of low computer anxiety. The results from this study appear to be consistent with these studies. A positive relationship was found between enjoyment/liking and the motivational perception of reduced anxiety (r = .676).

In conclusion, this study found that teachers' instructional integration of the Internet was related to teachers' motivational perceptions. All four motivational perceptions were interrelated and worked together in relationship to the teachers' integration of the Internet. Also, consistent with Vroom's (1995) theory of achievement motivation, all perceptions can be impacted by one or all of the other motivational perceptions to determine achievement motivation.

Conclusions

The major conclusion from this study was the finding of a significant relationship between elementary teachers' motivational perceptions and their instructional integration of the Internet. A previous study by Loyd and Gressard (1986) explored similar relationships between teachers' ideas and beliefs concerning technology and teachers' use of technology. This study expanded on Loyd and Gressard's work to explore the relationships between four motivational perceptions and teachers' integration of the Internet. This study found significant relationships between all motivational perceptions and teachers' integration, as well as, significant relationships among motivational perceptions. Therefore, the researcher concluded all four motivational perceptions are interrelated and also positively related to teachers' integration, which supports Vroom's (1965) theory of achievement motivation. Since there was a significant relationship among the motivational perceptions, one low perception may be directly related to one or all of the other motivational perceptions and correspond to a low integration level.

Ultimately, if schools are going to increase teachers' use of the Internet in the classroom, they must develop methods that address all four motivational perceptions.

The second conclusion from this study was elementary teachers in the Rose School District have moderate to high motivational perceptions concerning their integration of the Internet. The STIMI did not reveal any teachers in the low motivation subgroups. Teachers in the Rose School District had a relatively positive view of the instructional use of the Internet in the classroom. The teachers' most positive motivational perception was usefulness/importance. Given the growing prevalence of the Internet in schools and society, teachers have recognized its importance to the success of students in the future.

The third major conclusion from this study was the motivational perception of confidence had the strongest relationship with integration of the Internet; however, all motivational perceptions were significantly related. Higher teachers' confidence appears to be the one motivational perception that corresponds to higher teachers' integration of the Internet. However, in the present study, confidence had the lowest mean score of all motivational perceptions among the survey participants. Although the mean score for confidence was the lowest, it remained in the high motivation level. The low mean score but strong relationship may be due to the continually changing world of the Internet. New educational Internet resources are continuously added and teachers may find it more difficult to perceive themselves as having an extremely high level of confidence in integrating these resources.

Teachers' confidence concerning their use of the Internet has increased over the years (Abbitt & Klett, 2005; Franklin, 2005; Wang, Ertmer, & Newby, 2004); however, it

remains a concern because the Internet continues to change, and there are new things to learn on a daily basis. New educational Internet tools and resources are developed that may require additional training. A study by Abbitt and Klett (2007) of pre-service teachers suggests that confidence often increased with technology training. Since the present student found a strong relationship between confidence and teachers' integration, training must be a continual process that keeps teachers familiar and confident integrating these new Internet resources.

The fourth major conclusion was the most used Internet resource among elementary teachers in the Rose School District was educational games. Children report that approximately one-third of their time online spent playing games (Roberts et al., 2004). Since digital games are a familiar media to students, schools are making an attempt to reach students through educational digital games (Squire, 2003). This research found teachers in all motivation-integration groups, except MMLI, use educational games more than any other Internet resource. The low use of educational games by MMLI may be explained because of their generally low integration of the Internet. Often educational games require the teacher to become familiar with the gaming process before using with students (Gros, 2007; Squire & Steinkuehler, 2005). Since the MMLI are low integrators of the Internet, they may not be willing to take the time necessary for successful integration of educational games into their instructional routine.

The teachers in the Rose School District appeared to be utilizing educational games because the system has multiple paid subscriptions for this resource and the educational games help reinforce skills teachers taught in class. When the interviewees revealed sites they used on a regular basis, they often listed these sites. The games were

appealing to the students, and the researcher has heard students ask teachers if they can visit these sites. The interview participants often stated they liked using the gaming sites because they reinforced class taught skills. Additionally, much of the training offered in the Rose School District has included these paid subscription gaming sites.

In contrast, the least used tool among elementary teachers in the Rose School District was communication/collaboration tools. The majority of teachers in the HMHI, HMMI, and MMMI categories reported "never" using these resources with their students; however, previous studies have shown it is the most used tool by teachers for administrative duties (CDW-G, 2005; Zhao & Frank, 2003). This category of Internet tools includes a wide variety of resources such as e-mail, blogs, chat, and discussion boards. The common concern that surfaced in the interviewees' discussion of these resources was the safety of the student. Unless the resource is a secure digital environment, teachers believed it was difficult to monitor elementary students' correspondence with others. HMHI (3) argued, "Even if I am given the ability to set parameters where students can only communicate with me or other students, there could be inappropriate comments between students." Internet safety will continue to be a concern for teachers and administrators in this digital age.

Although the present study did not address the use of Web 2.0 tools by teachers in the Rose School District, these tools are making their way into the schools. Internet safety is also a concern for the use of Web 2.0 tools in the classroom and needs to be included in the discussion. Positive collaboration among students and teachers is important in the educational process; however, Web 2.0 tools have changed the format for this collaboration. Multiple resources such as social networking sites (MySpace,

Facebook, and Webkins), and multimedia sites like YouTube are used frequently by our students and schools cannot ignore the impact they will have in our schools. The National School Board Association (NSBA) (2007) conducted a study of students (ages 9 to 17), parents, teachers, and school administrators that examined students' use of these Web 2.0 resources. The study found that 52% of schools prohibit use of social networking sites. However, 50% of the students reported using these sites for their schoolwork. Interestingly, schools are prohibiting students from using one tool that they report using at home for their schoolwork.

There are sites available for students that are safe and monitored for student use. One of the sites is CultureQuest (Gersh, 2009), which utilizes Web 2.0 tools to allow learners to explore other people and cultures via inquiry-based classroom projects. Another site is Voices of Youth (Unicef, 2009), which allows students to share their voices and learn about the culture of others. Students share their ideas on multiple topics through a variety of communication, discussion boards, and videos.

