To the Graduate Council:

I am submitting a dissertation written by Beth Katz Caraccio entitled, “An Evaluation of Teachers' Perceptions of a State Developed Educational Portal.” I have examined the final electronic copy of this dissertation and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Learning and Leadership.

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Dr. Valerie Rutledge, Chairperson

We have read this dissertation
and recommend its acceptance.

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AN EVALUATION OF TEACHERS' PERCEPTIONS OF A STATE DEVELOPED EDUCATIONAL PORTAL

A Dissertation

Presented for the

Doctor of Education Degree

The University of Tennessee at Chattanooga

Beth Katz Caraccio

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DEDICATION

This dissertation is dedicated to my family for always encouraging me to strive for my highest dreams and to always take advantage of every day: husband, Mark Caraccio; sons, Michael and Josh Caraccio; parents, Jack and Mozelle Katz.

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Abstract

The purpose of this study was to investigate teachers' perceptions use of a state developed educational portal. The research evaluated the differences in the quality, usefulness, and relevance of learning objects found on the website based on teachers' gender and grade level they taught. Grade level taught referred to those grades that are the focus of a participant's position: primary (K-2), elementary (3-5), middle school (6-8) and high school (9-12). The learning objects included: frameworks, tasks, standards, and videos. The researcher also reviewed the relationship between teachers' use of the learning objects and the teachers' level of technology integration according to the Apple Computer of Tomorrow technology integration scale. The research also investigated the change in the teachers' classroom pedagogy after using the website.

The instrument used was a 20-question online Likert-scale survey administered to 900 teachers in Walton County Public Schools (grades K-12). The return rate on the survey was 419, or 46.5%. All survey returns were calculated for the statistical analysis.

The data from the survey revealed a significant difference in the variables used in the study (quality, usefulness, relevance of frameworks, tasks, standards, and videos) based on gender and grade level taught. Other demographics were analyzed and those items (age, years taught, and academic area) did not show a significant difference. The survey questions dealing with extent of usage and teacher pedagogy assist both the researcher and Walton County. The questions followed the growth of the teachers and the expectations of the changes in use of technology following their redelivery training on using the state-developed educational portal. Finally, the website is a living document, so

information gathered from this study will be used to make changes for all teachers in the state.

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CHAPTER ONE

OVERVIEW OF THE STUDY

Introduction

As the availability and accessibility of computers and the Internet have grown, so has the interest in the extent and purpose for which these technologies are being used. In fact, former Senator Barack Obama embraced the infusion of technology with learning in the classroom by addressing it in a speech in Springfield, IL, on February 10, 2007. He eloquently stated,

> Let us be the generation that reshapes our economy to compete in the digital age. Let's set high standards for our schools and give them the resources they need to succeed. Let's recruit a new army of teachers, and give them better pay and more support in exchange for more accountability. Let's make college more affordable, and let's invest in scientific research, and let's lay down broadband lines through the heart of inner cities and rural towns all across America (Change.gov, 2009, ¶ 1).

Digital technology enables teachers to efficiently modify content and teaching by continually updating and improving courses or lesson plans to support higher student achievement. One focus is on the use of digital objects or resources found online. Learning objects are digital content that can be used and reused for teaching and learning. They are flexible, portable and transferable, as well as accessible. Learning objects may be used to teach a particular skill or concept, or to provide stimulating thinking and learning experiences for the teacher or student. A learning object includes digital content,

practice activities and assessment tools that are linked to one or more educational objectives and classified in a plan that allows information about the content to be stored and retrieved in a learning object repository or educational portal. The digital objects or learning objects also offer educational institutions, Departments of Education, and teachers significant long-term cost savings because course content can be re-used, shared and adapted constantly.

Georgia has been proactive in understanding the future technology needs of its teachers. In 2000, House Bill 1187 mandated that all Georgia public school educators certified in any field must demonstrate satisfactory proficiency on a test of computer skill competency, or complete a course equivalent approved by the Georgia Professional Standards Commission (PSC) (See Appendix A). The Georgia Framework for Integrating Technology in the Student-Centered Classroom (InTech) program offered teachers an extensive, curriculum-based professional development program that provided them with the training they need to successfully incorporate and integrate technology into the Georgia K-12 curriculum. In addition, the program trained and assisted administrators as they supported and encouraged their teachers in this endeavor.

Over the years teachers have gained skills to search the Internet, to locate content for planning successful technology integrated lessons, and to implement the technology lessons with children. But it takes strategic maneuvering through the many returned responses for teachers to find what they are looking for a task can be overwhelming for the teacher. Bill Thomas (2009) from Southern Regional Education Board (SREB) states, “You can spend an inordinate amount of time surfing around and getting lost out there in the abyss, but there are places out there you can go to that can clearly save you a huge

amount of time" (Education Week.com, 2009, ¶ 3). The Georgia Department of Education (GaDOE) was instrumental in the development of a website for its stakeholders (educators, students, and parents) called GeorgiaStandards.Org (GSO). The website is a way to provide information and resources necessary to help meet the educational needs of students. The goal of this website is to provide a dynamic, interactive online resource that will enhance and support teaching and learning in Georgia with the Georgia Performance Standards as the main focus.

Statement of the Problem

Currently, teachers and administrators in Georgia are required to show that they have successfully completed computer skill competencies in areas of computer use and teaching integration. This indicates there is a move to not only have technology placed in the schools, but more importantly to use it as an extension of the textbooks. As technology is becoming increasingly integrated into the classroom, teachers continue to be change agents.

Teachers must believe that technology can unlock tremendous potential in learners and themselves as teachers. The National Educational Technology Standards for Teachers (NETS-T), revised in 2008, defines the fundamental concepts, knowledge, skills, and attitudes for applying technology in educational settings. Teachers are responsible for incorporating technologies that enable a school to more comprehensively serve its teachers, students, and community. This dissertation will address the question does the state-controlled learning object repository (LOR) assist the teachers in accessing the essential digital content needed to successfully meet the needs of the students by

implementing the use of standard-based instruction in conjunction with integrating technology?

The Purpose of the Study

The purpose of this study is to research and evaluate teachers' perception of learning objects made available on the state-controlled website or educational portal. Are the learning objects useful and have quality and relevance to teachers as they meet the needs of the students in the state? How do the learning objects meet the needs of the teachers as they create lesson plans and assessments? How do the learning objects aid teachers in creating standard-based classroom pedagogy? This information should prove to be valuable to educators in developing and sharing educational learning objects between different districts, school systems, and schools throughout Georgia.

In Education Week's annual report on educational technology, *Technology Counts 2009: Breaking Away From Tradition,* Georgia earned an "A" in the areas of use of technology and capacity to use educational technology by both teachers and administrators. With the knowledge that Georgia schools have strong technology access and Georgia educators are effective users of technology, the Georgia Department of Education (GaDOE), Instructional Technology (IT) Division, took an innovative approach to support the implementation of the new Georgia Performance Standards. The Instructional Technology division also took the mission of the GaDOE, which is to lead the nation in improving student achievement, to heart. With limited funds allocated by the State Board of Education, IT embarked upon two initiatives. The first initiative was to establish Georgiastandards.Org, an interactive website housing learning objects for teachers that support and meet the needs of the students. These learning objects, all

directly correlated to the Georgia Performance Standards, include: up-to-date GPS standards, standards-based GPS frameworks and tasks, and best practice videos of lessons. A second part of the initiative was the creation of GeorgiaStandards.Org collaborative workspace, which include templates and space to create lesson plans to share across the state. Both projects are designed to meet the needs of Georgia's 100,000 teachers; primary to twelfth grade.

Computers and technology enable the teacher to challenge each student, as well as provide the teacher with up-to-date, reusable, and differentiated instructional resources to enhance the teachers lesson planning. The use of these learning repositories and digital objects can unlock tremendous potential. This will assist teachers and students in preparing for their future education and future jobs. But how do we make sure that the teachers in Georgia will make use of the website for their educational needs? As Don Knezek stated on the International Society for Technology in Education (ISTE) website homepage,

> Teachers must become comfortable as co-learners with their students and with colleagues around the world. Today it is less about staying ahead and more about moving ahead as members of dynamic learning communities. The digital-age teaching professional must demonstrate a vision of technology infusion and develop the technology skills of others. These are the hallmarks of the new education leader (ISTE.org/NETS, 2008, ¶ 3).

Background

Education appears to be the last major industry to use technology in its day-to-day business. President Bush's motto for education reform, “No Child Left Behind” is a great goal for this information age (Symonds, 2001). Symonds (2001) suggested that President Bush was declaring that in the Information Age, a solid education is a fundamental civil right. Using the tools of technology, students can raise knowledge levels, learn problem-solving techniques, develop the skills required to manage massive amounts of information, analyze concepts from several different perspectives, and develop higher-order analytical and critical thinking skills that are required in the global marketplace. As stated on the White House website,

> President Obama and Vice President Biden understand the immense transformative power of technology and innovation and how they can improve the lives of Americans. They will work to ensure the full and free exchange of information through an open Internet and use technology to create a more transparent and connected democracy. They will encourage the deployment of modern communications infrastructure to improve America's competitiveness and employ technology to solve our nation's most pressing problems -- including improving clean energy, healthcare costs, and public safety. Teachers and students who use technology learn the skills necessary for lifelong learning and productive employment (Change.gov, 2009, ¶ 2).

In recent years, U.S. public school teachers have seen the level of access to and incorporation of education technology in school and classrooms substantially increase (Lanahan & Boysen, 2006). If teachers want students to compete in the global, dynamic, information-intensive world, the students need more than paper, pencils, books, and some manual training. Technology tools offer expanded access to educational resources and information; provide effective and efficient delivery mechanisms for educational services; and assist in meeting the ever-changing educational demands from a rapidly changing world, especially for teachers. The majority of teachers are willing to embrace new technologies as they learn to use it for email, productivity activities and academic integration. In some cases, teachers have spent many hours "surfing" the Internet looking for activities that will help them to introduce, enrich, or review skills that they teach every day.

Resources called digital learning objects allow teachers to efficiently and effectively have content and teaching practices to support student achievement. Digital learning content is created and accessed by computer and communication technology. The digital content is low cost to the states because it is reusable and easily accessible by all teachers. It is typically made up of small units of instruction called learning objects (SREB, 2007).

According to David Wiley (2000), author of the *Instructional Use of Learning Objects,*

> Learning objects are defined as "digital entities deliverable over the Internet, meaning that any number of people can access and use them simultaneously (as opposed to traditional instructional media,

such as an overhead or video tape, which can only exist in one place at a time).

The primary objective of learning objects is to break educational content down into small, independent chunks that are self-contained and reusable, flexible, portable, adaptable, accessible and searchable, as well as web-based. Learning objects themselves could be videos, audio clips, Flash or JavaScript applets, simulations, PowerPoint presentations, or digital forms of worksheets and/or lesson plans. Learning objects have the potential to support both content and teaching strategies used in the classroom. Some strategies include: student engagement, differentiated instruction, collaboration, and connections between formative assessments and instructions.

Effective modeling by administrators is an important factor in the use of digital objects and learning object repositories. The National Center for Education Statistics (2000) indicates that administrative leadership has been described as one of the most important factors affecting the effective uses of technology (Kincaid & Felder, 2002). Teachers and administrators who exhibit leadership and are instrumental in modeling the use of technology do so because they understand how technology can support best practices in instruction, assessment, and the creation of effective productivity aids. This seems to support the notion that technology modeling may be one key to technology integration both as a productivity tool for teachers and assistance in instruction.

A New and Specific Learning Object Repository

As Georgia moved to implementing new curricular performance standards for students a new website was also created called GeorgiaStandards.Org. GeorgiaStandards.Org (GSO), a one-stop, web-based curriculum and instructional

resources for educators, parents, and all Georgians, has at its core the Georgia Department of Education's (GaDOE) online Georgia Performance Standards (GPS). The website proudly supports and displays a menu of those phased-in curriculum areas' (English/language arts, math, science, and social studies) standards. Not only are Georgia's public teachers able to use GeorgiaStandards.Org as the place to access these standards, but educators across the nation have the opportunity to be part of a learning community focusing on reinforcing educational "best practices" created by the Georgia Department of Education and Georgia teachers. The website provides equitable access to timely educational materials and has harnessed the power of the Internet for all participants by supporting the teaching and learning process. Ultimately one of the roles of GSO is to be a change agent within the educational system and within the state of Georgia.

Anyone who has used an automatic bank teller machine to get cash, watched a movie at home on videotape or DVD, or looked for a job is aware that technology pervades the way people live and work today. A complete list of over 8,000 Georgia Performance Standards fills more than three volumes of books and is under constant revision. The members of the Georgia Board of Education and the School Improvement Panel wanted to transform the standards from three cumbersome binders on a classroom shelf to a dynamic resource accessible from any Internet connected computer so that teachers could access them easily as well as receive updates in a timely manner.

In 2005, the standards were entered into an online database, and the GSO website was launched to make these standards more useful for Georgia educators and easier to apply in the classroom. GSO premiered in January, 2006, with more than 125 academic

unit frameworks and instructional tasks and 30,000 web links covering 12 subjects and 13 grade levels (kindergarten through 12th grade). Since its inception, GeorgiaStandards.Org has evolved into a living document, an ever-growing resource that will continue to meet the needs of Georgia students and teachers.

The site is built with the GPS standards as its major focus, but the vision has always been not only to provide the standards online, but to also build a learning object repository or a one-stop curriculum location for easy access to a vast array of teaching materials or learning objects. This resource provides all individuals interested in education in Georgia, whether in rural locations of Georgia or in metro Atlanta, the same opportunity to access updates in best teaching practices and professional development. They can also access great teaching resources, such as web links, lesson plans, assessments, webcasts and interactive projects that are directly connected to state education standards. GeorgiaStandards.Org supports a strong parent-school connection and a Parent Connections module is being created. This area will give parents access to information on Georgia education, programs, and learning activities that they can participate in with their children. The GeorgiaStandards.Org website has developed links between analysis and organizational effectiveness, diversity, change management, symbolic leadership and ethics (Driskoll and Benton, 2005).

Former Deputy Superintendent of Technology in Georgia, Dr. Mike Hall (2006) called the website a “One Stop Shop for Educators, built by Georgia teachers for Georgia teachers. We are building a community of educators who build, share, and access educational resources that are connected by the state performance standard” (Converge Magazine, p. 18).

GeorgiaStandards.Org is not intended to be a finished product; the fluid nature of the Internet renders GSO a constant work-in-progress. It is intended to be a project that will evolve with the needs of Georgia's teachers and students. Since the learning objects are created by Georgia implementation specialists (teachers who are specialist in their field of study) and then vetted (evaluated or reviewed) by the GaDOE Standards, Instruction, and Assessment Division (SIA), learning objects will continuously be relevant and useful to all Georgia teachers.

Other Web-based Programs

The Southern Regional Education Board (SREB), in cooperation with the Georgia Department of Education, was invited along with representatives from 16 southeastern states to a GeorgiaStandards.Org informational meeting. At that time a determination was made to form a consortium to secure funding to use GSO as a core for the 16 states. As a result resources developed in any of these states will be easily shared across all participants' states.

The idea of having a collection of tools and materials is the main focus of a learning object repository. Manzo (2009) states, "Having these in one place would be ideal and the fact that they draw from individuals and organizations that have expertise in specific subjects, and have a screening or review process to ensure their quality is the best" (Technology Counts, 2009, p. 19).