Schools must develop "thoughtful policies" and develop infrastructure to support proper use of these resources (Nagel, 2007). Until policies are in place in schools and access is no longer prohibited, teachers can search for sites that allow their students to utilize these resources in a secure and safe domain. Michigan Institute of Technology professor, Jenkins, sums up the conversation of integrating Web 2.0 tools in his interview with *NEA Today* (2008),

> Today, the ability to navigate social networks, play games, or participate in online conversations affects the way young people present themselves to the world.

> There's an informal learning that takes place as they interact with digital media, which gives way to certain skills, competencies, and literacies. (¶ 6)

Educational Recommendations

Teachers' integration of the Internet is a focus of national and state initiatives, such as No Child Left Behind, National Technology Education Plan, and Georgia Technology Standards. These initiatives have forced schools to purchase an infrastructure that provides Internet access in classrooms. The financial impact of providing access to the Internet has made teachers' use of this resource a common concern for school systems. Since the educational value of Internet resources is mostly dependent upon the ability of teachers to effectively integrate them into their classrooms, this study provides data that will assist the Rose School District and possibly other school districts in the development of methods that address teachers' motivational perceptions. If teachers are not effectively utilizing these Internet resources, then the large amount of money school systems have spent on access is not worth its educational value.

The researcher's educational recommendations focus on how schools systems may improve teacher integration of the Internet via the enhancement of each of the motivational perceptions: confidence, enjoyment/liking, usefulness/importance, and reduce anxiety. Based on the findings and conclusions of this study, educational recommendations include the following:

Recommendation 1. School systems need to develop training initiatives that enhance the confidence of teachers to integrate Internet tools in the classroom. Studies conducted by Grist and Mitchell (1992) and Wang, Ertmer, and Newby (2004) found providing teachers opportunities to observe expert teachers and setting specific

integration goals may increase teachers' confidence. Additionally, research has shown that technology training is instrumental in increasing teachers' level of confidence in integrating Internet (Abbitt & Klett, 2007; Brinkerhaoff, 2006).

The Rose School District's technology training courses are provided on a voluntary basis. Many teachers do not participate in the training; therefore, their knowledge of Internet resources is limited. The district should mandate some of the training to ensure all teachers have the skills and level of confidence necessary for successful integration. The researcher realizes teachers have varying levels of Internet skills, so she recommends schools differentiating training to meet the varying needs of teachers.

Recommendation 2. Schools systems must raise awareness of the usefulness/importance of the integration of the Internet in the classroom. This often begins with school/system administration. Teachers look to administration to model and advocate for the usefulness and importance of integrating Internet resources in the classroom (Mouza, 2003). Furthermore, administration should ensure the appropriate support staff and resources are available for teachers' Internet integration (Plair, 2008). This implies that it is important to school administration and thus may transfer the belief of importance to teachers.

Another possibility for raising teachers' awareness of the usefulness/importance of their integration of the Internet is to work closely with middle, high and post secondary schools to ensure students are moving from each level with the Internet skills necessary for their success. Teachers could meet with teachers and administrators at all levels to ensure students are mastering the National Educational Technology Standards (NETS).

Additionally, teachers need to be aware of state and national technology standards and encouraged to include these skills in their daily lessons.

Recommendation 3. Schools systems need to examine ways to enhance the enjoyment/liking of the integration of the Internet for students and teachers in the classroom. Teachers' awareness and experience of fun and enjoyable tools may increase teachers' motivational perception of enjoyment/liking. Online learning activities are often fun for students and teachers; however, fun should be defined as "serious fun" that motivates students to learn important academic skills and to have a fun experience while doing so (Rea, 2000; Wasserman, 1992). Serious fun creates optimal motivation by offering exciting opportunities for challenge seeking and mastery attainment (Rea, 2003). Serious fun is not an easy frivolous fun but a genuine fun that comes from mastering exciting challenges.

Schools should create opportunities for teachers to experience the fun and enjoyment of using the Internet resources during training and in their classrooms with students. During training, teachers can be given time to play with and explore different ways to use the Internet tools in the classroom. Teachers should be encouraged to make creative applications of the Internet by exploring and designing webquests, multimedia presentations, web sites, and other Internet learning tools. Also, administration should utilize academic coaches to model, guide, and support teachers in the learning and integration of online learning games and a variety of other educational Internet tools.

Additionally, schools should create opportunities for teachers to observe other classes having fun using Internet tools for instructional purposes. School administration should allow teachers time to do walk-through observations of classes that are

successfully enjoying learning games, multimedia tools, information research, educational blogs, and a variety of educational Internet tools. When teachers visit other classrooms and observe the serious fun that other teachers and students are experiencing through the integration of online learning tools, they may become excited and share similar tools with the students in their classroom.

School administration and support staff should create opportunities for teachers to share instructional uses of the Internet that have been both effective for learning and enjoyable. These opportunities may be during technology training sessions, professional learning communities, and grade level meetings (Mouza, 2003, Glazer, Hannafin, Polly, & Rich, 2009). Technology support staff could provide an online resource or network location where teachers may store and share serious fun learning activities that utilize educational Internet tools. It is difficult for teachers to remain abreast of the new and fascinating resources available to them on the Internet; however, with the cooperation of technology staff, school media specialist, and teachers, serious fun Internet resources can be introduced in a timely manner throughout the school and system.

Recommendation 4. School systems need to develop a plan to reduce the anxiety of teachers concerning the integration of the Internet in the classroom. Decreased anxiety correlates closely to increased confidence (Hong & Koh, 2002; Rovai & Childress, 2003). The more familiar teachers' are with Internet resources, the more likely they will be to integrate it in their classroom. Familiarity with these resources comes from training and observations of other Internet-using teachers (Abbitt & Klett, 2007; Wang, Ertmer, & Newby, 2004).