Impact on Teachers

The GSO project grew out of a need for easy-access and availability to the state's Georgia Performance Standards (GPS). Active participation of Georgia teachers throughout the planning and development phases of the project has been a priority. The

pairing of state standards with teacher-created units, as well as teaching and learning activities and age-appropriate web links has produced a much-needed resource. GSO answers the demand by teachers for content-related resources that are readily available and based on the established GPS standards. Educators often find instructional gaps between their assigned textbooks and the GPS standards; the resources available through the GSO site fill these gaps.

Current educational research journals are filled with information pertaining to multiple intelligences, brain-based learning, best practices, individualized instruction, and performance-oriented learners. Planning units and instructional activities that meet the needs of varied learning styles and several academic levels are challenging for experienced educators and frightening to pre-service and entry-level instructors. GeorgiaStandards.Org simplifies this task by compiling a huge collection of resources that are all just one click away.

The addition of GPS standards for technology education will require Georgia's teachers to think about curriculum in a new way. The GSO project has tapped into the creative energy of those teachers who have already made the transition to technology-rich instruction. The teacher-tested ideas and resources found at the GSO site smooth the way for those teachers just beginning to create technology-driven lessons.

GeorgiaStandards.Org empowers teachers to promote discovery, encourage open-ended learning, utilize cooperative learning activities, emphasize higher order thinking skills, and develop life skills. The GeorgiaStandards.Org website assists educators to:

- encourage students to strive for academic excellence,
- allow students to perceive school as a resource for them as they become self-reliant learners,

- strengthen the students' sense of relevance of their curricula, and
- familiarize students with a variety of technological resources.

Technology has the potential to increase students' learning opportunities, motivation, and achievement. It can help students acquire skills that are rapidly becoming essential in the workplace; it can break down barriers of time, space and economic resources.

Statewide training to use the GSO system is underway; input from teachers is sought online and at training sessions. Plans are underway for an online (eLearning) delivery of the training. Additional teachers are needed to develop best practice unit frameworks, teaching and learning activities, and performance tasks.

Rationale for the Project

As teachers' in the twenty-first century, our focus is on the need to improve student learning, reconstruct school design, and use modern technologies at the core of instruction. The Partnership for 21st Century Skills and The International Society for Technology in Education (ITSE) have collaborated to draft a framework to outline what students need to know to be successful in the future:

> Mastery of core content areas such as English (reading or language arts), mathematics, science and social studies, as core academic areas remain the centerpiece of curriculum. But these two organizations emphasize the importance of cultivating interdisciplinary themes, such as global awareness and financial, civic and health literacies, and weaving key skill areas (creativity and innovation, communication and collaboration, research and information fluency, and critical thinking, problem solving and

decision making) into core subject matter (Thinkfinity.Org, 2009, ¶ 1).

Twenty-first century skills are not new to teachers. These are concepts that have been infused in their thinking, and now part of the Georgia Performance Standards. The skills are part of being an exemplary teacher or a National Board Certified Teacher, which means they are expected as part of good teaching. The difference is that the skills need to be seamlessly placed into the major academic areas. This can be accomplished by creating real world problems (performance tasks) that challenge the students to not only use the skills from the academic area but also to find digital tools and resources to support the skills. Creating real world problems or using performance based tasks also allows for the students to use higher order thinking skills another 21st century skill. The Internet alone provides students with enormous opportunities to access:

- A trove of primary source documents previously located on library shelves, but now available online through digital archives
- Authentic scientific data across a range of fields from current and historical meteorological forecast data to economic statistics
- Geospatial tools that combine data with dynamic maps
- Global communications media that make distance collaboration, cross-cultural exchanges and rich media experiences possible (Thinkfinity.Org, 2009, ¶ 1).

It is important to understand that integrating technology requires time and support. For teachers, time is the most pressing concern. The majority of the teachers' day is spent working with students to meet the Georgia Performance Standards. They have very little official time for planning and preparing for the use of any new instructional lessons, as well as having to incorporate and prepare for use of any new technologies. With that in mind, administrators must find creative ways to provide release time and financial support for teachers to become effective computer users, so teachers can update their own technology skill level.

Significance of the Project

Teachers need information about how technology can provide support to their curriculum. School systems need to encourage teachers' shifting toward interdisciplinary project-oriented teaching and student-centered learning using technology that can be found on the state website. Teachers need to be change leaders for integration to be successful in their schools. The current and on-going changes in educational technology create an opportunity to and necessitate a transformation in the way our schools function and how our children are taught. If we cannot teach our children how to work and play in this global technological world, our children will remain at risk. Education must be based on a model that is appropriate for an information-driven society. We must prepare children for a future of unforeseeable and rapid change. For technology integration to succeed in the long run, as much time and money must be invested in principals' and teachers' training just as it is invested in the actual hardware and software.

Research Questions and Related Composite Hypotheses

The specific research questions and composite hypotheses questions explored in this study are listed below.

1 How do teachers perceive the quality of the learning objects on the GSO website?

1.1 There is a signficant difference in the perceptions of the quality of the frameworks based on gender and grade level taught.

1.2 There is a signficant difference in the perceptions of the quality of the tasks based on gender and grade level taught.

1.3 There is a signficant difference in the perceptions of the quality of the standards based on gender and grade level taught.

1.4 There is a signficant difference in the perceptions of the quality of the best practice videos based on gender and grade level taught.

2 How do teachers perceive the usefulness of the learning objects on the GSO website?

2.1 There is a signficant difference in the perceptions of the usefulness of the frameworks based on gender and grade level taught.

2.2 There is a signficant difference in the perceptions of the usefulness of the tasks based on gender and grade level taught.

2.3 There is a signficant difference in the perceptions of the usefulness of the standards based on gender and grade level taught.

2.4 There is a signficant difference in the perceptions of the usefulness of the best practice videos based on gender and grade level taught.

3 How do teachers perceive the relevance of the learning objects on the GSO website?

3.1 There is a signficant difference in the perceptions of the relevance of the frameworks based on gender and grade level taught.

3.2 There is a signficant difference in the perceptions of the relevance of the tasks based on gender and grade level taught.

3.3 There is a signficant difference in the perceptions of the relevance of the standards based on gender and grade level taught.

3.4 There is a signficant difference in the perceptions of the relevance of the best practice videos based on gender and grade level taught.

4 To what extent do teachers use the learning objects on the GSO website during lesson planning?

5 To what extent do teachers use the learning objects on the GSO website during assessment planning?

6 How do the teachers use the learning objects on the GSO website to help change their classroom pedagogy?

Definition of Terms

The following terms and definitions are included for the purpose of clarification of unfamiliar terms used within the study

Cooperative learning – A situation in which teachers or students work together to accomplish an instructional goal.

Database – An application program allowing the organization, storage, and search of information.

Digital Content – A learning object that is found most commonly associated with a computer and are found in many formats (text, audio, visual, etc).

Framework – An educational document organizing standards, benchmarks, and instructional practices.

Georgia Framework for Integrating Technology in the Student-Centered Classroom (InTech) – The InTech program is an extensive, curriculum-based professional development program that provides teachers with the training needed to successfully incorporate technology into the Georgia K-12 curriculum.

Georgia Performance Standard (GPS) – A standard is defined materials, dimensions, and quality of work for the students. The standards have been vetted (reviewed and evaluated) by multiple organizations, approved by formal review process, and then, published as public record.

GeorgiaStandards.Org (GSO) – A public website to support teachers in meeting the needs of the students through performance based instruction developed and maintained by the Georgia Department of Education – Instructional Technology Division.

House Bill 1187 – Georgia's educational bill that mandates that educators of a renewable certificate must pass a computer skills competency test before they can receive certification renewal.

Instructional resource – A group of activities, lessons, media, etc that has been prepared specifically for an instructional purpose.

Internet – A global communication network that allows computers worldwide to connect and exchange information

International Society for Technology in Education (ISTE) – A trusted source for professional development, knowledge generation, advocacy, and leadership for technology innovation. It provides leadership by advancing the effective use of technology in PK-12 and teacher education.

Learning Community – A collaborative group formed when teachers and/or students join together to work on a "learning" project.

Learning Objects (LO) – A self-standing, reusable, discrete piece of content that meets an instructional objective.

Learning Object Repository (LOR) – A digital learning content collection that provides easy access to a large storehouse of content/learning objects that can be shared, used, and reused within and across schools, colleges, and universities, and state agencies.

Levels of Technology Integration (LoTi) – A technology integration scales that rates teachers from zero to six representing no technology use to a highly evolved integration of technology that supports high-order thinking skills and encourages authentic activities for learners (Moersch, 2004).

National Educational Technology Standards (NETS) – A roadmap for improved teaching and learning by educators to help measure proficiency and set goals for the knowledge, skills, and attitudes needed to succeed in today's digital age.

National Educational Technology Standards for Teachers (NETS-T) – A framework for educators to use as they transition schools from Industrial Age to Digital Age.

Professional Standards Commission (PSC) – The Professional Standards Commission assumes full responsibility for the certification, preparation, and conduct of certified, licensed, or permitted personnel employed in the public schools of the State of Georgia.

Search Engine – A program that checks a user's request against the database of web pages tracked by the service and returns a list of matches (Grabe and Grabe, 2007).

Southern Regional Education Board (SREB) – An organization that helps government and education leaders work together to advance education and improve the social and economic life of the region.

Technology – A term used to describe tools that might prove helpful in advancing student learning and teacher teaching (Merriam-Webster Online Dictionary, 2009).

Technology - The tools and machines that may be used to solve real-world problems (Wikipedia, 2009).

Technology Integration – It simply means using computers within the existing curriculum.

Train the Trainer Model– A training model in which the expert trains a qualified group of instructors to redeliver the training.

URL – A Internet address

Methodological Assumptions

For this paper, it is assumed that:

1. Teachers use the Internet to help with planning and creating lesson plans to use in their classroom.
2. Technology integration allows for positive teacher and student outcomes.
3. Teachers can become lifelong learners who find learning fun and continue to seek knowledge after formal instruction is completed.
4. Entry technology skill level is required by Georgia teachers.
5. All teachers have access to the Internet at their schools.

6. The administrators redelivered the training to their staff.
7. The redelivery was over a period of time focusing on varies learning objects.
8. The redelivery was tailor to the needs of the school.
9. The administrator conducted quality redelivery training.

Delimitations of the Study

For this paper, the following are delimitations:

1. The survey data will be limited to one county in the state of GA.
2. The teachers will be asked about specific learning objects found on the Georgiastandards.Org website (learning object repository).

Limitations of the Study

The limitations for this study are:

1. The teachers rated their own level of technology integration.
2. The learning objects which are located on the website were vetted (evaluated) by the GaDOE.
3. The honesty of the teachers' answers while taking the complete survey.

Summary

The GeorgiaStandards.Org website is able to offer parents, educators, and students the ability to find not only what they want, but also what they need to support Georgia education. Jennifer Springgay, Converge Magazine (2006) states,

> Such an immense number of instructional technology initiatives coming out of a single state is remarkable. The combination of 21st century learning environments and professional development makes Georgia a prime example of the

direction in which the rest of the nation should head in order to bring the K-12 education system into the 21st century (p12-13).

GeorgiaStandards.Org has been a sustainable learning object repository in the state of Georgia to effectively aid teachers in support of the Georgia Performance Standards for the past five years. The GSO staff members support Michael Fullan (2005) who suggests that there is nothing more satisfying than seeing hordes of people engaged to do good together because of the leadership you help produce and self confidence that will follow. Friedman (2006) believes that some people are just born curious but for many who are not, the best way to make people love learning is either to instill in them a sense of curiosity by great teaching, or by activating their own innate curiosity by making available to them all the technologies of the flat world platform so they can educate themselves in an extremely rich way. But do teachers really feel that the learning objects have quality, are relevant, and are useful to them during their lesson planning?

Dissertation Outline

Chapter 1 provides background information and states the purpose of the project, states the significance of the study, gives limitations, delimitations, assumptions, and defines the terms used in the research proposal. Chapter 2 discusses a review of the literature related to learning object repositories, learning object, effective staff development, and barriers for teachers in dealing with technology integration, technology usage and levels of technology integration. Chapter 3 discusses the methodology that will be used for this study. It includes the nature and scope of the study, setting, and testing instrument. Chapter 4 will discuss the results of the gathered data. Chapter 5 summarizes the study and offers recommendations for practice and future research.

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

Technology has the potential to create new and more powerful teaching and learning moments, but only if teachers are prepared to guide, shape, and lead this change. Teachers must be comfortable with and knowledgeable about technology as a tool to engage students and enhance their learning. Not only is technology a part of a teacher's daily routine, but it is also a part of most students' reality today and will likely also be an important component in the future he or she will create.

Don Knezek, ISTE CEO, states,

> Teachers must become comfortable as co-learners with their students and with colleagues around the world. Today it is less about staying ahead and more about moving ahead as members of dynamic learning communities. The digital-age teaching professional must demonstrate a vision of technology infusion and develop the technology skills of others (ISTE, 2008, ¶ 2).

Technology that has changed the world outside our schools is now changing the learning and teaching environment within them. As trends develop and expand, imagination and dedication of a reenergized educational community at every level will open the way to a new golden age in American education (U.S. Dept of Education, 2006).

The research relevant to this premise focused on the following areas

- Defining learning objects
- Defining learning object repositories

- Effective staff development
- Barriers for teachers in dealing with technology
    - Lack of technology support and training
    - Lack of vision
    - Lack of time
    - Lack of access
- Technology usage by the teachers
- Levels of technology integration

Learning Objects

"Teachers are using technology to access primary sources, expose students to many types of perspectives, and enhance the overall experience through multimedia, simulations and interactive software" (ED.gov, 2008 ¶ 4). These sources are called learning objects. "Learning objects are instructional materials found on the Internet that can be used to illustrate, support, supplement, or assess student learning" (The Clearing House, 2007, p. 126). Learning objects can be as small as a paragraph of text, graphic, video, worksheet, or as significant as an entire training course. As teachers develop lesson plans that include learning objects, the learning object adds additional value and interactiveness to the lesson plan and has been shown to facilitate student academic success and learning (Krauss & Ally, 2005).

The National Center for Education Statistics (2005) stated that:

> Eighty-nine percent of public schools indicated that the teachers use the Internet to provide data to inform instructional planning at the school level. Eight-seven percent of public school teachers reported

> using the Internet to provide high quality digital content. Some examples of the learning materials or objects that can be accessed in from the Web are: Images or visits to digital libraries and museums, and any text, images, sounds, or videos that have been digitized as indicated by Internet access in U.S. Public Schools and Classrooms: 1994-2005 (p. 23).

Learning objects reduce budget expenses because they are small chunks or modules that can be reused by and are easily accessible to all teachers. By archiving and sharing the learning objects, the need to recreate what has already been produced has been reduced. In addition, use of the learning object stimulates collaboration and ingenuity and rich support for learning is provided (Lehman, 2007). The learning objects allow teachers to provide, locate, and utilize available content and teaching practices to support student achievement.

Learning Object Repositories

Learning Object Repositories (LOR) or Educational Portals offer a one-stop set of online resources for educational usage. Teachers are able to search for lesson plans or other resources by topic, grade level, and/or content to enhance teaching and learning. Additionally, teachers can share best practices and learn from each other. The LOR supports teaching and learning by the teachers.