Teachers in a study conducted by Glazer et al. (2009) reported they were less anxious when they were given the opportunity to conduct hands-on activities during training sessions prior to integrating with their students. Technology training sessions should allow teachers to explore the Internet tools and integration activities. Schools can also provide the necessary support staff to assist teachers in integrating Internet resources (Mouza, 2003). This support may be partner teachers or technology support staff.

Recommendation 5. Schools must increase the safety of Internet usage for students and address Internet safety with students and teachers. This study, like studies by Kornblum (2007) and Madden, Ford, Miller, and Levy (2005), found teachers' are concerned about student safety when using Internet resources. Teachers participating in the interviews expressed their concerns about safety of their students when they are on the Internet.

The current researcher believes students must be educated on best practices for Internet safety. Teachers can create activities that allow students to explore various websites and have students look for misinformation. Teachers must teach students the basics of Internet safety: (a) Do not give out any personal information including a personal picture. (b) Never write to someone you do not know. (c) Do not meet someone you have met on the Internet. (d) Tell an adult if you read something on the Internet that makes you uncomfortable (Federal Bureau of Investigation, 2009).

There are numerous curricula available to schools that allow students to become familiar with how to protect themselves from inappropriate people and information such as CyberSmart! (2009), i-SAFE (2009), and WebWiseKids (2009). Internet safety curriculum educates students on what to do when they encounter inappropriate material

or individuals. Their level of anxiety may be reduced, if teachers felt students were working in a secure and safe environment. Additionally, system technology staff can create secure environments by placing filters on Internet servers and monitor student use through individual accounts; however, due to the nature of the Internet, a secure environment can often be breached. Therefore, students must be educated on how to safely use the Internet.

Recommendation 6. Teachers need to be encouraged to use a variety of Internet resources. This study found that teachers are utilizing the same resources frequently. Schools need to increase teachers' knowledge of and motivation to use multiple Internet integration tools. Too often teachers become comfortable with the same tools and find it difficult to branch out to new and innovative websites. Exposure to new Internet tools and adequate support staff may help increase teachers' integration of a variety of tools.

Glazer et al. (2009) studied the possibilities of a collaborative apprenticeship among kindergarten through fifth grade teachers to examine how it may encourage teachers Internet integration. Interestingly, the key leaders of the groups were teachers who modeled excellent technology-enhanced lessons. The collaborative apprenticeships would meet and share ideas and support the development, implementation, and follow-up of Internet-based lessons. Teachers agreed that they benefited from the cooperative Internet experiences with other teachers and they had "expanded their resources and possibilities" (Glazer et al., p. 36).

Technology staff and school administrators could explore the types of tools teachers are using in their personal lives. Often when teachers are using Internet tools at home, such as Facebook, MySpace, YouTube, social bookmarking, and photo sharing,

they will be more excited and comfortable using them with their students. The concern is for school systems to grant access to the sites. Too often these sites are blocked for school access (National School Boards Association, 2007). The availability of these resources may allow more variety among the tools teachers integrate in the classroom.

This study implies that motivational perceptions (second-order barriers) are important to integration of the Internet. It also acknowledges that first-order barriers/facilitators are important but they are not enough to ensure teachers' integration of the Internet. Often schools spend time providing access, training, time, software, and hardware (first-order barriers) but also motivational perceptions (second-order barriers) must be acknowledged through training and support if schools want to increase teachers' integration of the Internet. Nonetheless, the researcher recognizes first-order and second-order barriers/facilitators can work together to increase integration, so one cannot be sacrificed for the benefit of the other.

Recommendations for Further Research

This study concluded that there is a significant relationship between teachers' motivational perceptions and their instructional integration of the Internet. All participating teachers had a high to moderate level of motivation to use the Internet in their classrooms; however, some had a low level of integration. The four motivation-integration subgroups varied somewhat in their motivational perceptions and use of Internet tools. This study brings about a number of questions that may be considered for further examination. Based on the findings and conclusions of this study, recommendations for further research include the following:

1. This study was limited to elementary teachers in the Rose School District. Further study needs be conducted with middle and high school teachers so comparisons can be made with the present study. Often middle and high school teachers are subject-specific teachers. A comparison between these subject-specific teachers and self-contained elementary teachers may contribute to more comprehensive understanding of teachers' integration of the Internet.
2. A case study or observations of the interview participants could provide valuable information concerning the teachers' motivational perceptions and Internet integration practices. The interviews only allowed the researcher to examine the teachers' reported motivational perceptions and integration practices. Observations would allow the researcher to cross check the findings from the teachers' interviews with their practice.
3. Once the teachers were placed into motivation-integration subgroups, the researcher found that 47.8% of the teachers were classified as HMMI. The researcher questions why these teachers are highly motivated but only moderate integrators of the Internet. Additional interviews or observations of this group could aid in better understanding of additional barriers teachers encounter that may relate to their integration of the Internet. If these teachers are highly motivated and this study found a significant relationship between motivational perceptions and instructional integration, then what additional factors are discouraging teachers' in the HMMI subgroup integration of the Internet? What makes the participants in HMMI subgroup integrate Internet resources less than those in the HMHI subgroup?

4. This research found teachers used educational games more than any other Internet resource. A survey or interviews examining the types of games and the reasons why teachers' use these games would provide insight into teachers' frequent use of these tools. Additionally, it may provide insight into developing methods that encourage the use of other Internet resources.
5. Additional interviews examining the motivational perceptions and Internet integration practices with teachers in the outlying groups would provide a better understanding of their contrast in levels of motivation and integration. If HMLI and MMLI are motivated, why are they not integrating the Internet in the classroom? If MMHI is a high integrator of the Internet in the classroom, why is she only moderately motivated? Additionally, it would be interesting to have these individuals complete the survey again to see if their scores reliably remained the same.
6. A biographical study of MMLI could provide great insight into teachers' adoption and use of new technologies. This teacher has been teaching for 52 years and has experienced the introduction of many technological inventions. She has experienced the impact various technologies have had on teachers and students. A study of her teaching experiences could contribute to a better understanding of the factors that influence teachers' integration of new technologies.
7. Since this study was designed to explore correlations and not causations, an experimental study with a treatment group that trains motivational perceptions and a control group may provide data on the causes of instructional integration of the Internet.