Learning object repositories are designed to engage teachers in 21st Century learning and expand new opportunities. The advantages of a learning object repository as stated by the State Educational Technology Directors Association (SEDTA) are that it:

- Bridges the urban-rural digital divide by ensuring that all districts have equitable access to high-quality resources,
- Supports high-quality teaching, professional development and retention of teachers,
- Promotes an online support network and learning community for teachers, administrators, and even parents,
- Strengthens a standards-based, rigorous curriculum,
- Provides coaching and guidance to teachers to address the challenges of teaching a diverse student body and collaborate on winning strategies to address various learning styles, needs, and achievement levels,
- Gives school administrators' access to formative assessments and other resources, both immediate to teachers and inexpensive, and
- Offers administrators tools to securely communicate and collaborate with district personnel, as well as with the Department of Education (SEDTA, 2008, p. 10).

Effective Staff Development

The National Staff Development Council (NSDC) stated, "Our purpose is to afford quality professional development so that every educator engages in effective professional learning every day so every student achieves" (NSDC, 2009 ¶ 1). To ensure quality teaching in all classrooms NSDC created standards for staff development. These standards were revised in 2001 to include Context Standards, Process Standards and Content Standards. The area closely related to technology staff development is the

context standards where NSDC recommends organizing adults into learning communities whose goals are aligned with those of the school and district.

Staff development programs need to model how to use the technology in the teaching and learning process. The staff development workshops or training times are designed to show teachers how to use computers and related technologies to support and enhance the existing curriculum or standards. The strength in this method lies in the modeling of actual curriculum based activities, in the understanding of what learning objects and repositories are, and in instructing teachers on how to use the objects in their planning and teaching strategies within the classroom. This training does not just show teachers where to find learning objects or even the learning object repositories, but it gives them instruction about learning objects that are available for use, how to integrate these into the curriculum and how to organize classroom activities using technology.

In conjunction with NSDC's goals, the State Educational Directors Technology Association (SEDTA) identified professional development as just one strategy for increasing 21st century learning. The top five strategies involve not just the use of computers but the integration of technology and learning objects. They are:

> 1. Professional development - Professional development that provides school teachers, principals, and administrators with the capacity to integrate technology effectively into curricula and instruction, aligned with challenging state academic content and student academic achievement standards, through such means as high-quality professional development programs.

2. Increase achievement and technology literacy - Adapt or expand existing and new applications of technology to enable teachers to increase student academic achievement, including technology literacy.

3. Technology - Acquire, adapt, expand, implement, repair, and maintain existing and new applications of technology to support the school reform effort and to improve student academic achievement, including technology literacy.

4. Increase access - Establish or expand initiatives, including initiatives involving public-private partnerships, designed to increase access to technology, particularly in schools served by high-need local educational agencies.

5. Develop experts - Prepare one or more teachers in elementary and secondary schools as technology leaders with the means to serve as experts and train other teachers in the effective use of technology, providing bonus payments to these teachers (SEDTA, 2008 p. 54-55).

In addition, the International Society for Technology in Education (ISTE) has developed the National Education Technology Standards for Teachers. The following are the standards that describe exemplary teaching strategies that focus on using technology to learn and teach:

- Facilitate and inspire student learning and creativity,
- Design and develop digital-age learning experiences and assessments,

- Model digital-age work and learning,
- Promote and model digital citizenship and responsibility, and
- Engage in professional growth and leadership (ISTE, 2008)

When teachers are passive participants in "one-shot" inservice training sessions where an "expert" exposes them to new educational ideas, little chance exists that this experience will lead to a significant change in instructional practice (Wei, Andree, & Darling-Hammond, 2009; Valdez, 2000). Knowledge and skills may be developed and pedagogy changed when teachers have received professional development that involved active learning that was coherent and focused on content knowledge (Darling-Hammond, Richardson, 2009).

The focus of professional development should be on teaching and learning strategies that make a difference in daily practice and follow-up activities that translate into stronger student performance. Learning is a goal; technologies are mere delivery systems. Digital tools have allowed for the creation of educational portals through which teachers can easily access new knowledge about teaching and learning (Ferriter, 2009). Informal support systems, partnerships, teams, and collaborative structures might be the most effective elements in a broad-based change effort (Marzano & DuFour, 2009; McKenzie, 2001).

Adult learning rests on two fundamental beliefs: (1) The learner may choose from a rich and varied menu of learning experiences and possibilities, and (2) learners must take responsibility for planning, acting, and growing. One learns by doing and exploring by trying, by failing, by changing and adapting strategies and by overcoming obstacles and reflecting on instruction, challenging assumptions, designing solutions, and learning

together (Ferriter 2009). The ultimate goal is daily, effective use of new technologies in standards-based curriculum-rich lessons. Professional development needs to emphasize adult learning strategies if teachers are to learn, grow and move forward. Professional learning, especially in technology, tends to focus on an overemphasis of pure technology skills instead of methods of integrating technology into teaching and learning situations (Mishra & Koehler, 2006).

Technology training can make a positive difference for those who receive it, particularly when it comes to confidence levels, use of digital content and the willingness to experiment. As a demonstration of the impact of technology-related professional development, teachers who used computers or the Internet were more likely to assign students various types of work involving technology (Rowand, 2000). Allowing leadership teams at schools to use cooperative learning groups, community learning teams, train-the-trainer models or other are ways the school can successfully deliver training that meets the needs of the teachers in that school.

Barriers for Teachers in Dealing with Technology

This section addresses the technology barriers that teachers perceived while visiting the website, creating lesson plans and assessments for learning, as well as what factors hindered classroom pedagogy changes. These barriers included the following areas: technology support, vision, time, access, and current assessment practices. Glazer (2005) cites many reasons for low levels of technology use including: a lack of equipment or resources, lack of technical support and maintenance, and lack of technology integration.

Lack of technology support

According to Education Week's *Technology Counts '08* (2008) Georgia received a 100% grade on use and capacity to use technology. But education, as an industry, moves much more slowly than technology as an industry. Schools need to reevaluate the roles and responsibilities of their technology support personnel.

Technology support is an essential component of effective staff development that integrates technology. One way to develop this potential is to assign designated teachers to half their regular workload, and allow them to devote the remainder of their time to providing on-site support to teachers who want to use computers for instruction. Having such a resource in-house has helped many teachers take their first steps. When teachers want to learn or relearn something, they can simply approach their tech support in the building. The informal inservice that occurs during collaborative learning teams can assist in changing the interaction and learning by the teachers in the same way that we ask students to change in the classroom daily (Chappuis, Chappuis, & Stiggins, 2009). What makes a technology expert is that individual's ability to walk into most technology situations and not necessarily know everything that is happening, but not be afraid to try something to correct the problem or assist the instructor.

Individual tutoring is one way for teachers that are reluctant or fearful of technology to have technology support. If teachers have the opportunity to watch seasoned computer veterans find solutions to computer problems and then practice the problem-solving techniques under the veterans' guidance, this may allow teachers to make the connection between technology training and real-world problems. As

technology becomes increasing available to teachers, they have immediate access to using and integrating learning objects and employing learning object repositories. The technology can help create “advanced” technology skilled educators.

The quality of a school’s technology integration philosophy may be contingent upon the way it harnesses these talents and employs them in viable and worthwhile ways, offering guidance and moral support where needed. The question of how to integrate technology in the classroom is the dominant issue presently concerning technology in education. A school cannot benefit from technology if technology is not integrated.

Technology support is an important factor for teachers and the following issues should be considered: Finding ways to give teachers time with digital content, making sure that the time directly correlates with what they are doing in the classroom, and working within a learning community. Ultimately, one goal of the technology support personnel is to observe teachers and offer ideas on how the teachers could improve their use of technology. This improvement might be for the teacher to apply during lesson planning or could involve assistance to help the teacher find digital content that the students can access for an activity or part of a lesson.

Lack of vision

Teachers need training or staff development on curricular uses of technology. They need to know how it can fit into their everyday lessons. They need a vision of why staff development is important. How can staff development aid them in their daily job routines or with meeting the needs of their students? Georgia Department of Education’s vision is “Lead the nation in improving student achievement”. The GeorgiaStandards.Org website to was designed to help support teachers with the GaDOE vision. All academic

areas evaluated their curriculum and created new Georgia Performance Standards (GPS) that integrated technology into every grade level and, all academic areas, seamlessly. Teachers needed to see models of technology for their professional use and understand how it could aid in the way they might change their teaching styles and pedagogy. In 2005, the GeorgiaStandards.Org website was created to provide teachers with information about the adopted standards and best practices modeling of standard-based instruction. GeorgiaStandards.Org has served as the platform to access learning objects that support the Georgia Performance Standards. GSO offered teachers immediate access to the state standards, model instructional units, samples of student work, teacher commentary, best practice videos, professional learning materials, and instructional web resources aligned to the standards. All standards and resources are available in printable document formats, and are indexed and searchable through a powerful search engine.

Lack of time

Learning to use technology as an effective instructional tool takes time. It takes time to plan. Teachers may have to learn how to use the appropriate software, access the appropriate website, or work out technical bugs before the lesson. It may also take more instructional time to do a technology-based lesson.

The InTech training model sometimes adds insult to injury by rushing the learner through dozens of skills in too short a time with insufficient guided practice to reach a comfortable level of familiarity and skill. Rushing learners may only aggravate any anxiety, concern, and latent resistance they already feel (McKenzie, 2001). Weinbaum (2008) stated that “a lack of sufficient meeting time was the single most common

constraint cited by teachers in identifying impediments to the successful function of their teams" (p. 35).

Becoming comfortable with technology takes an immense amount of time and educators need to have computers at school and at home if they are truly to become confident users. Technology has the potential to build on whatever skill a teacher possesses. When a teacher's own interest drives the learning process, he/she works longer and harder, and is more engaged in the learning.

Teachers who fail to use online learning objects for instruction say they do not have enough time to search for the learning object, and almost as many say they do not have enough training on the learning object repositories. Even teachers who are enthusiastic about using technology can encounter problems when it comes to balancing the time they spend teaching academic content with the time they and their students require to learn the necessary technical skills.

Lack of access

Teachers begin to feel very frustrated when hardware and software access are limited. According to Education Week's *Technology Counts '08* (2008) Georgia received a grade of 73% on access to technology. The upgrades, support, and training are continuing costs that school systems often fail to see as important budget issues and needs. In some schools, individual classroom computers may not exist; the lab may be too far away, and the lab might not be big enough for a class or there could be scheduling conflicts. Another barrier to access is the lack of bandwidth in many of the schools. It may be that the school is not wired for modern computers or the hardware they currently

have is older and cannot handle speed. Rapid telecommunications changes necessitate a great need for updated wiring that just does not seem to exist in many schools.

Access takes on a different role as suggested by Brooks-Young (2009). Teachers need to have access to equipment that is well-maintained and upgraded. The teachers need access to a technician (a person who works on the computer hardware) when problems arise and/or to coordinators or trainers who will provide support in the use of technology as an instructional tool.

Technology Uses by Teachers

Technology merely provides the tools to be used for authentic learning. It is not an end unto itself. It is important to recognize that if students are writing about what they are learning, i.e. if they are investigating and asking questions and if they are using technology as an authentic context, then clearly they are learning how to read, write, and think. Technology may be used as an exploration to attain those skills. Many teachers also use computers and the Internet to conduct a number of preparatory and administrative tasks (for example: creating instructional materials, gathering information, planning lessons), and communication.

Levels of Technology Integration

Integration of technology into the classroom occurs when a teacher thinks about and uses technology to achieve a teaching and learning goal. The integration happens when teachers do not need extensive direction or training with each new tool or technology (Bonk, 2001). Appropriate technology integration causes teachers to rethink current teaching practices and continually modify the learning environment to use computers in teaching most effectively (Martin, 2005; Otero & Peressini, 2005).

Technology integration should occur effortlessly with the use of learning objects by the teacher.

Moersch (2002) defines the use of technology as an "interactive learning medium because it has the greatest and lasting impact on classroom pedagogy and is the most difficult to implement and assess" (p. 22). The challenge for teachers is not just to use technology to achieve certain isolated tasks, but also to integrate technology that supports purposeful problem-solving, and experiential learning activities as it relates to the disciplines and content areas. Teachers' level of technology use quantifies how teachers are using technology in their classroom and describes the academic achievement that results from the instructional technology practices. As teachers progress through levels of technology use, their instructional focus shifts from teacher-centered to learner-centered while the use of the technology shifts from emphasis on isolated uses to technology as a process, product and tool to enhance students' critical thinking and help them find solutions to real world problems.

There is a great deal of research on how to measure levels of technology integration by teachers. The research covers teachers' fluency levels using digital tools and resources. It also investigates the phases that teachers proceed through when integrating technology in the classroom.

Since the inception of the original LoTi (Levels of Teacher Integration) Framework, the LoTi project has grown beyond classroom technology use and has become synonymous with innovative teaching practices (Moersch, 2002).

Personal Computer Use (PCU) Framework is just one of the four frameworks that are used to articulate instructional practices.

> Personal Computer Use (PCU) Framework (LoTi, 2009) measures classroom teachers' fluency level with using digital tools and resources for student learning. As one moves to a higher PCU Intensity Level, the depth and breadth of current and emerging digital tool use (e.g., multimedia, productivity, desktop publishing, web-based applications) in the classroom increases proportionally as does the teacher's advocacy and commitment level for their use. At the highest PCU Intensity Levels, teachers assume leadership roles that transcend the everyday use of digital tools and resources toward a level of advocacy for effective technology use in their classroom, school building, and the larger global community (LoTi, 2009, ¶ 1).

Otero and Peressini (2005) found that there are five specific phases through which teachers' progress.

> In the familiarization phase, the teacher simply learns how to use the technology. At the utilization phase, the teacher uses technology in the classroom but has little understanding of, or commitment to, the technology as a pedagogical and learning tool. During the integration phase, the technology becomes an integral part of the course in terms of delivery, learning management, or other aspects of the class. In the reorientation phase, the teacher uses the technology as a tool to facilitate the reconsideration of the purpose and function of the classroom. Finally, teachers who reach the evolution phase are able to continually modify the classroom structure and

pedagogy to include evolving learning theory, technologies, and lessons learned from experience (p. 10).

Another way to look at integrating technology is through teacher expertise levels. The Apple Classrooms of Tomorrow (ACOT) (1995) study determined that teachers have often used technology as a motivator for change. Teachers progress through certain stages as they incorporate technology into teaching and learning in their classrooms. The technology aided them in changing their lessons into collaborative learning activities (SEIR*TEC, 2009).

Apple Computers of Tomorrow (See Appendix B) created levels of teacher expertise. These levels describe the stages of teacher technology integration as:

1. Entry - Educators struggle to learn the basics of using technology;
2. Adoption - Educators move from the initial struggles to successful use of technology on a basic level;
3. Adaptation - Educators move from basic use of technology to discovery of its potential for increased productivity;
4. Appropriation - Having achieved mastery over the technology, educators use it "effortlessly" as a tool to accomplish a variety of instructional and management goals; and
5. Invention - Educators are prepared to develop entirely new learning environments that utilize technology as a flexible teaching and learning tool. They begin to "think with technology," designing new ways to solve learning problems that their students may have faced in the past (SIER*TEC, n/d, ¶ 3).

Summary

In summary, the primary focus of this research addressed learning objects and repositories, effective staff development, barriers for teachers in dealing with technology (technology support, time, access, and vision), usage by the teachers and levels of technology integration. The findings indicate that teachers' use of technology is related to their time in training, preparation, and work environments. Teachers are more likely to use online learning objects and repositories when they are readily available to them. Teachers who spent more time in sustained professional development reported feeling better prepared to integrate the technology with their students. Staff development initiatives for teachers who use technology for teaching and learning can result in positive results for both students and teachers. With sufficient access and support, teachers can become better equipped to help their students comprehend difficult, to understand concepts, and to engage in learning; to provide their students with access to information and resources; and to better meet their students' individual needs (ED.gov, 2004). Brockmeier et al. (2005) stressed, “the integration of technology to achieve positive learning outcomes cannot be left to chance, but must emanate from implementation driven by an understanding of how best to use technology” (p. 55).