Closing Thoughts

Since the introduction of the Internet in 1995 in education, teachers have experienced major changes in availability of information and digital resources. The Internet has brought a digital face to schools at all educational levels. Federal initiatives, like No Child Left Behind, which requires students to be "technologically literate by the time the student finishes the eighth grade," has forced schools to examine teachers' integration of the Internet in the classroom (U.S. Department of Education, 2002). The future of students is dependent on their opportunity to gain the technological skills necessary for their future success.

The National Center for Education Statistics (2003, 2005) reports 100% of the schools in the United States have Internet access. Furthermore, the 2006 Georgia Annual State Technology Inventory reported 98% of instructional computer were connected to the Internet. Although classrooms and computers are connected, there are some teachers who do not take advantage of these resources (CDW-G, 2005, National School Boards Foundation, 2002, Net Day, 2004). Why are teachers not utilizing the many resources that are available on the Internet?

Teachers experience many barriers/facilitators that may discourage or encourage their use of the Internet in the classroom. These barriers/facilitators can be placed into two broad categories: first-order barriers/facilitators and second-order barriers/facilitators. Much of the research concerning teachers' integration of technology and the Internet focuses on first-order barriers/facilitators (Byrom, 1998: Davidson, 2003; Net Day, 2006; Smith, 2004). This research focused on second-order barriers/facilitators. These barriers/facilitators include perceptions of usefulness/importance,

enjoyment/liking, confidence, and anxiety. Loyd and Gressard (1986) had previously examined these ideas and beliefs. The researcher combined Loyd and Gressard's research and Vroom's theory of achievement motivation to examine teachers' motivational perceptions and current integration practices.

The purpose of this research was to gain a better understanding of how elementary teachers' motivational perceptions in the Rose School District may relate to their instructional integration of the Internet. Additionally, the participants were placed into four motivation-integration categories—HMHI, HMMI, MMMI, and MMLI—to examine similarities and differences that may exist among their motivational perceptions and integration practices.

The findings indicated there was a significant relationship between elementary teachers' motivational perceptions and integration of the Internet in their classroom. Schools cannot only consider providing access, hardware, time, and training to increase teachers' integration of the Internet. They must also develop methods that encourage teachers' motivational perceptions, if they are to increase teachers' use of the Internet in the classroom. Furthermore, the findings suggest the Rose School District needs to develop training and support programs that encourage teachers' use of multiple Internet resources. When examining teachers in the different motivation-integration categories, there was little variety in types of Internet tools they are integrating.

In conclusion, teachers' motivational perceptions matter. Too often schools are consumed with providing the tangible resources necessary for teachers to access the Internet. Too often system administrators assume once they purchase the infrastructure for Internet access, teachers will use it with their students. This study found teachers'

integration of the Internet requires more than access. Technology directors, school administrators, and technology specialist must take the time to develop training and support programs that focus on both first-order barriers and motivational perceptions (second-order barriers). The Internet is a resource that will continue to transform education. Schools and teachers must embrace it and ensure students are receiving the opportunities necessary to gain the Internet skills necessary for their future success.

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APPENDICES

Appendix A:

Survey of Teachers' Internet Motivation and Integration

Survey of Teachers' Internet Motivation and Integration (STIMI)

Starla S. Barker
Georgia Southern University

The purpose of this survey is to gather information concerning teachers' motivation toward integrating the Internet in the classroom. The survey will not be anonymous. Identification information is needed, so the researcher can categorize participants for the interview portion of this study. All responses will be kept confidential. Only the researcher and system technology director will have access to the survey results. The survey should take about ten minutes to complete. Select the answer that best describes your attitudes and beliefs.

Section I- Teacher Motivation Scale (TMS)

Below are a series of statements. There are no correct answers to these statements. They are designed to permit you to indicate the extent to which you agree or disagree with the ideas expressed. Select the corresponding letter, which is closest to your agreement or disagreement with the statements.

		Strongly Agree	**Slightly** Agree	**Slightly** Disagree	**Strongly** Disagree
1.	I am not scared to use the Internet with my students.	A	B	C	D
2.	I would not consider myself successful with integrating the Internet into my regular instructional routine.	A	B	C	D
3.	I enjoy using Internet resources with my students.	A	B	C	D
4.	There are many ways to use the Internet in the classroom.	A	B	C	D
5.	I get very nervous when I use the Internet with my students.	A	B	C	D
6.	Generally, I would feel OK about trying a new activity with my students on the Internet.	A	B	C	D
7.	Using the Internet in the classroom is a waste of time.	A	B	C	D
8.	I do not feel threatened when other teachers talk about integrating the Internet in their classrooms.	A	B	C	D
9.	I think using the Internet with my students is enjoyable and stimulating.	A	B	C	D
10.	I think it is important to use the Internet with my students.	A	B	C	D
11.	I can successfully use the Internet in my lessons.	A	B	C	D
12.	I'll need a firm mastery of integrating the Internet for my future as a teacher.	A	B	C	D
13.	I would feel comfortable taking a class that focuses on Internet resources for the classroom.	A	B	C	D
14.	I'm not the type to be successful integrating the Internet.	A	B	C	D

		Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree
15.	I expect to have little use for integrating the Internet in my classroom.	A	B	C	D
16.	I am uncomfortable using the Internet with my students.	A	B	C	D
17.	I don't understand how some teachers can spend so much time integrating the Internet in their classroom and seem to enjoy it.	A	B	C	D
18.	I can't think of any way to use the Internet in my classroom.	A	B	C	D
19.	Using the Internet in my lessons is very difficult for me.	A	B	C	D
20.	Once I begin using the Internet with my students, I find it hard to stop.	A	B	C	D
21.	Knowing how to integrate the Internet will increase my job possibilities.	A	B	C	D
22.	I get a sinking feeling when I think of teaching a lesson that includes the use of the Internet resources.	A	B	C	D
23.	I would do well in a course that addresses the integration of Internet resources.	A	B	C	D
24.	I avoid using the Internet in my classroom.	A	B	C	D
25.	Anything that the Internet can be used for, I can do just as well some other way.	A	B	C	D
26.	I am comfortable using the Internet with my students.	A	B	C	D
27.	I do not think I could handle creating and implementing a lesson that utilizes Internet resources.	A	B	C	D
28.	If I have a difficulty finding an Internet resource to use in a lesson, I will continue searching until I find it.	A	B	C	D
29.	I feel uneasy and confused when I use the Internet in my classroom.	A	B	C	D
30.	I have a lot of self-confidence when it comes to integrating the Internet in my classroom.	A	B	C	D
31.	I do not enjoy working with other teachers to create activities that utilize the Internet.	A	B	C	D
32.	Integrating the Internet is not important to me in my work as a teacher.	A	B	C	D

Section II- Integration Practice

33. On average, how many days a week do you integrate Internet activities in your classroom?

a. 0
b. 1
c. 2
d. 3
e. 4
f. 5

34. On average, how many hours per week do you spend developing or implementing lessons that utilize the Internet?

a. None
b. Less than 1 hour
c. 1 hour or more, but less than 3 hours
d. 3 hours or more, but less than 5 hours
e. 5 hours or more, but less than 10 hours
f. 10 hours or more

35. Please read the following descriptions of the proficiency levels a user has in relation to integrating the Internet. Determine the level that best describes you and choose the corresponding letter.

a. Unfamiliar
I have no experience with integrating the Internet in my classroom.

b. Newcomer
I have attempted to integrate the Internet in my lessons, but I still require help on a regular basis.

c. Beginner
I am able to integrate basic Internet resources.

d. Average
I demonstrate a general competency in integrating several Internet applications with my students.

e. Advanced
I have acquired the ability to competently use a broad spectrum of Internet resources in my classroom.

f. Expert
I am extremely proficient in using a wide variety of Internet resources in my instructional activities.

Section III- Internet Tools

For items 36 to 44:
Please indicate how many days on average each month you integrate each of the following Internet tools into your instructional routine. Select the appropriate answer for each tool.

	Never	**1-5**	**5-10**	**>10**
36. Communication/Collaboration tools (e-mail, chat, discussion boards, list servs, instant messaging, blogs)	A	B	C	D
37. Project-based Learning Sites (WebQuests, Thinkquest.org)	A	B	C	D
38. Educational Games (Starfall, Destination Math, Education City Funbrain, Primary Games, Mulitplication,com, etc.)	A	B	C	D
39. Simulations/Virtual Tours (dissections, virtual field trips, MUVEs, 4-H Virtual Farm, The Nine Planets, etc)	A	B	C	D
40. Multimedia (United Video Streaming, Brainpop, TeacherTube Podcasts, Google Video, iTunes, etc.)	A	B	C	D
41. Web Publishing (school/class/student pages, kidsbookshelf.com, Writing with Writers, etc.)	A	B	C	D
42. Information Research (online search engines, GALILEO, dictionary, research databases, online encyclopedia, wikipedia, etc.)	A	B	C	D
43. Test Preparation Sites (Georgia Online Assessment - OAS)	A	B	C	D

44. Please list any additional resources:

Appendix B

Preliminary Interview Guide for Teacher Participants

Interview Questions

1. Describe your use of the Internet in the classroom. (Probe: Do you use it for whole group, small group, or individual assignments?)
2. Why do you think it is/isn't important to integrate the Internet in your classroom? (Probe: What skills do you think your students gain from using the Interent?)
3. What Internet resources have you found to be useful in your classroom?
4. Recount a lesson that you enjoyed integrating the Internet with your students.
5. Describe a time when you felt anxious integrating the Internet in your classroom.
6. Do you think that you have the skills necessary to integrate Internet activities into your classroom instruction? (Probe: What type of technology integration training have you taken? What additional training do you think would benefit you?)

Appendix C

Permission to Use Computer Attitude Scale

Barker, Starla Stone

Date: Tue, 26 Apr 2005 21:18:36 -0400
From: "Doug Loyd" <dougloyd@adelphia.net>
Subject: Re: CAS Survey
To: "Barker, Starla Stone" <starla_s_barker@GeorgiaSouthern.edu>

Starla,

I'll send you my standard email granting permission to use the CAS. Be advised however that the scale is about 20 years old and may need to be revised for your purposes. Should that be the case, you are hereby granted permission to do whatever revisions you deem necessary for your purposes, so long as you credit the original authors with wording such as "Based on the Computer Attitude Scale developed by Brenda H Loyd and Clarice P Gressard." Thanks for your interest.

- Doug

Doug Loyd
434-973-4086 (h)
434-249-8388 (m)
dougloyd@adelphia.net

----- Original Message -----
From: "Barker, Starla Stone" <starla_s_barker@GeorgiaSouthern.edu>
To: <dougloyd@hotmail.com>
Sent: Tuesday, April 26, 2005 2:17 PM
Subject: CAS Survey

>I am writing to ask permission to use the Loyd/Gressard Computer Attitude
> Scale for my dissertation research. I found the information on the
> memorial page for Brenda. I am researching teachers' motivational
> perceptions and instructional integration of the Internet.
>
> I am a doctoral candidate at Georgia Southern University in Statesboro,
> GA. You permission would be greatly appreciated.
>
> Sincerely,
>
> Starla Barker
> Media Specialist
> Reidsville Elementary School
> Phone: 912-557-6711
> Fax: 912-557-3265
>
>
> ----------
> Georgia Southern University
> http://www.GeorgiaSouthern.edu/
>

Appendix D

Permission to Use Technology Implementation Questionnaire (TIQ)

(9/16/2008) Starla Barker - Re: Permission Request Page 1

From: "Anne Wade" <wada@education.concordia.ca>
To: "Starla Barker" <SBarker@tattnall.k12.ga.us>
CC: "Phil Abrami" <abrami@education.concordia.ca>
Date: 4/21/2008 12:58 PM
Subject: Re: Permission Request