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this study was to research and evaluate whether learning objects made available on the state-controlled website were both relevant and/or useful to teachers as they meet the needs of the students in the state. The methodology for this research was a descriptive study. Chapter 3 presents the setting for the study, a description of the population and sample, rationale for the use of this group, a description of the research design and data collection procedures, and a summary of the analysis that was used in this study.

Research Questions and Related Composite Null Hypotheses

The specific research questions and composite null hypotheses explored in this study are listed below. These are the null hypotheses that were tested and analyzed for discussion in Chapter 4.

1 How do teachers perceive the quality of the learning objects on the GSO website?

- 1.1 There is no difference in the perceptions of the quality of the frameworks based on gender and grade level taught.
- 1.2 There is no difference in the perceptions of the quality of the tasks based on gender and grade level taught.
- 1.3 There is no difference in the perceptions of the quality of the standards based on gender and grade level taught.
- 1.4 There is no difference in the perceptions of the quality of the best practice videos based on gender and grade level taught.

2 How do teachers perceive the usefulness of the learning objects on the GSO website?

2.1 There is no difference in the perceptions of the usefulness of the frameworks based on gender and grade level taught.

2.2 There is no difference in the perceptions of the usefulness of the tasks based on gender and grade level taught.

2.3 There is no difference in the perceptions of the usefulness of the standards based on gender and grade level taught.

2.4 There is no difference in the perceptions of the usefulness of the best practice videos based on gender and grade level taught.

3 How do teachers perceive the relevance of the learning objects on the GSO website?

3.1 There is no difference in the perceptions of the relevance of the frameworks based on gender and grade level taught.

3.2 There is no difference in the perceptions of the relevance of the tasks based on gender and grade level taught.

3.3 There is no difference in the perceptions of the relevance of the standards based on gender and grade level taught.

3.4 There is no difference in the perceptions of the relevance of the best practice videos based on gender and grade level taught.

4 To what extent do teachers use the learning objects on the GSO website during lesson planning?

5 To what extent do teachers use the learning objects on the GSO website during assessment planning?

6 How do the teachers use the learning objects on the GSO website to help change their classroom pedagogy?

Description of the Setting

The setting for this research was the Walton County Public School (WCPS). Walton County is located in North-central Georgia, between Atlanta and Athens. The WCPS is comprised of 16 schools. There are nine elementary schools, three middle schools, two high schools, one alternative center, and a performance learning center/career academy. Walton County is a rural school district with a student population of 12,480 students from pre-K to 12th grades. The racial composite of the school system consists of 74% Caucasian, 19% Black, 3% Hispanic, and 4% other. Other subgroups of students include 11% of students with disabilities, and 1% of students with limited English proficiencies. At the present time, the school system has 39% of its population qualified to receive free and reduced lunch. Walton County Public School also offers pre-K classes, support for students with disabilities, and instruction for students with limited English proficiency. The socioeconomic levels of the families living in Walton County are 95% middle class with 3% upper class, and 2% lower class.

Description of the Study

At the beginning of the 2008-2009 school year, the Assistant Superintendent of Walton County contacted the GeorgiaStandards.Org program of the Georgia Department of Education. The Assistant Superintendent wanted an understanding of the GSO website and its available resources for teachers in that school system. Information was provided over the phone and the decision to inform the leadership and administrative team was made by the Assistant Superintendent of Walton County Public Schools.

The administration of Walton County believed that the single most successful and well-received professional development activity was the face-to-face GSO training sessions that had been held during the past two school years, but with State budget constraints, face-to-face GSO training had been curtailed for the current year. In an effort to continue professional learning for the county and promote online professional development, the Walton County Leadership team chose to use the GSO educational portal to further their organizational commitment to the Walton County School Improvement Plan. A partnership was made and training continued during the 2008-2009 school year through the use of webinar training. GSO staff members attended the Walton County Curriculum and Instruction meeting twice a month via online webinars. This allowed all principals and the members of the Walton County Curriculum Staff and Technology Staff to attend.

A webinar is an audio and video presentation, lecture, workshop or seminar that is transmitted over the web. A key feature of a webinar is its interactive elements or synchronous communication with others (the ability to give, receive and discuss information at the same time). Participants are able to use the audio component to ask the instructor questions and get answers in real time. The instructor is able to conduct polls and ask questions. Participants received course materials prior to the seminar and were able to view the instructor's PowerPoint slides, desktop, or whiteboard during the seminar.

The webinar sessions were designed to support the leadership team members of Walton County School District in their pursuit of high-quality education and technology education for themselves and students in the county. The WCPS leadership teams had

buy-in and principals in the schools understood and saw the value in what the website included, as well as how valuable it would be to become competent and confident about navigating through GeorgiaStandards.Org themselves; then teachers would have the same sense of urgency about using the website. It is the belief of this researcher that leadership matters in the success of any new initiative in order to ensure the initiative is implemented appropriately.

The first online webinar was scheduled with the administrative staff at the Walton County Public School Board of Education. The webinar allowed the Board of Education staff to meet at their training lab and attend via the online telecommunications and webinar software. The school administrative personnel were able to stay in their schools and join the meeting from their offices via their computers. The first meeting provided an overview into the value of learning objects and educational resources for teaching and learning aligned to the goals of the Georgia Performance Standards and existing curriculum goals within Walton County. The webinars continued for five months or ten webinar sessions. The webinar session also provided a catalyst for fundamental change to take place in the Walton County teaching and learning process.

According to Walton County's School Improvement Plan (SIP), administrators at both the county office level and school level were competent users of information and technology tools common to digital-age professionals. In today's 21st century, administrators who are hands-on users of technology understand the benefit of not only e-mail, but also of manipulating critical data and handling other technology tasks. While technology empowers administrators by the information it can readily produce and communicate, teachers also need to be empowered with these skills that allow for current

and relevant information to be used directly in the teacher's classroom and ultimately with the students.

Walton County administrators believe technology potential requires leadership take responsibility to ensure digital equity. The school administrative leaders must also know that technology can unlock tremendous potential in learners and staff with special and diverse needs. Administrators felt the responsibility for incorporating assistive technologies' that enable a school system to more comprehensively serve its students. Walton County Public School administrators believe that professional development is one of the most important elements contributing to a successful implementation of the Georgia Performance Standards. Since the GPS are housed on GeorgiaStandards.Org (GSO), then professional development on website was also a contributing factor in the success of the GPS implementation. Principals and directors were shown the resources (learning objects) found on the state educational portal through a Train the Trainer Model of professional learning. In WCPS, the train the trainer model was describe as the administration (school principals or assistant principals) taking part in the webinar by the GSO team, then redelivering the training to the members of their school or administrative staff.

During the online webinars, the GSO program team member focused on specific learning objects (frameworks, tasks, standards, best practice videos, and other online links) located on the website. The team member demonstrated how to locate learning objects through navigating the website. When learning objects were found the team member then demonstrated how the learning object could be implemented in the classroom, as well as, how it supports the Georgia Performance Standards. The

moderator placed the attendees to into groups and monitored the teams as they manipulated the learning objects. There was also a question and answer time for additional questions the administrators may have after practicing with the learning object. After the session with the GSO team member, the attendees (Walton County administrative and leadership team) were placed into an online discussion room. The principals and assistant principals (the administrative team at the school level) were asked to react to the learning object delivered during the session, to identify how it would fit into their school improvement plan (SIP), and finally to discuss how they planned to redeliver the session to their faculty. At the same time the directors discussed how they planned to support the principals and directors and instructional coaches through informal observations and drop in visits at the school. During the drop-in visits the directors would observe the teachers in the school interacting with the many learning objects and the educational portal.

Description of the Population

The population for this dissertation study was pre-kindergarten through grade 12 teachers from Walton County Public School System comprising a total of approximately 900 teachers. There were 821 full-time teachers and 34 part-time teachers. The full-time teachers represented 98% of the population for this study.

For this study, the focus was on the population represented by teachers who have direct contact with students and use the Performance Standards mandated by the state for instruction. The Walton County Schools administration at the system and the school level, support personnel, such as paraprofessionals, custodial and secretary staff were not included in the population whose responses were analyzed in this study.

Institutional Review Board Approval

The researcher followed protocol and sought permission for this study from the Georgia Department of Education (See Appendix D) and Walton County Public School System (See Appendix E). This allowed the researcher to follow procedures and gain IRB approval (See Appendix F) for the research from the Institutional Review Board (IRB) office at the University of Tennessee at Chattanooga.

The survey tool (See Appendix G) was created by the researcher and reviewed for validity. Consent to participate in this dissertation research was described in an introductory paragraph located in the online survey before the participants began. In any report, the researcher did not include any information that made it possible to identify specific participants. Research records were located on the website and only the researcher had the password to enter the secured area.

Instrumentation

One instrument was used to collect data for this study. The instrument included demographic questions and a teacher survey based on the research questions. The teacher survey was developed to measure the use of learning objects as well as the level at which the teachers use various learning objects on the GeorgiaStandards.Org website. The survey measured the quality, usefulness, and relevance of GSO learning objects, the use during lesson planning and assessment planning, and any changes in classroom pedagogy. The research survey was comprised of 20 questions using a Likert Scale format. It was divided into two parts:

1. Teacher demographics was designed to collect data that would provide a thorough description of the participants. Questions concerning the participants'

gender, age, grade level taught, academic area taught and years of teaching experience. This second included five questions.

2. Teacher survey was designed to assess the impact of the learning objects used by the participants, the level of technology integration via the use of the learning objects and the change in classroom pedagogy since using the website.

Validity

The instrumentation used in this dissertation went through a content validation process. The content validation was conducted by five individuals who did not participate in the study. These individuals were experts in the field of instructional technology, academic instruction, web design, and understanding the usefulness of learning objects. The experts judged the survey for content, structure and format, readability, and clarity. Comments were used to make necessary changes to the survey.

Research Design

This study was an evaluation using survey methodology. A descriptive study design is one in which the primary goal is to assess a sample at one specific point in time without trying to make inferences or causal statements (NEDARC, 2006). In this study, the researcher considered the following as ~~a~~ primary reason to conduct this dissertation as a descriptive study: To identify areas for further research. The study asks “What is” or “How does” questions and thus implied a survey research design.

A descriptive study was also used to understand the characteristics of a group that followed certain common practices. The goal of this descriptive study was to offer the researcher a description of the relevant aspects and to describe the characteristics of the organization that implemented and used an educational portal or website to meet the

needs of their teachers and students. Descriptive studies present data in a meaningful form thus help one understand the characteristics of a group in a given situation. It offers ideas for further probe and research, as well as helps one make certain simple decisions.

Data Collection and Recording

The survey completed by the participants of the research was prepared by the researcher using an online survey tool (SpeedSurvey). Using this data collection method, the results remained anonymous and were transferred easily for analysis. This allowed the researcher to complete the statistical analysis of the research. The survey was available electronically to the teachers for a period of two weeks. Walton County Public School distributed the website address or URL to the survey through their email system. The teachers had access to the URL to complete the survey for a period of two weeks. The teachers at this point had the choice of participating in the research or refusing to take part. The researcher had the ethical responsibility to ensure that informed consent occurred. The survey did not require teachers to sign a consent form. Instead an introductory paragraph explaining the study allowed them the opportunity to discontinue before the first question. No teacher was required to participate and no consequences were pertinent to the teachers who did participate.

Statistical Analysis

Statistical analyses were performed on the data received from the population. Descriptive statistics were used to measure the means and standard deviations for all responses received from the survey. One-way analyses of variance (ANOVA) were used to test all the null hypotheses in this study.

Summary

This chapter provided a description of the research design and described the selection of the participants, instrumentation, population, procedures, and data analysis. The data collection strategy included a 20 question Likert-type online survey. The data collected included both demographics of the participants and their perception of the learning objects located on the state-developed educational portal. Other data collected were related to the usage of the learning objects to describe the level of technology integration by the participants. Classroom pedagogy was also surveyed by finding out how the participants' classroom strategies changed after being exposed to the educational portal. This chapter also addressed the issue of validity.

CHAPTER FOUR

FINDINGS AND DATA

Introduction

The purpose of this study was to research and evaluate the teachers' perceptions of a state-developed educational portal. A number of sub-hypotheses were also addressed. This chapter presents the results of the six research questions with accompanying null hypotheses addressing teacher perceptions using the GeorgiaStandards.Org (GSO) educational portal.

Primary Research Questions:

1. How do teachers perceive the quality of the learning objects on the GSO website?
2. How do teachers perceive the usefulness of the learning objects on the GSO website?
3. How do teachers perceive the relevance of the learning objects on the GSO website?
4. To what extent do teachers use the learning objects on the GSO website during lesson planning?
5. To what extent do teachers use the learning objects on the GSO website during assessment planning?
6. How do the teachers use the learning objects on the GSO website to help change their classroom pedagogy?

This chapter focused on the quantitative results of the study and incorporated the research procedures, demographics, instrumentation, and data analysis.

Research Procedures

In this descriptive study, the researcher utilized an online survey to collect and analyze the research data. The quantitative instrument was a 20-question Likert-scale survey administrated to Walton County Public School teachers. This scale was used to determine teachers' perceptions of learning objects made available on a state-controlled website or educational portal and how this impacted their teaching and planning after introduction and training in the use of this educational portal from their administration. The survey was available for to teachers in the Walton County Public School System. The teachers were the ones who worked directly with students and the learning objects located on the GSO educational portal, as well as the recipients of the Train the Trainer model from their local school leadership team or principals.

The researcher developed the survey instrument. The items included a section to provide demographics for the study. The following categories provided relevant data for analysis: gender, age, years of teaching, grade level taught, and academic areas taught. Further items located within the survey dealt with the teachers' perceptions of the quality, usefulness, and relevance of various learning objects the teachers would come in contact with on a daily basis as they worked with the students in their classroom. Addition survey items investigated the usage of the learning objects during planning and the use of learning objects dealing with classroom pedagogy were included.

The instrument was created and delivered using the online tool SpeedSurvey.com (2007). This survey was available to the participants via the Internet. The researcher felt it was important for the survey to be continuously available from any Internet connection. Thus teachers could participate from any location and were not restricted to the school

facilities. The WCPS teachers had 14 days to complete the survey. The response rate for the survey was 424 out of a possible 900 surveys. Of the 424 returned surveys, only 5 (1%) of the responses were not used in the analysis because of incomplete data.

The researcher used descriptive statistics and one-way analysis of variance (ANOVA) to analyze the data collected for this study. The instrument was reviewed for validity. I was also test for reliability using Cronbach alpha and will be discussed at a later time.

Demographics

The population of this study consisted of teachers located in the Walton County Public Schools that included 900 potential participants. All teachers had two weeks to access and complete in the online survey. Of the 900 possible participants, 419 (46.5%) completed surveys were returned via the Speedsurvey.com website. Table 4.1 shows more females than males completed in the survey. There were 359 (85.7%) females and 60 (14.3%) males in the sample.

Table 4.1: Gender of Participants

Gender	Frequency	Percent
Female	359	85.7
Male	60	14.3
Total	419	100.0

As Table 4.2 indicates, 20% of the responding teachers had either less than five years or between eleven and fifteen years. Twenty-four percent of the teachers had between six and ten years of teaching experience, which is the greatest percent of the group. Fourteen percent of the teachers have been teaching sixteen and twenty years and nineteen percent of the teachers have been teaching for over twenty-one years.