Hello Starla;
>
>I am a doctoral candidate at Georgia Southern University in
>Statesboro,GA. I am working on my dissertation which is entitled "Using
>the Internet in the Classroom: Are Teachers Motivated and Integrating?"
>
>I would like to use Section III of the Technology Implementation
>Questionnaire (TIQ) in my survey. I will need to adapt the questions, so
>they will address integration of the Internet, not general technology. I
>would appreciate permission to use this in my research. Proper credit
>will be given to the authors and CSLP.
>
>I am sending this to you because this is the e-mail address that is
>available on the web page with all of the instruments. If I need to
>contact someone else, I will be glad to. Thanks for any assistance you
>can provide.
>
>Starla S. Barker
>Media Specialist
>Reidsville Elementary School
>147 Chandler Avenue
>Reidsville, GA 30453
>(912)557-6711
>sbarker@tattnall.k12.ga.us

No problem. We' d love to see your dissertation once done. And best of luck with it.

Bye for now,
Anne

Anne Wade
Manager/Information Specialist
Centre for the Study of Learning and Performance

Tel: 514-848-2424 x2885
Fax: 514-848-4520
Email: wada@education.concordia.ca
Web: http://doe.concordia.ca/cslp/

--
This message has been scanned for viruses and
dangerous content by MailScanner, and is
believed to be clean.

Appendix E

Informed Letter of Consent for E-Survey

COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM STUDIES AND FOUNDATIONS

LETTER OF INFORMED CONSENT (E-Survey)

1. I am Starla Barker a doctoral student at Georgia Southern University. I am conducting the study titled *Integrating the Internet in the classroom: Elementary teachers' motivational perceptions and practices.* There are numerous educational tools available on the Internet. As a media specialist in an elementary school, I am interested in better understanding teachers' use of these tools.

2. Purpose of the Study: The purpose of this research is to gain a better understanding of how teachers' motivation to use the Internet relates to their integration of the Internet in the classroom and to explore the current Internet integration practices of elementary school teachers.

3. Procedures to be followed: Participation in this research will include completion of an online survey, *Survey of Teachers' Internet Motivation and Integration*, via the school's website.

4. Discomforts and Risks: Possible discomforts and risks may include slight anxiety completing the Internet survey. Otherwise, I do not anticipate any risk greater than normal life experiences.

5. Benefits:
   a. The benefits to participants include the opportunity for your voice to be heard concerning the use of the Internet in the classroom.
   b. The benefit to society is the availability of additional research concerning the use of the Internet in the classroom. This research will assist administration in the development and organization of new technology initiatives that may increase the use of the Internet in the classroom.

6. Duration/Time: An estimate of the time required for your participation in the survey portion of this study is approximately 15 minutes. The online survey will be made available to participants for one week.

7. Statement of Confidentiality: Although the researcher will strive to maintain confidentiality, there is only limited assurance of confidentiality due to the technology of the Internet.

8. Right to Ask Questions: You have the right to ask questions and have those questions answered. If you have questions about this study, please contact the researcher named above or the researcher's faculty advisor, whose contact information is located at the end of the informed consent. For questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at 912-681-0843.

9. Voluntary Participation: You do not have to participate in this research. You may end participation at any time by notifying the researcher and/or not completing the online survey. You have the right to refuse to answer any questions.

10. Penalty: There is no penalty for deciding not to participate in the study; you may decide at any time that you don't want to participate further and may withdraw without penalty or retribution.

11. You must be 18 years of age or older to consent to participate in this research study. If you consent to participate in this research study and to the terms above, please type your name and indicate the date in the designated area.

You may print a copy of this consent form to keep for your records. Please type your name and date in the space below.

Title of Project: *Integrating the Internet in the classroom: Elementary teachers' motivational perceptions and current practices*

Principal Investigator: Starla S. Barker
107 Gwendolyn Drive
Vidalia, GA 30474
sbarker@tattnall.k12.ga.us
Faculty Advisor: Dr. Dan Rea
P.O. Box 8144
Statesboro, GA 30460-8144
danrea@GeorgiaSouthern.edu

Type your name _____

Date _____

Appendix F

Informed Letter of Consent for Interview

COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM STUDIES AND FOUNDATIONS

LETTER OF INFORMED CONSENT (Interview)

1. I am Starla Barker a doctoral student at Georgia Southern University. I am conducting the study titled *Integrating the Internet in the classroom: Elementary teachers' motivational perceptions and practices.* There are numerous educational tools available on the Internet. As a media specialist in an elementary school, I am interested in better understanding teachers' use of these tools.

2. Purpose of the Study: The purpose of this research is to gain a better understanding of how teachers' motivation to use the Internet impacts their integration of the Internet in the classroom and to explore the current Internet integration practices of elementary school teachers.

3. Procedures to be followed: Participation in this research will include a taped interview with the researcher. The researcher will take notes during the interview and transcribe the audiotape at a later time.

4. Discomforts and Risks: Possible discomforts and risks may include slight anxiety sharing your experiences in an interview with the researcher. Otherwise, I do not anticipate any risk greater than normal life experiences.

5. Benefits:
    a. The benefits to participants include the opportunity for your voice to be heard concerning the use of the Internet in the classroom.
    b. The benefit to society is the availability of additional research concerning the use of the Internet in the classroom. This research will assist administration in the development and organization of new technology initiatives that may increase the use of the Internet in the classroom.

6. Duration/Time: The interview will last approximately 45 minutes.

7. Statement of Confidentiality: The researcher will maintain confidentiality of all interview participants. Pseudonyms will be used in the analysis of the interviews to ensure confidentiality.

8. Right to Ask Questions: You have the right to ask questions and have those questions answered. If you have questions about this study, please contact the researcher named above or the researcher's faculty advisor, whose contact information is located at the end of the informed consent. For questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at 912-681-0843.