Table 4.2: Years of Teaching Experience

Years of Experience	Frequency	Percent
0-5	86	20.5
6-10	104	24.8
11-15	85	20.3
16-20	61	14.6
21+	83	19.8
Total	419	100.0

Table 4.3 reveals the age distribution of participants. Eight point four percent of the teachers were between the ages of 22-27, which is the lowest percentage of participants. Teachers between the ages of 28-32 made up 13.4% of the returned surveys. Seventeen point nine percent of the teachers were between the ages 33-37, and 21% were between the ages 38-42. Teachers who accessed and responded to the survey that were 43 years of age and older (39.4%) made up the highest percentage of the total participants.

Table 4.3: Age of the Participants

Age	Frequency	Percent
22-27	35	8.4
28-32	56	13.4
33-37	75	17.9
38-42	88	21.0
43+	165	39.4
Total	419	100.0

Table 4.4 reveals a relatively even distribution among the participants by grade level taught. The highest cluster was the elementary school teachers (27.9%). Middle school teachers (25.3%) were the next larger group. High school teachers (24.1%) and primary teachers (22.4) respectively, comprised the lowest cluster.

Table 4.4: Grade Level Taught

Level	Frequency	Percent
Primary School(K-2)	94	22.4
Elementary School (3-5)	117	27.9
Middle school (6-8)	106	25.3
High school (9-12)	101	24.1
Total	418	100.0

Table 4.5 indicates the academic area in which the participants taught. The respondents were able to choose all that applied to their positions. This resulted in item results being which were greater than the frequency of the teachers per grade level taught. The results of the teachers were evenly fairly distributed between the major academic areas: math (23.9%), science (20.5%), social studies (20.9%), and English/Language arts (24.3%).

In analyzing the results of the survey, some of the fields (Resources/Other) were combined for better analysis of the data. One of the choices in the survey was “taught all subjects” (primary and elementary teachers). For this study the major subject areas were identified as English, math, science, and social studies. The subsequent percent of teachers (10.4%) taught either a resource class (Career, Technology, Agriculture, and Engineering-CTAE, music/band/chorus/drama, art, physical education and health) or some other areas. Some of these “other” areas included: special education, counseling, foreign language, and administration.

Table 4.5: Academic Area Taught

Academic Area	Frequency	Percent
Math	232	23.9
Science	199	20.5
Social Studies	203	20.9
English/Language Arts/Reading	235	24.3
Resource/Other	98	10.4
Total	967	100

Instrumentation Reliability

Cronbach coefficient alpha was used to complete a reliability analysis and the results are shown in Table 4.6. The researcher used Cronbach alpha to check for internal consistency. Cronbach's alpha tests the reliability of a rating that summarizes a group of survey answers. It measures underlying factors, which could reflect some attribute of the test-taker, such as omitting an answer to a survey question (Cronbach, 1951). A score was computed from each survey question and the overall score was defined by the sum of all these scores over all the test items (Cronbach, 1951). The closer the Cronbach's alpha coefficient is to 1.0, the greater the internal consistency of the items on the scale. This research used a Likert scale and so it was necessary to calculate and report the Cronbach's alpha coefficient for internal consistency reliability for any scales or subscales that were used (Gliem & Gliem, 2003).

The coefficient alpha for each of the sub-scales, quality of frameworks, tasks, standards, and videos; relevance of frameworks, tasks, standards, and videos; usefulness of frameworks, tasks, standards, and videos were acceptable as demonstrated in Table 4.6.

Table 4.6: Reliability Analysis

Scale	Coefficient Alpha	N	Number of Items
Quality of Frameworks	.941	393	12
Quality of Tasks	.940	393	12
Quality of Standards	.941	393	12
Quality of Videos	.941	393	12
Relevance of Frameworks	.939	393	12
Relevance of Tasks	.938	393	12
Relevance of Standards	.940	393	12
Relevance of Videos	.941	393	12
Usefulness of Frameworks	.939	393	12
Usefulness of Tasks	.938	393	12
Usefulness of Standards	.940	393	12
Usefulness of Frameworks	.941	393	12
Total Scale	.945	393	144

Results of Research Questions and Data Analyses

This portion of the results reflects the data results from the six research questions with accompanying null hypotheses. A series of analyses were conducted to determine the differences of the factors (quality, usefulness, and relevance of frameworks, tasks, standards, and videos) on two demographics (gender and grade level taught). This relationship found the means and standard deviations. Analyses were also conducted on other demographics: age, academic areas taught, and years of teaching experience. The results were shown to be not significant.

Primary Research Question #1: How do teachers perceive the quality of the learning objects on the GSO website?

Descriptive statistics were used to answer this first research question. Table 4.7 presents the means and standard deviations for the quality of learning objects located on GeorgiaStandards.Org website. The quality of frameworks, tasks, standards, and videos

were evaluated on the following scale: 5=very good, 4= good, 3=somewhat good, 2=of little good and 1= not good at all.

The participants rated the quality of learning objects involving frameworks (M=4.00) and standards (M=4.06) higher than the quality of tasks (M=3.85). The quality of videos (M=3.69) was rated lowest by the participants. There was a discrepancy in the number of participants who answered the questions about the quality of the learning objects found on the educational portal. The question dealing with the quality of videos was the question to which the participants frequently did not respond. The videos were ranked as the lowest quality learning object based on the participants' survey returns.

Table 4.7: Means and Standard Deviations for Quality of Learning Objects

Learning Objects	**N**	**Means**	**SD**
Quality of Frameworks	417	4.00	.707
Quality of Tasks	419	3.85	.739
Quality of Standards	416	4.06	.737
Quality of Videos	404	3.69	.747

Eight hypotheses were tested for this primary question. One-way ANOVA was used to test all the null hypotheses for research question one. The Scheffe post-hoc test was used to determine where differences appeared among the grade levels.

Null Hypothesis #1.1: There is no difference in the perceptions of the quality of the frameworks based on gender.

Table 4.8 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(1,415)}=7.06$; $p=.008$). There was a significant gender difference in respondents' perceptions of the quality of the frameworks.

Table 4.8: ANOVA Table for Quality of Frameworks by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	3.483	1	3.483	7.069	.008
Within Groups	204.507	415	.493		
Total	207.990	416			

Table 4.9 shows the means and standard deviations (SD) for gender difference. A means of 4.00 indicates the teachers felt good about the quality of frameworks, while a 3.78 showed less confidence in the quality of the frameworks. Females (M=4.04) felt more favorable toward the quality of the frameworks than males (M=3.78) related to the quality of the frameworks.

Table 4.9: Means and SD for Quality of Frameworks by on Gender

Gender	N	Means	SD
Female	358	4.04	.699
Male	59	3.78	.721
Total	417	4.00	.707

Null Hypothesis #1.2: There is no difference in the perceptions of the quality of the frameworks based on grade level taught.

Table 4.10 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,413)}$=11.55; p=.000). There was a significant difference in respondents' perceptions of the quality of the frameworks based on the grade levels they taught.

Table 4.10: ANOVA Table for Quality of Frameworks by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	16.111	3	5.370	11.559	.000
Within Groups	191.879	413	.465		
Total	207.990	416			

According to Table 4.11, a post-hoc analysis using Scheffe Test revealed that there was a significant difference between primary teachers (M=4.27) and both middle (M=3.99) and high (M=3.70) school teachers. This indicates that primary teachers felt more favorable about the quality of frameworks as compared to elementary, middle, and high school teachers.

Table 4.11: Post-hoc Analysis for Quality of Frameworks by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	94	4.27	.625	-			
Elementary School	116	4.07	.642	NS	-		
Middle School	106	3.99	.724	*	NS	-	
High School	101	3.70	.729	*	*	*	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Null Hypothesis #1.3: There is no difference in the perceptions of the quality of the tasks based on gender.

Table 4.12 shows the ANOVA results for this null hypothesis. The null hypothesis was retained ($F_{(1,417)}$=3.46; p=.063). There was no difference based on gender in respondents' perceptions of the quality of the tasks.

Table 4.12: ANOVA Table for Quality of Tasks by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	1.882	1	1.882	3.467	.063
Within Groups	226,343	417	.493		
Total	228.224	418			

Table 4.13 shows the means and standard deviations for gender difference. Females (M=3.87) and males (M=3.68) felt very similarily about the quality of the tasks.

Table 4.13: Means and SD for Quality of Tasks by Gender

Gender	N	Means	SD
Female	359	3.87	.731
Male	60	3.68	.770
Total	419	3.85	.739

Null Hypothesis #1.4: There is no difference in the perceptions of the quality of the tasks based on grade levels taught.

Table 4.14 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,415)}$=9.55; p=.000). There was a significant difference in respondents' perceptions of the quality of the tasks based on grade levels taught.

Table 4.14: ANOVA Table for Quality of Tasks by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	14.750	3	4.917	9.558	.000
Within Groups	213.475	415	.514		
Total	228.224	418			

According to Table 4.15, a post-hoc analysis using Scheffe Test revealed that there was a significance difference between primary teachers (M=4.15) and the rest of the grade levels taught (elementary (M=3.86), middle (M=3.79), and high (M=3.61) school teachers). This indicates that primary teachers felt that the quality of tasks were good while the elementary, middle, and high school teachers indicated they believed the tasks were somewhat good.

Table 4.15: Post-hoc Analysis for Quality of Tasks by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	94	4.15	.687	-			
Elementary School	117	3.86	.668	*	-		
Middle School	106	3.79	.801	*	NS	-	
High School	102	3.61	.706	*	NS	NS	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Null Hypothesis #1.5: There is no difference in the perceptions of the quality of the standards based on gender.

Table 4.16 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(1,414)}$=8.95; p=.003). Therewass a significant gender difference in respondents' perceptions of the quality of the standards.

Table 4.16: ANOVA Table for Quality of Standards by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	4.773	1	4.773	8.952	.003
Within Groups	226.343	414	.533		
Total	228.224	415			

Table 4.17 shows the means and standard deviations for gender difference. Females (M=4.10) felt good about the quality of standards, while the males (M=3.80) felt somewhat good about the quality of the standards.

Table 4.17: Means and SD for Quality of Standards by Gender

Gender	N	Means	SD
Female	357	4.10	.725
Male	59	3.80	.761
Total	416	4.06	.737

Null Hypothesis #1.6: There is no difference in the perceptions of the quality of the standards based on grade levels taught.

Table 4.18 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,412)}$=18.28; p=.000). There was a significant difference in respondents' perceptions of the quality of the standards based on grade levels taught.

Table 4.18: ANOVA Table for Quality of Standards by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	26.499	3	8.833	18.287	.000
Within Groups	198.999	412	.483		
Total	225.498	415			

According to Table 4.19, a post-hoc analysis using Scheffe Test revealed that there was a significance difference between high school teachers (M=3.65) and other grade levels taught. High school teachers felt that the quality of standards were somewhat good, while primary (M=4.33), elementary (M=4.22), and middle (M=4.04) teachers indicated that the quality of standards were good. The data illustrated that there was a significant difference in the perception of the quality of the standards between high school teachers and all other grade levels taught. This indicated that primary, elementary, and middle school teachers felt better in the quality of the standards than the high school teachers.

Table 4.19: Post-hoc Analysis for Quality of Standards by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	93	4.33	.631	-			
Elementary School	116	4.22	.670	NS	-		
Middle School	106	4.04	.661	*	NS	-	
High School	101	3.65	.805	*	*	*	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Null Hypothesis #1.7: There is no difference in the perceptions of the quality of the videos based on gender.

Table 4.20 shows the ANOVA results for this null hypothesis. The null hypothesis was retained ($F_{(1,402)}$=.006; p=.940). There was not a gender difference in respondents' perceptions of the quality of the videos.

Table 4.20: ANOVA Table for Quality of Videos by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	.003	1	.003	.006	.940
Within Groups	224.700	402	.559		
Total	224.703	403			

Table 4.21 shows the means and standard deviations for gender difference. Females (M=3.69) and males (M=3.69) felt exactly the same about the quality of the videos located on the website.

Table 4.21: Means and SD for Quality of Videos by Gender

Gender	N	Means	SD
Female	345	3.69	.747
Male	59	3.69	.749
Total	404	3.69	.747

Null Hypothesis #1.8: There is no difference in the perceptions of the quality of the videos based on grade level taught.

Table 4.22 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,400)}$=3.30; p=.020). There was a significant difference in respondents' perceptions of the quality of the videos in regards to grade level taught.

Table 4.22: ANOVA Table for Quality of Videos by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	5.442	3	1.814	3.309	.020
Within Groups	219.261	400	.548		
Total	224.703	403			

According to Table 4.23, a post-hoc analysis using Scheffe Test revealed that there was a significance difference between high school teachers (M=3.54) and primary (M=3.87) school teachers. The results also indicated that middle (M=3.70) teachers felt that the videos have better quality than the elementary (M=3.66) teachers. Overall, the teachers who completed in the survey felt that the quality of the videos was somewhat good.

Table 4.23: Post-hoc Analysis for Quality of Videos by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	93	3.87	.679	-			
Elementary School	112	3.66	.800	NS	-		
Middle School	102	3.70	.701	NS	NS	-	
High School	97	3.54	.765	*	NS	NS	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Primary Research Question #2: How do teachers perceive the usefulness of the learning objects on the GSO website?

Descriptive statistics were used to answer this second research question. Table 4.24 presents the means and standard deviations for the usefulness of learning objects located on GeorgiaStandards.Org website. The usefulness of frameworks, tasks, standards, and videos were evaluated using the following scale: 5=very useful, 4= useful, 3=somewhat useful, 2=of little use and 1= not useful at all.

The participants rated the usefulness of learning objects involving frameworks (M=3.92) and standards (M=4.08) higher than the usefulness of tasks (M=3.77). The usefulness of videos (M=3.59) was rated the lowest by the participants. There was a discrepancy in the number of participants who answered the question focusing on the quality of the learning objects. The question that referred to the quality of videos emerged as the least answered question on the survey. The videos were ranked as the lowest quality learning object based on the participants survey returns.

Table 4.24: Means and Standard Deviations for Usefulness of Learning Objects

Learning Objects	**N**	**Means**	**SD**
Usefulness of Frameworks	419	3.92	.786
Usefulness of Tasks	419	3.77	.788
Usefulness of Standards	418	4.08	.759
Usefulness of Videos	410	3.59	.820

Eight hypotheses were tested for this primary question. One-way ANOVA was used to test all the null hypotheses for research question two. The Scheffe post-hoc test was used to determine where differences appeared among the grade levels.

Null Hypothesis #2.1: There is no difference in the perceptions of the usefulness of the frameworks based on gender.

Table 4.25 shows the ANOVA results for this null hypothesis. The null hypothesis was retained ($F_{(1,417)}$=.101; p=.678). There was not a difference in respondents' perceptions of the usefulness of the frameworks when considering the gender of the participants.

Table 4.25: ANOVA Table for Usefulness of Frameworks by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	.101	1	.101	.162	.678
Within Groups	258.300	417	.622		
Total	258.401	418			

Table 4.26 shows the means and standard deviations for gender difference. Both females (M=3.93) and males (M=3.88) felt that the frameworks were useful.

Table 4.26: Means and SD for Usefulness of Frameworks by Gender

Gender	N	Means	SD
Female	359	3.93	.802
Male	60	3.88	.691
Total	419	3.92	.786

Null Hypothesis #2.2: There is no difference in the perceptions of the usefulness of the frameworks based on grade levels taught.

Table 4.27 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,415)}$=8.462; p=.000). There was a significant difference in respondents' perceptions of the usefulness of the frameworks in regard to grade levels taught.

Table 4.27: ANOVA Table for Usefulness of Frameworks by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	14.896	3	4.965	8.462	.000
Within Groups	243.505	415	.587		
Total	258.401	418			

According to Table 4.28**,** a post-hoc analysis using Scheffe Test revealed that there was a significance difference between primary (M=4.13) and elementary (M=4.06)

teachers compared to middle (M=3.86) and high (M=3.64) school teachers. This indicates that primary and elementary teachers felt that the usefulness of the frameworks were good compared to middle (M=3.86), and high (M=3.64) school teachers. Middle and high school teachers felt that the frameworks were somewhat useful in their classroom.

Table 4.28: Post-hoc Analysis for Usefulness of Frameworks by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	94	4.13	.751	-			
Elementary School	117	4.06	.698	NS	-		
Middle School	106	3.86	.774	NS	NS	-	
High School	102	3.64	.842	*	*	NS	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Null Hypothesis #2.3: There is no difference in the perceptions of the usefulness of the tasks based on gender.

Table 4.29 shows the ANOVA results for this null hypothesis. The null hypothesis was retained ($F_{(1,417)}$=.112; p=.672). There was not a gender difference in respondents' perceptions of the usefulness of the tasks.

Table 4.29: ANOVA Table for Usefulness of Tasks by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	.112	1	.112	.180	.672
Within Groups	259.349	417	.622		
Total	259.461	418			

Table 4.30 shows the means and standard deviations for gender difference. Females (M=3.78) and males (M=3.73) felt about the same related to the usefulness of the tasks. Both females and male felt that the tasks were somewhat useful to them.

Table 4.30: Means and SD for Usefulness of Tasks by Gender

Gender	N	Means	SD
Female	359	3.78	.797
Male	60	3.73	.733
Total	419	3.77	.788

Null Hypothesis #2.4: There is no difference in the perceptions of the usefulness of the tasks based on grade levels taught.

Table 4.31 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,415)}$=8.87; p=.000). There was a significant difference in grade levels taught and the perceptions of the usefulness of the tasks.

Table 4.31: ANOVA Table for Usefulness of Tasks by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	15.642	3	5.214	8.874	.000
Within Groups	243.819	415	.514		
Total	259.461	418			

According to Table 4.32, a post-hoc analysis using Scheffe Test revealed that there was a significance difference between primary teachers (M=4.05) and elementary (M=3.86), middle (M=3.68) and high (M=3.52) school teachers. The elementary, middle and high school teachers felt that the tasks were somewhat useful to them. The primary teachers felt that the tasks were useful learning objects found on GSO. This indicates that primary teachers felt more eager about the usefulness of tasks than elementary, middle, and high school teachers.

Table 4.32: Post-hoc Analysis for Usefulness of Tasks by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	94	4.05	.739	-			
Elementary School	117	3.85	.647	NS	-		
Middle School	106	3.68	.775	*	NS	-	
High School	102	3.52	.898	*	*	NS	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Null Hypothesis #2.5: There is no difference in the perceptions of the usefulness of the standards based on gender.

Table 4.33 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(1,416)}=8.51$; $p=.004$). There was a significant gender difference in participants' perceptions of the usefulness of the standards.

Table 4.33: ANOVA Table for Usefulness of Standards by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	4.819	1	4.819	8.510	.004
Within Groups	235.576	416	.566		
Total	240.395	417			

Table 4.34 shows the means and standard deviations for gender difference. Females (M=4.12) showed a significant difference than males (M=3.82) on how they regard the usefulness of the standards. The teachers as a whole felt that standards were useful (M=4.08). After analysis of the results between male and females, the females felt that the standards were more useful than the males. The males felt the standards were somewhat useful to them.

Table 4.34: Means and SD for Usefulness of Standards by Gender

Gender	N	Means	SD
Female	358	4.12	.746
Male	60	3.82	.792
Total	418	4.08	.759

Null Hypothesis #2.6: There is no difference in the perceptions of the usefulness of the standards based on grade levels taught.

Table 4.35 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,414)}$=16.87; p=.000). There was a significant difference in respondents' perceptions of the usefulness of the standards regarding grade levels taught.

Table 4.35: ANOVA Table for Usefulness of Standards by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	26.196	3	8.732	16.877	.000
Within Groups	214.198	414	.517		
Total	240.395	417			

According to Table 4.36, a post-hoc analysis using Scheffe Test revealed that there was a significance difference between high school teachers (M=3.69) and middle (M=4.01), elementary (M=4.26), and primary (M=4.35) school teachers. This indicates that primary teachers felt strongly about the usefulness of standards than elementary, middle, and high school teachers. High school teachers rated the usefulness of standards as somewhat useful, while the rest of the grade levels taught rated it as useful.

Table 4.36: Post-hoc Analysis for Usefulness of Standards by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	94	4.35	.617	-			
Elementary School	117	4.26	.659	NS	-		
Middle School	106	4.01	.724	*	NS	-	
High School	101	3.69	.857	*	*	*	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Null Hypothesis #2.7: There is no difference in the perceptions of the usefulness of the videos based on gender.

Table 4.37 shows the ANOVA results for this null hypothesis. The null hypothesis was retained ($F_{(1,408)}$=.194; p=.660). There was not a gender difference in respondents' perceptions of the usefulness of the videos.

Table 4.37: ANOVA Table for Usefulness of Videos by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	.130	1	.130	.194	.660
Within Groups	275.030	408	.674		
Total	275.161	409			

Table 4.38 shows the means and standard deviations for gender difference. Females (M=3.58) and males (M=3.63) felt the same about the usefulness of the videos located on the website.

Table 4.38: Means and SD for Usefulness of Videos by Gender

Gender	N	Means	SD
Female	350	3.58	.831
Male	60	3.63	.758
Total	410	3.59	.820

Null Hypothesis #2.8: There is no difference in the perceptions of the usefulness of the videos based on grade levels taught.

Table 4.39 shows the ANOVA results for this null hypothesis. The null hypothesis was retained ($F_{(1,406)}=2.61$; $p=.051$). There was not a difference in respondents' perceptions of the usefulness of the videos regarding grade levels taught.

Table 4.39: ANOVA Table for Usefulness of Videos by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	5.209	3	1.736	2.611	.051
Within Groups	269.952	406	.665		
Total	275.61	409			

Table 4.40 shows the means and standard deviations for grade levels taught. Primary (M=3.77), elementary (M=3.56), middle school (M=3.59), as well as high school (M=3.45) teachers felt about the same about the usefulness of the videos. In all grade levels taught the teachers felt that the videos were somewhat useful to them as learning objects found on the educational portal.

The primary (M=3.77) teachers felt that the videos were more useful than the high (M=3.45) school teachers. Both the elementary (M=3.56) teachers and middle (M=3.59) school teachers felt similarly about this issue. The data showed that this was the second time results indicated that middle (M=3.59) school teachers found that a learning object was more important than did elementary (M=3.56) teachers. Since there was not a significant difference in the data a post-hoc Sheffe test was not made.

Table 4.40: Means and SD for Usefulness of Videos by Grade Level Taught

Grade Level	N	Means	SD
Primary School	93	3.77	.782
Elementary School	114	3.56	.799
Middle School	103	3.59	.834
High School	100	3.45	.845
Total	410	3.59	.820

Primary Research Question #3: How do teachers perceive the relevance of the learning objects on the GSO website?

Descriptive statistics were used to answer this second research question. Table 4.41 presents the means and standard deviations for the relevance of learning objects located on GeorgiaStandards.Org website. The usefulness of frameworks, tasks, standards, and videos was based on the following scale: 5=very relevant, 4= relevant, 3=somewhat relevant, 2=of little relevance and 1= not relevant at all.

The participants rated the relevance of learning objects involving frameworks (M=4.05) and standards (M=4.10) higher than the relevance of tasks (M=3.92). The relevance of videos (M=3.69) was rated the lowest by the participants. This result indicated that the frameworks and standards were considered to be relevant to the teachers. The tasks and the videos were rated as somewhat relevant by the teachers. There was a discrepancy in the number of participants who answered the question focusing on the relevance of the learning objects. The question which referred to the relevance of videos emerged as the least answered question on the survey. The videos were ranked as the lowest quality learning object based on the participants survey returns.

Table 4.41: Means and Standard Deviations for Relevance of Learning Objects

Learning Objects	N	Means	SD
Relevance of Frameworks	416	4.05	.729
Relevance of Tasks	416	3.92	.698
Relevance of Standards	416	4.10	.690
Relevance of Videos	412	3.69	.768

Eight hypotheses were tested for this primary question. One-way ANOVA was used to test all the null hypotheses for research question three. The Scheffe post-hoc test was used to determine where differences appeared among the grade levels.

Null Hypothesis #3.1: There is no difference in the perceptions of the relevance of the frameworks based on gender.

Table 4.42 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(1,414)}=7.46$; $p=.007$). There was a significant difference in respondents' perceptions of the relevance of the frameworks when looking at the resutls based on gender.

Table 4.42: ANOVA Table for Relevance of Frameworks by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	3.912	1	3.912	7.466	.007
Within Groups	216.924	414	.524		
Total	220.837	415			

Table 4.43 shows the means and standard deviations for gender difference. The data indicates that females (M=4.09) felt the frameworks were more relevant than males (M=3.82).

Table 4.43: Means and SD for Relevance of Frameworks by Gender

Gender	N	Means	SD
Female	356	4.09	.720
Male	60	3.82	.748
Total	416	4.05	.720

Null Hypothesis #3.2: There is no difference in the perceptions of the relevance of the frameworks based on grade levels taught.

Table 4.44 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,412)}=17.27$; $p=.000$). There was a significant difference in respondents' perceptions of the relevance of the frameworks regarding grade levels taught.

Table 4.44: ANOVA Table for Relevance of Frameworks by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	24.671	3	8.224	17.272	.000
Within Groups	196.165	412	.476		
Total	220.837	415			

According to Table 4.45**,** a post-hoc analysis using Scheffe Test revealed a significance difference between primary (M=4.37) and elementary (M=4.15), and middle (M=4.04) teachers compared to high (M=3.67) school teachers. This points out that primary, elementary and middle school teachers felt the frameworks were more relevant for use during their day than did high school teachers.

Table 4.45: Post-hoc Analysis for Relevance of Frameworks by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	93	4.37	.586	-			
Elementary School	117	4.15	.620	NS	-		
Middle School	105	4.04	.678	*	NS	-	
High School	101	3.67	.850	*	*	*	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Null Hypothesis #3.3: There is no difference in the perceptions of the relevance of the tasks based on gender.

Table 4.46 shows the ANOVA results for this null hypothesis. The null hypothesis was retained ($F_{(1,414)}$=.660; p=.417). There was not a gender difference in respondents' perceptions of the relevance of the tasks.

Table 4.46: ANOVA Table for Relevance of Tasks by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	.322	1	.322	.660	.417
Within Groups	201.734	414	.487		
Total	202.055	415			

Table 4.47 shows the means and standard deviations for gender difference. Females (M=3.93) and males (M=3.85) felt about the same related to the relevance of the tasks.

Table 4.47: Means and SD for Relevance of Tasks by Gender

Gender	N	Means	SD
Female	357	3.93	.687
Male	59	3.85	.761
Total	416	3.92	.698

Null Hypothesis #3.4: There is no difference in the perceptions of the relevance of the tasks based on grade levels taught.

Table 4.48 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,412)}=11.29$; $p=.000$). There was a significant difference in respondents' perceptions of the relevance of the tasks regarding grade levels taught.

Table 4.48: ANOVA Table for Relevance of Tasks by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	15.349	3	5.116	11.290	.000
Within Groups	186.707	412	.453		
Total	202.055	415			

According to Table 4.49, a post-hoc analysis using Scheffe Test revealed that there was a significance difference between primary teachers (M=4.16) and elementary (M=4.04) teachers compared to middle (M=3.80) and high (M=3.66) school teachers. Both primary and elementary teachers felt the tasks were relevant to the grade levels taught. The middle and high school teachers felt the tasks were somewhat relevant. This denoted that primary and elementary teachers felt the tasks were more relevant than the middle and high school teachers.

Table 4.49: Post-hoc Analysis for Relevance of Tasks by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	94	4.16	.555	-			
Elementary School	117	4.04	.578	NS	-		
Middle School	104	3.80	.729	*	NS	-	
High School	101	3.66	.803	*	*	NS	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Null Hypothesis #3.5: There is no difference in the perceptions of the relevance of the standards based on gender.

Table 4.50 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(1,414)}$=4.16; p=.042). There was significant difference in participants' perceptions of the relevant use of the standards based on gender.

Table 4.50: ANOVA Table for Relevance of Standards by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	1.970	1	1.970	4.166	.042
Within Groups	195.790	414	.473		
Total	197.760	415			

Table 4.51 shows the means and standard deviations for gender difference. Females (M=4.13) felt that the standards were more relevant. Males felt that the standards were somewhat relevant (M=3.93). Females felt that standards were more appriopriate and relevant to them, where as the males felt that they were somewhat relevant.

Table 4.51: Means and SD for Relevance of Standards by Gender

Gender	N	Means	SD
Female	356	4.13	.680
Male	60	3.93	.733
Total	416	4.10	.690

Null Hypothesis #3.6: There is no difference in the perceptions of the relevance of the standards based on grade levels taught.

Table 4.52 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,412)}$=15.44; p=.000). There was a significant difference in respondents' perceptions of the relevance of the standards regarding grade levels taught.

Table 4.52: ANOVA Table for Relevance of Standards by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	19.994	3	6.665	15.446	.000
Within Groups	177.766	412	.431		
Total	197.760	415			

According to Table 4.53, a post-hoc analysis using Scheffe Test revealed that there was a significance difference between high school teachers (M=3.78) and both elementary (M=4.26) and primary (M=4.35) school teachers. There was not a significant difference between primary (M=4.35) teachers middle (M=4.01) school teachers. There was not a significant difference between high (M=3.78) and middle (M=4.01) school teachers The primary, elementary, and middle school teachers rated standards as being relevant to their grade levels while high school teachers rated the standards as somewhat relevant.

Table 4.53: Post-hoc Analysis for Relevance of Standards by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	94	4.35	.581	-			
Elementary School	114	4.26	.581	NS	-		
Middle School	106	4.01	.609	*	*	-	
High School	102	3.78	.828	*	*	NS	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Null Hypothesis #3.7: There is no difference in the perceptions of the relevance of the videos based on gender.

Table 4.54 shows the ANOVA results for this null hypothesis. The null hypothesis was retained ($F_{(1,410)}$=.230; p=.631). There was not a difference based on

gender when analyzing the perceptions of the teachers in regarding to the relevance of the videos.

Table 4.54: ANOVA Table for Relevance of Videos by Gender

Gender	Sum of Squares	df	Means Square	F	Sig.
Between Groups	.136	1	.136	.230	.631
Within Groups	242.097	410	.590		
Total	242.233	411			

Table 4.55 shows the means and standard deviations for gender difference. Females (M=3.68) and males (M=3.73) felt equally that the videos are somewhat relevant. Males felt that the videos were more revelant than the females. This was the first time males indicated a preference for a specific aspect of the GSO website over females throughout the study.

Table 4.55: Means and SD for Relevance of Videos by Gender

Gender	N	Means	SD
Female	352	3.68	.778
Male	60	3.73	.710
Total	412	3.69	.768

Null Hypothesis #3.8: There is no difference in the perceptions of the relevance of the videos based on grade levels taught.