9. Voluntary Participation: You do not have to participate in this research. You may end participation at any time by notifying the researcher and/or not participating in the interview. You have the right to refuse to answer any questions.

10. Penalty: There is no penalty for deciding not to participate in the study; you may decide at any time that you don't want to participate further and may withdraw without penalty or retribution.

11. You must be 18 years of age or older to consent to participate in this research study. If you consent to participate in this research study and to the terms above, please type your name and indicate the date in the designated area.

You will be given a copy of this consent form to keep for your records.

Title of Project: *Integrating the Internet in the classroom: Elementary teachers' motivational perceptions and current practices*

Principal Investigator: Starla S. Barker
107 Gwendolyn Drive
Vidalia, GA 30474
sbarker@tattnall.k12.ga.us

Faculty Advisor: Dr. Dan Rea
P.O. Box 8144
Statesboro, GA 30460-8144
danrea@GeorgiaSouthern.edu

_____ _____

Participant Signature Date

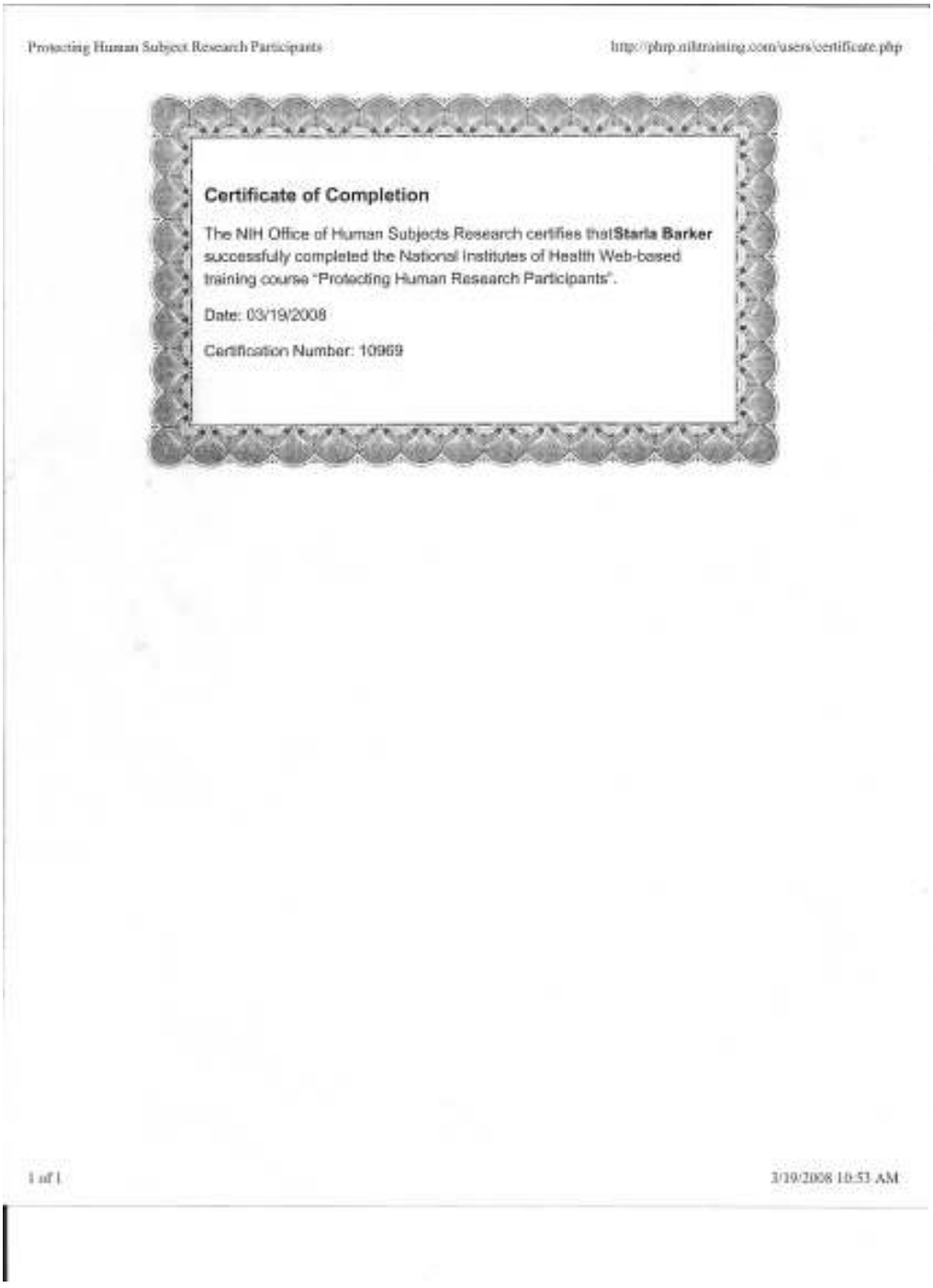
I, the undersigned, verify that the above informed consent procedure has been followed.

_____ _____

Investigator Signature Date

Appendix G

Certificate of Completion



Appendix H

Superintendent Permission

GEORGIA SOUTHERN UNIVERSITY

COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM STUDIES AND FOUNDATIONS

October 9, 2008

Jim Turbeville, Superintendent
Tattnall County Schools

Reidsville, GA 30453

Dear Mr. Turbeville,

I am proposing to conduct a mixed method study as part of my doctoral dissertation at Georgia Southern University. The study seeks to understand elementary teachers' motivation to use the Internet in the classroom. Additionally, the study will explore current integration practices of these teachers. As a media specialist, I understand the abundance of instructional resources available on the Internet. There are many teachers in your district utilizing these many resources and this research will explore these practices. The research will include an e-survey administered via the district website and interviews with teachers at the three elementary schools within your school district.

This letter is to request your permission to gather the data necessary to complete my research in the elementary schools in your school district. Upon completion of my research, a copy of the study will be sent to you at your request.