Table 4.56 shows the ANOVA results for this null hypothesis. The null hypothesis was rejected ($F_{(3,408)}$=4.43; p=.004). There was a significant difference in respondents' perceptions of the relevance of the videos based on grade levels taught.

Table 4.56: ANOVA Table for Relevance of Videos by Grade Level Taught

Grade Level	Sum of Squares	df	Means Square	F	Sig.
Between Groups	7.648	3	2.549	4.434	.004
Within Groups	234.585	408	.575		
Total	242.233	411			

According to Table 4.57, a post-hoc analysis using Scheffe Test revealed that there was a significance difference between high school teachers and primary (M=3.87) school teachers in the way they judged the relevance of the videos located on the educational portal. In all grade levels taught, videos were considered somewhat relevant to the teachers. The data gathered from the high school teachers showed the relevance of videos was not important.

Table 4.57: Post-hoc Analysis for Relevance of Standards by Grade Level Taught

Grade Level	N	Means	SD	PS	ES	MS	HS
Primary School	94	3.87	.722	-			
Elementary School	115	3.77	.776	NS	-		
Middle School	103	3.61	.744	NS	NS	-	
High School	100	3.51	.785	*	NS	NS	-

Note. PS=Primary; ES=Elementary; MS=Middle School; HS=High School
* denotes significant difference (<.05).
NS denotes not significant.

Primary Research Question #4

To what extent do teachers use the learning objects on the GSO website during lesson planning?

Descriptive statistics were used to describe the way teachers used the learning objects or integrate the use of technology during their day by means of lesson planning.

Table 4.58 shows the results for the overall extent to which teachers use the learning objects on the website during lesson planning. This data was reported through means and standard deviation of the variables. As data were analyzed, it became apparent that the most popular way to use the website for lesson planning was to access and use the state created units, frameworks, and tasks (M=3.19) that were available. Teachers clearly indicated that accessing new materials, review GPS updates and researching best practices (M=3.15) were the most useful way of manipulating learning objects from the GSO website. While using the website teachers also accessed additional technology enhanced resources/tools to support a standards-based curriculum (M=3.03) and accessed strategies that aided them on locating materials that helped them to differentiated instruction (M=3.02) in their classrooms. The use of the website to assess finding 21st century skills to support the Georgia Performance Standards (M=2.98) was used least by the teachers in the study. In chapter five, the researcher investigated the means of the extent of use and will relate that to the Apple Classroom of Tomorrow (ACOT) scale that describes the teachers' levels of technology integration.

Table 4.58: Usage of Learning Objects During Lesson Planning

Usage	N	Means	SD
Use of state created units, frameworks, and tasks	419	3.19	1.016
Access to new materials, GPS updates, and best practices	419	3.15	.975
Access to additional technology enhanced resources and tools to support a standards-based curriculum	419	3.03	.974
Access to strategies focusing on differentiated Instruction	419	3.02	.973
Access to embed 21st Century skills into GPS Curriculum	418	2.98	.954

Primary Research Question #5

To what extent do teachers use the learning objects on the GSO website during assessment planning?

Descriptive statistics (means and standard deviation) were used to describe the way teachers use the learning objects or integrate the use of technology during their day via assessment planning. Table 4.59 shows the results for the overal extent to which teachers used the learning objects on the website during assessment planning. The most popular way to use the website was to access new materials, review GPS updates and research best practices (M=3.11). Teachers also felt strongly about using the website to access and use the state created units, frameworks, and tasks (M=3.06) that were available. Accessing strategies focusing on differentiated instruction (M=3.02) was also well supported by teachers. Finding and using additional technology enhanced resources/tools to support a standards-based curriculum (M=2.95) and accessing 21st Century skills ito Georgia Performance Standards Curriculum (M=2.95) were both equally as well as least supported by teachers during assessment planning.

Table 4.59: Usage of Learning Objects During Assessment Planning

Usage	N	Means	SD
Access to new materials, GPS updates, and best practices	417	3.11	.971
Use of state created units, frameworks, and tasks	419	3.06	.969
Access to strategies focusing on differentiated instruction	419	3.02	.965
Access to additional technology enhanced resources/ tools to support a standards-based curriculum	418	2.95	.975
Access to embed 21st Century skills into GPS Curriculum	416	2.95	.978

Primary Research Question #6

How do the teachers use the learning objects on the GSO website to help change their classroom pedagogy?

Table 4.60 represents the change in pedagogy with the use of digital learning objects. The biggest change in pedagogy was represented by the teachers aligning classroom curriculum to the GPS (63.5%). Using the frameworks and tasks from the GaDOE

available on the website (46.1%) was the second biggest change. Creating lesson plans (38.7%), increased teachers' personal computer usage (37.7%), and matching learners' needs (36.5%) were similar in pedagogical changes since using the website. Increased students' use of technology (31.1%) and sharing of lesson plans and tasks (29.1%) were indicated as low changes in the teacher pedagogy. Some teachers indicated no change in their pedagogy. This no change was reflected by teachers who already use the website (9.5%) and those teachers who do not use the website at all (8%).

Table 4.60: Teacher Pedagogical Change

Pedagogical Changes	Frequency	Percent
Align Classroom Curriculum (GPS)	266	63.5
Use Frameworks and Tasks (Created by GaDOE)	193	46.1
Create Lesson Plans	162	38.7
Increase Personal Use of Technology	158	37.7
Matching Learner's Needs	132	35.5
Increase Student Use of Technology	131	31.3
Share Lesson Plans and Tasks	122	29.1
Currently incorporate all	40	9.5
Do not use the website at all	37	8.0

Summary

This research study focused on teachers' perceptions of the quality, usefulness, and relevance of learning objects on a state developed educational portal, as well as the extent to which they integrated the technology during lesson planning and assessment planning. The 20-question Likert scale was available to 900 teachers located in Walton County Public Schools and resulted in a return rate of 419 (46.5%) surveys. The research provided insight into the use of the website by teachers in Walton County, the research also provided helpful demographics information.

More females (85%) than males (14%) completed in the survey. The trend showed a significant difference in quality, usefulness and relevance of standards when looking at gender. There was also a significant difference in the quality and relevance of frameworks. There was no significant difference between the quality, usefulness, and relevance of tasks and videos, as well as, usefulness of frameworks. The largest percentage of participants' ages was over 43+ years (39%), but the largest years of teaching was between six and ten years (24.8%). Grade level teaching assignments were equally distributed over the survey; primary (22%), elementary (27%), middle (25%), and high (24%) school teachers.

The descriptive statistics showed that teachers integrated technology by using the website to access the state created units, frameworks, tasks, and best practices (M=3.19) while working on lesson plans. When teachers integrated technology during assessment planning their focus was on accessing new material to support the GPS curriculum in the classroom (M=3.11). The data revealed means score related to the questions focusing on the usage of the learning objects were in a range between M=2.95 to M=3.15).

Teachers' pedagogical changes in using the website ranged from aligning classroom curriculum to standards (63.5%) and use of the frameworks and tasks (46.1%) to not using the website at all (8%) or already incorporating these strategies (9%). The rest of the strategies were similarly chosen as changes made by the teachers.

The research showed reliability and validity of the survey. The study and results of the data provided a wealth of analyses of the learning objects (frameworks, tasks, standards, and videos) quality, usefulness and relevance. It has also given the researcher a

valuable look at the usage of the learning objects and information about whether the learning objects played a role in the change of the teachers' classroom pedagogy.

CHAPTER FIVE

FINDINGS, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

Chapter five presents a summary of the main points in this research. The purpose of this study was to investigate the teachers' perceptions of a state developed educational portal. The research evaluated how teachers perceived the quality, usefulness, and relevance of various learning objects located on the GeorgiaStandards.Org website. Learning objects discussed were the frameworks, tasks, videos, and standards developed by taskforce teams in the major curriculum areas of English/Language Arts, Math, Science, and Social Studies at the Georgia Department of Education. This research contributed to the body of literature dealing with learning objects and learning object repositories. Current research involves how learning objects were created and evaluated. This research added to the existing research by looking at the teachers' perceptions of the use of learning objects. This chapter also includes the following sections: literature overview, research methodology, findings, implications and recommendations for Walton County Public Schools and implications and recommendations for distance learning (learning objects and learning object repositories) research.

Literature Overview

Technology plays a significant role in our daily lives from home to school to the work environment. People use technology in the home for many different reasons: entertainment, convenience, necessity. In schools, students utilize technology tools to complete assignments, take virtual field trips, solve mathematical equations, and more. Teachers also utilize technology to instruct, review, and enrich student learning through

tools such as interactive whiteboards, LCD projectors, hand-held clickers, and computer centers. In the workplace, there was a need for the use of technology to increase job productivity, collaboration, and communication. This demand has created a trend toward producing more technology-trained employees (Bureau of Labor and Statistics, 2008-09). Schools and educators have become responsible for educating and preparing students to meet and face future challenges both with and without technology. However, research confirms that teachers were not prepared to provide sufficient technology training for students to excel in a technology-based economy (Leshner, 2009).

Searching the Internet for quality content can be a challenge for teachers. There are many resources one click away, whether teachers are looking for lesson plans, worksheets, videos, or multimedia activities. Teachers can get overwhelmed in endless searches for relevant and high-caliber online resources (Manzo, 2009). “But there are places out there you can go to that can clearly save you a huge amount of time,” says William R. Thomas (2009), the director of educational technology for the Southern Regional Education Board (p.15). The best resources are repositories that categorize learning objects by different subject matter, and include various formats of learning objects, printed material, and online support. But, do these repositories have learning objects that have quality, relevance, and usefulness the teachers’ need to support their classroom curriculum? That was the main research question that was investigated in this study.

The primary focus of this research addressed learning objects and repositories. According to Marzano & DuFour (2009), the need for informal support systems, partnerships, teams, and collaborative structures might be the most effective elements

involved in effecting effect broad-based change. This was an important part of staff development and effective use of the website was dependent on this factor, but it was not covered in this research project. The survey concentrated on the teachers' perceptions after the leadership teams conducted the training at their own schools and with their own staffs.

Teachers encounter barriers that inhibit their desire to use technology. These barriers include lack of technology support, vision, time and access. This research was designed to aids in finding if the educational portal designed by the state of Georgia assists the teachers in minimizing the barriers and, in fact, aid in finding out the level of technology integration of the teacher.

Methodology

The researcher examined the helpfulness, usefulness, and relevance of learning objects as well as the teachers' level of technology integration and change in teachers' classroom pedagogy caused by or engendered by the GSO website. The researcher conducted a descriptive study by using an online survey of all teachers in a given school school system. Training of the teachers was conducted by the specific county leadership team. Teachers were not influenced by the GSO team nor were the teachers penalized for not participating in the survey

The quantitative instrument was a 20-question Likert-scale survey, developed by the researcher and administrated to the teachers in Walton County Public Schools. The scale was created and distributed electronically through a computer-based survey software tool. The survey instrument was used to collect data that answered the main research questions and gathered demographic information from the entire population of

teachers. The instrumentation used in this research went through a content validation process. This content validation was conducted by five educators, who did not participate in the research. These individuals were experts in the field of instructional technology, academic instruction, web design, and usefulness of learning objects. The experts came from various levels within the education system but not from the county where the research was conducted. Subject matter experts judged the survey for content, structure and format, readability, and clarity. The instrument as a whole had a Cronbach alpha reliability coefficient of .946.

The researcher emailed the survey link to the Assistant Superintendent in Walton County Public School System. He distributed the Internet address or URL of the survey to potential participants. The teachers were able to access the survey at their convenience during a two week period. The survey was able to be taken anywhere teachers had access to the Internet. Their responses were returned via the online survey tool. Answering the survey questions online allowed teachers to remain anonymous as results were returned.

Findings and Discussion

With data collected and organized the conclusions began to come together. The responses on the surveys provided valuable data for the researcher and administration in Walton County Public School. This pertinent information was only retrieved from the teachers and instructional/graduation coaches who used the GeorgiaStandards.Org website.

Descriptive statistics were used to answer the first three research question. The descriptive statistics focused on the means (the average rating) of the value of the learning objects when concentrating on gender and grade level taught. The learning

objects on the website were described as frameworks, tasks, standards, and videos. Overall, the videos were ranked as the lowest quality learning object based on the participants survey returns in all three questions. It might be possible that videos were ranked lowest because they were not easily marked or labeled on the website clear enough for the teachers to access them. Could the administrator, when training teachers on the site, have forgotten to show the videos to the teachers or give them time to access them? But, in all cases they were still rated in the "somewhat good" ranking, which supports the GaDOE and Georgia legislative council decision to allocate money to be spent on creating best practice videos. The videos were designed to portray best practices in how to teach lessons in a standards-based classroom.

Throughout the study, results showed that primary teachers in each case felt the strongest about the learning objects, followed by the elementary, middle, and high school teachers, in that order. High school teachers consistently rated the learning objects lowest. When analyzing data by gender, females consistently rated the learning objects higher than males. Could this be because most of the males from the study were high school teachers and the high school teachers also rated the learning objects low?
Primary Research Question #1: How do teachers perceive the quality of the learning objects on the GeorgiaStandards.Org (GSO) website?

Overall, the participants rated the quality of learning objects involving frameworks (M=4.00) and standards (M=4.06) higher than the quality of tasks (M=3.85) and the quality of videos (M=3.69). The quality of frameworks, tasks, standards, and videos was based on the following rating scale: 5=very good, 4= good, 3=somewhat good, 2=of little good and 1= not good at all. Age, years taught, academic area taught

were also considered, but data collected and analyzed indicated that there was no significant difference between the teachers with regard to any of these variables.

Gender

There was a gender difference in the respondents' perception of the quality of the standards and frameworks. These findings indicated female teachers felt stronger about the frameworks and standards than male teachers. Female teachers also rated the quality of the learning objects (frameworks (M=4.04) and standards (M=4.01)) as good compared to the male teachers who rated the learning objects (frameworks (M=3.78) and standards (M=3.80) at the somewhat good level. The Georgia Department of Education seems to feel comfortable with these results. They can continue to create the videos and strive for improvement from the teachers.

When analyzing the results for tasks and videos, the evidence indicated that there was no difference based on the gender of the participants. These findings indicated that female (M=3.87) and male (M=3.68) teachers believed about the same when rating the quality of tasks. Both males (M=3.69) and females (M=3.69) rated the quality of videos exactly the same on the website. Could it be that the teachers' did not have the time to view the videos before the lesson taught or during a planning time? Did they not have access to them (bandwidth problems or firewall issues)?

Grade level taught

Overall, there was a significant difference based on the grade level taught (primary, elementary, middle or high school) in the perceptions of the respondents with regard to the learning objects' quality. Upon closer examination, teachers who taught primary school had a significant difference in the perception of the quality than high

school teachers. These finding indicate that primary teachers would be more likely to use the learning objects in their daily planning or for staff development. High school teachers in each case rated the quality of the learning objects as somewhat good, which indicated they did not feel confident in the quality of these items. The results showed that primary teachers were more likely to rely on the GSO website to access and use quality frameworks, tasks, standards, and videos to support their teaching of the Georgia Performance Standards (GPS). If they relied on the quality, then the teachers would feel comfortable using the learning objects with their students or in their planning for quality standards-based classroom lessons. This allowed the teachers to have confidence that the learning objects also met the rigor and relevance called for by the Georgia Department of Education and their local school systems. The teachers could rely on the fact the GSO learning objects would successfully aid in the students meeting and exceeding the standards required by the State of Georgia on end of the year testing.

Primary Research Question #2: How do teachers perceive the usefulness of the learning objects on the GeorgiaStandards.Org (GSO) website?