If this is agreeable to you, please sign and return this letter to me to present to the Instructional Review Board at Georgia Southern University. If you have any questions about this research, please call me at (912) 557-6711 or my supervising professor, Dr. Dan Rea at Georgia Southern University at (912) 478-1547.

Jim Turbeville, Superintendent

Date 11/10/08

Sincerely,

Starla S. Barker

Appendix I

Principal Permission

GEORGIA SOUTHERN UNIVERSITY

COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM STUDIES AND FOUNDATIONS

October 9, 2008

Denise Bargeron, Principal
Glennville Elementary School
525 Sylvester Ashford Drive
Glennville, GA 30427

Dear Mrs. Bargeron,

I am proposing to conduct a mixed method study as part of my doctoral dissertation at Georgia Southern University. The study seeks to understand elementary teachers' motivation to use the Internet in the classroom. Additionally, the study will explore current integration practices of these teachers. As a media specialist, I understand the abundance of instructional resources available on the Internet. There are many teachers in your school utilizing these many resources and this research will explore these practices. The research will include an e-survey administered via the district website and interviews with teachers at your elementary school.

This letter is to request your permission to gather the data necessary to complete my research in your school. Upon completion of my research, a copy of the study will be sent to you at your request.

If this is agreeable to you, please sign and return this letter to me to present to the Instructional Review Board at Georgia Southern University. If you have any questions about this research, please call me at (912) 557-6711 or my supervising professor, Dr. Dan Rea at Georgia Southern University at (912) 478-1547.

Denise Bargeron

Denise Bargeron, Principal

Date 11/20/08

Sincerely,

Starla S. Barker

GEORGIA SOUTHERN UNIVERSITY

COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM STUDIES AND FOUNDATIONS

October 9, 2008

Joy Pinckard, Principal
Reidsville Elementary School
147 Chandler Avenue
Reidsville, GA 30453

Dear Mrs. Pinckard,

I am proposing to conduct a mixed method study as part of my doctoral dissertation at Georgia Southern University. The study seeks to understand elementary teachers' motivation to use the Internet in the classroom. Additionally, the study will explore current integration practices of these teachers. As a media specialist, I understand the abundance of instructional resources available on the Internet. There are many teachers in your school utilizing these many resources and this research will explore these practices. The research will include an e-survey administered via the district website and interviews with teachers at your elementary school.

This letter is to request your permission to gather the data necessary to complete my research in your school. Upon completion of my research, a copy of the study will be sent to you at your request.

If this is agreeable to you, please sign and return this letter to me to present to the Instructional Review Board at Georgia Southern University. If you have any questions about this research, please call me at (912) 557-6711 or my supervising professor, Dr. Dan Rea at Georgia Southern University at (912) 478-1547.

Joy K Pinckard Date 11-10-08
Joy Pinckard, Principal

Sincerely,

Starla D. Barker
Starla S. Barker

GEORGIA SOUTHERN UNIVERSITY

COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM STUDIES AND FOUNDATIONS

October 9, 2008

Jeannie Burkhalter, Principal
Collins Elementary School
720 W. Main Street
Collins, GA 30421

Dear Mrs. Burkhalter,

I am proposing to conduct a mixed method study as part of my doctoral dissertation at Georgia Southern University. The study seeks to understand elementary teachers' motivation to use the Internet in the classroom. Additionally, the study will explore current integration practices of these teachers. As a media specialist, I understand the abundance of instructional resources available on the Internet. There are many teachers in your school utilizing these many resources and this research will explore these practices. The research will include an e-survey administered via the district website and interviews with teachers at your elementary school.

This letter is to request your permission to gather the data necessary to complete my research in your school. Upon completion of my research, a copy of the study will be sent to you at your request.

If this is agreeable to you, please sign and return this letter to me to present to the Instructional Review Board at Georgia Southern University. If you have any questions about this research, please call me at (912) 557-6711 or my supervising professor, Dr. Dan Rea at Georgia Southern University at (912) 478-1547.

Jeannie Burkhalter, Principal Date 11-13-08

Sincerely,

Starla S. Barker

GEORGIA SOUTHERN UNIVERSITY

COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM STUDIES AND FOUNDATIONS

January 5, 2009

Carol Welch, Principal
J. D. Dickerson Primary School
800 East North ST
Vidalia, GA 30474

Dear Mrs. Welch,

I am proposing to conduct a mixed method study as part of my doctoral dissertation at Georgia Southern University. The study seeks to understand elementary teachers' motivation to use the Internet in the classroom. Additionally, the study will explore current integration practices of these teachers. As a media specialist, I understand the abundance of instructional resources available on the Internet. There are many teachers in your school utilizing these many resources and this research will explore these practices. The research will include an e-survey administered via the district website and interviews with teachers at the your elementary school.

This letter is to request your permission to conduct a pilot study of the survey instrument that I will be utilizing in this research with teachers in your school. The data gathered from the surveys will allow me to determine the reliability of this survey instrument before using it in this study.

If this is agreeable to you, please sign and return this letter to me to present to the Instructional Review Board at Georgia Southern University. If you have any questions about this research, please call me at (912) 557-6711 or my supervising professor, Dr. Dan Rea at Georgia Southern University at (912) 478-1547.

Carol B. Welch — 1-7-09

Carol Welch, Principal — Date

Sincerely,

Starla D. Barker

Starla S. Barker

Appendix J

IRB Approval Letter

Georgia Southern University
Office of Research Services & Sponsored Programs

Institutional Review Board (IRB)

Phone: 912-478-0843
Fax: 912-478-0719
IRB@GeorgiaSouthern.edu
Veazey Hall 2021
P.O. Box 8005
Statesboro, GA 30460

To: Starla S. Barker
107 Gwendolyn Drive
Vidalia, GA 30474

CC: Charles E. Patterson
Associate Vice President for Research

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

Date: January 29, 2009

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

After a review of your proposed research project numbered: **H09166** and titled **"Integrating the Internet in the classroom: Elementary Teachers' Motivational Perceptions and Practices"**, 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,

Eleanor Haynes

Eleanor Haynes
Compliance Officer