The participants rated the usefulness of learning objects involving frameworks (M=3.92) and standards (M=4.08) higher than the usefulness of tasks (M=3.77) and videos (M=3.59). The usefulness of frameworks, tasks, standards, and videos was based on the following scale: 5=very useful, 4= useful, 3=somewhat useful, 2=of little use and 1= not useful at all. This shows that the standards were rated as useful and the rest of the learning objects (frameworks, tasks, and videos) were noted as somewhat useful.

The survey results indicated there was no significant difference between the usefulness of the learning objects. Age, years taught, academic area were also analyzed

but indicated no significant difference between the teachers. The researcher then considered differences between gender and grade level taught.

Gender

There was a significant gender difference in one of the learning objects, standards. These findings indicated that female (M=4.12) teachers felt stronger about the usefulness of the standards than male (M=3.82) teachers. Female teachers rated the usefulness of the learning object (standards) as useful compared to the male teachers who rated it at the somewhat useful level. The Georgia Performance Standards were developed by teachers across the state in cooperation with the Georgia Department of Education. The GaDOE should consider the balance of males and females on the committee when developing or revising the standards. Perhaps gender played an important role in how the standards were written for the teachers' use.

As the researcher, analyzed the data from the other learning objects (frameworks, tasks, and videos) no gender difference based on usefulness were noted. This means that female and male teachers judged the usefulness of frameworks, tasks and videos the same on the website. The three learning objects were rated by the female teachers between M=3.93 and M=3.58. They were rated by the male teachers between M=3.88 and M=3.63. The learning objects had a purpose or were useful to the teachers. But how were they useful? What steps would be needed for the teachers to feel that they are very useful in planning and functionality during the school day? The research shows that the frameworks and tasks have purpose because they match the GPS so succinctly because they were created by the Georgia Department of Education.

Grade level taught

In closer investigation of the data, the analyses showed that there was no difference in the perceptions of the videos usefulness by the teachers. This was the only null hypothesis that was retained throughout the study based on grade level taught. Videos were still rated as somewhat useful (M=3.45 to M=3.77). The primary teachers (M=3.77) felt more strongly about the videos than the middle school teachers, elementary and lastly the high school teachers (M=3.45).

When examining the usefulness of frameworks, tasks, and standards as evaluated by the teachers there was a difference in perceptions of the value of standards based on grade level taught. Primary teachers had a significant difference in their perception of the usefulness or purpose of frameworks, tasks, and standards than high school teachers. The usefulness of the frameworks and tasks were sustained by their rating on the survey. This showed that the teachers had a rationale for only using the textbooks as a supplemental tool in their class. The data supported the fact that the frameworks and tasks were designed to support the GaDOE effective approach to creating teaching and learning in a standards-based classroom.

Primary Research Question #3: How do teachers perceive the relevance of the learning objects on the GeorgiaStandards.Org (GSO) website?

The participants rated the relevance of learning objects involving frameworks (M=4.05) and standards (M=4.10) higher than the relevance of tasks (M=3.92). Frameworks and standards were considered to be relevant by all the teachers, while the tasks and the videos were somewhat relevant to them. The relevance of the frameworks, tasks, standards, and videos was based on the following scale: 5=very relevant, 4=

relevant, 3=somewhat relevant, 2=of little relevance and 1= not relevant at all. How does the relevance of the learning objects impact student achievement? Do gender and grade level taught by the teacher reveal a significant difference in their perception of the relevance of the learning objects?

Gender

There was no significant gender difference in the relevance perceived by the teachers when analyzing the tasks and videos. There was a gender difference in respondents' perception of the frameworks and standards. These findings indicated that female teachers felt stronger about the frameworks and standards than male teachers. Female teachers rated the relevance of the learning objects (frameworks and standards) as important as compared to the male teachers who rated them as somewhat important.

The relevance of the learning objects was rated as applicable and thus resulted in the teachers feeling that these learning objects had an impact on the students' achievement. The tasks meet the rigor and relevance the GaDOE wants each teacher to teach and the students to internalize. Since the standards are part of the benchmarking process the teachers support the relevance of the standards because they understand the importance in the scope and sequence from each academic area.

Grade level taught

There was a difference in the perceptions of the relevance of the frameworks, standards, tasks, and videos based on grade level taught. Teachers who taught primary school rated the frameworks, standards, tasks, and videos as being more relevant than when compared to high school teachers. These findings indicated that teachers felt the learning objects were relevant because they had the potential to impact student

achievement. Primary teachers as a group might be more receptive to flexibility and change than high school teachers. High school teachers focused more on one subject throughout the day and year. Could high school teachers have felt that they were the "expert" in their field and know what is best for their students?

If the teachers used the standards, frameworks, and tasks consistently throughout the year their students would be able to have the necessary skills to meet the benchmarks set forth by the Georgia Department of Education. The learning objects are also revised and updated to support the relevance of the GPS. As the teachers use these learning objects, they automatically introduced those changes to the students.

The next two research questions pertained to whether or not the learning objects met the needs of the teachers as they created lesson plans and assessments and how these items depicited the level of technology integration use by the teacher?

Research question #4: To what extent do teachers used the learning objects on the GSO website during lesson planning?

Respondents were asked to indicate their level of use (5=Very high level of usage, 4=high level of usage, 3=moderate level of usage, 2=low level of usage and 1=no level of usage) of different aspects of the learning objects on the GSO website. These aspects were use of the state created units, frameworks, and tasks; access to the new materials, GPS updates and best practices; access to additional technology enhanced resources and tools to support a standards-based curriculum; access to strategies focusing on differentiated instruction; and access to embed 21st century skills to GPS curriculum. The researcher looked at the means and standard deviations of the above aspects. The researcher wanted to gather that information to compare it to the Apple Classroom of

Tomorrow (ACOT) that described the teachers' level of technology integration. The researcher wanted to know what level of technology integration the teachers had because they were using the learning objects on the website. It described the stages of teacher integration as: 5= Entry, 4= Adoption, 3= Adaption, 2= Appropriation and 1= Invention.

In looking at the usage of the learning objects, the data indicated that teachers rated themselves in the adaption (level three) stage. The teachers used the learning objects to a good extent. They used the GSO website the most to access state created units, frameworks, and tasks (M=3.19) and to access new materials, GPS updates, and best practices (M=3.15). The next two strategies were equally used by the teacher, these addressed using the website to access additional technology that enhanced resources/tools to support a standards-based curriculum (M=3.03), and finding strategies focusing on differentiated instruction (M=3.02). Teachers are moving from basic use of technology to discovery of its potential for increased productivity. Using the website to access 21st century skills into GPS curriculum was rated 2.98. This rating was equal to the adoption stage of the ACOT which s that the educators have moved from the initial struggles to successful use of technology on a basic level.

Research question #5: To what extent do teachers use the learning objects on the GSO website during assessment planning?

Respondents were asked to indicate their level of use (5= Very high level of usage, 4= high level of usage, 3= moderate level of usage, 2= low level of usage and 1= no level of usage) in regard to different aspects of the learning objects on the GSO website. These aspects were access to the new materials, GPS updates; use of the state created units, frameworks, and tasks, and best practices; access to additional technology

enhanced resources and tools to support a standards-based curriculum; access to strategies focusing on differentiated instruction; and access to embed 21st century skills to GPS curriculum.

The data from the research revealed that the teachers' use of the learning objects for assessment planning was also rated at a level three or adaption stage. The researcher concluded that teachers accessed new materials, GPS updates, and best practices (M=3.11) to a high level. The use of state created units, frameworks, and tasks (M=3.06), and access to strategies focusing on differentiated instruction (M=3.02) was similarly rated and used at a fairly high level. Teachers are moving from basic use of technology to discovery of its potential for increased productivity. When looking at teachers use of accessing the website for additional technology enhanced resources /tools to support a standards-based curriculum and using the website to access 21st century skills into GPS curriculum they both were rated 2.95. This rating was equal to the adoption stage (2) of the ACOT integration scale that means that the educators have moved from the initial struggles to successful use of technology on a basic level.

Technology integration means viewing technology as an instructional tool for delivering subject matter in the curriculum already in place. Educators need to understand technology integration more completely (Woodbridge, 2009, ¶ 3). Georgia Department of Education can use the results from the study to provide teachers with training on ways they might successfully integrate technology into their daily classroom usage. As indicated in the first three research questions, the technology integration training should be designed and focus on grade levels and subject areas in order to provide a wide variety for teacher educators. This study also provided information to support that teachers' need

of technology support to attain the next level of technology integration. The teachers would be able to rely on the support personnel for help in designing the lesson plans and assessments or even to have someone to actually model a lesson or planning.

The last research question investigated was whether or not the learning objects aided in assisting teachers in changing their classroom pedgagogy by using technology in a standard-based classroom.

Research Question #6: How do the teachers use the learning objects on the GSO website to help change their classroom pedagogy?

Descriptive statistics were used to investigate the change in classroom pedagogy by the teachers who participated in the survey. The question was asked to discover what changes had taken place since the training on the use of the learning object repository and the learning objects. There were a total of 419 responses. First there was a small percent of teachers who did not use the website at all (9.5%). Those teachers may not have GPS standards associated to the subject they teach, so the website is may not be as useful to them. Another small group was the teachers who already use the website (8%), and so again there was no change since they already integrated technology in their daily activities.

The biggest change in classroom pedagogy was with the teachers who were now aligning classroom curriculum to standards (63.5%). One of the focuses of GSO was that everything was based on standards and the standards were clearly posted on all learning objects (frameworks, tasks, and videos). As teachers begin to integrate technology they appeared to use the frameworks and tasks (46.1%) on the website as they begin to find the material that supports the Georgia Performance Standards. The following changes

appeared to have similar importance to the teachers: creating lesson plans (38.7%), increased personal use (37.7%), and matching student use (31.3%). Increasing personal use of technology and increasing student use of technology was important for teachers as this change aids them in assisting themselves and their students in becoming global citizens. Sharing lesson plans and tasks (29.1) exhibited the least mentioned classroom change made by the teachers, possibly because teachers did not have a place on the website to document it. This will be discussed in recommendations for future study. Did the teachers' classroom pedagogy change as they went to the next level of technology integration? The data supported the fact that as teachers use the website and learning objects from it, they began to shift to classroom strategies that used the technology as an instructional tool.

Conclusions

This study resulted in some findings that many leadership teams and administrative leaders might consider useful. It also concludes with suggestions for future study. The following conclusions are drawn from this study.

1. Teachers felt that the learning objects (tasks, standards, best practice videos, and resources) on the GeorgiaStandards.Org website were relevant in meeting the needs of their students.
2. Teachers felt that the learning objects (tasks, standards, best practice videos, and resources) on the GeorgiaStandards.Org website had quality in meeting the needs of their students.

3. Teachers felt that the learning objects (tasks, standards, best practice videos, and resources) on the GeorgiaStandards.Org website were useful in meeting the needs of their students.
4. The teachers used the website to align classroom curriculum to GPS standards as an important component of their lesson and assessment planning and that was a new shift for the teachers in WCPS.
5. The teachers' average level of technology integration was at the adaption stage (level 3), which means that the teachers were moving from basic use of technology to discovery of its potential for increase productivity. This seemed to be in line with the means score of their thoughts on the quality, usefulness, and relevance of the learning objects too.
6. The teachers used the website to increase their personal technology use as well as using the resources to create lesson plans from the GSO resources located on the website.

Implication for the Study

One of the goals of the GeorgiaStandards.Org (GSO) website was to be a one stop, web-based curriculum and instructional resource for educators. It is a repository of educational resources connected electronically to the Georgia Department of Education (GaDOE) online Georgia Performance Standards (GPS). GSO provides educators with organized and up-to-date resources that are specific to each GPS content standard. These findings indicate that if the goal was not yet attained, may it be due to the fact that the teachers are not comfortable in using the technology to locate and use the learning objects. Administrators should consider small training sessions that would make the

learning objects more valuable to the teachers' daily use in lesson planning and assessment planning.

The goal of this research was to find the answer to the question. Does the state-controlled learning object repository (LOR) assist the teachers in accessing the essential digital content needed to successfully meet the needs of the students by implementing the use of standard-based instruction in conjunction with integrating technology?

The researcher wanted to find out if the learning objects on the website had quality, were relevant, and were useful to teachers as they meet the needs of the students in the state, after training conducted by the school administrator. The survey offered answers to these questions. Each question had answers that will be considered by the researcher and Walton County Public School administration for their importance.

Recommendations for Walton County Public School

The researcher perceived that this study has only touched the surface of what needs to take place in Walton County Public School in order for the teachers to feel secure about integrating technology in their curriculum through the learning objects on GeorgiaStandards.Org website. Some things to be considered for the future are listed below:

1. Have an instructional technologist or instructional coaches for teachers to meet with for assisting in planning, curriculum development, and/or website updates and/or training.
2. The instructional technologist or instructional coaches should also assist the teacher in a lab with large or small group technology instruction.

3. Offer training workshops (face-to-face or webinar) for new website updates that will be added to the website as delivered to GeorgiaStandards.Org team.
4. Have the teachers develop grade level links from the website for parent communications with the school and grade level.
5. Discuss in grade level meetings the learning objects the teachers need to have taught at their specific grade level so professional learning units (PLU) can be earned throughout the year.

Recommendations for GeorgiaStandards.Org

This research centered on a small population of teachers (900) in a specific county in Georgia, a limitation to the study. To gather a wider perspective on the way teachers perceive the website, a survey or discussion board should made be available to the teachers across the state from the website. GSO should also work with the Standards, Instruction and Assessment (SIA) Division to better inform their trainers of the wealth of resources to assist teachers in meeting the needs of the students. GSO would also create and maintain various free webinars and/or short videos demonstrating how to navigate through the website focusing on academic areas and grade levels. GSO would also take the results from this study and discuss how they relate to the navigation of the website and the information located on each page. GSO could also randomly survey the users of the website to information on the easy of navigation. When data is analyzed there might be a consideration to change the user interface of the website to make it easier to navigate? GSO should also consider and monitor the use of the best practice videos on the website. This also could be completed with a simply survey on the website to find the value and use by the teachers, then consideration of the next step should be considered.

Recommendations for Staff Development Training

This research focused on the use of a stated-controlled educational portal. The learning objects on the website were also developed by the Department of Education, specifically the curriculum or SIA division. The research indicated there were significant differences in the perceptions of teachers when considering the grade levels the participants taught. The study showed that high school teachers and primary teachers perceived the learning objects differently. The researcher believes that this fact should be considered when training is presented both for GeorgiaStandards.Org and the SIA Department of the GaDOE. This research supported the fact that high school training should be different than elementary and middle school training. Staff development training should be developed for teachers based on grade level taught and not based only on the website, academic material, or standards being learning. This includes training not only on the GeorgiaStandards.Org website, but should also be considered by the SIA division at the Georgia Department of Education. The trainers should make the learning objects relevant to the teachers' needs and explain how the learning objects will help the teacher meet the needs of the students and/or make their jobs easier. As the trainers introduce the standards and frameworks to their participants they should also develop tips for navigating to those learning objects. Each curriculum division should carefully view and review the best practice video and consider their value to the stakeholders of the website. Should they be kept or discarded?

Recommendations for Further Study

To gain a wider perspective on the way teachers perceive the website a future research should include a larger sample both from urban and rural areas around the state. Future research should also focus on to determining the reliability and validity of the survey. Other questions that could be considered might include:

How often do teachers visit the website and why?

How often do teachers use the teacher resources (links to other websites) and for what purpose?

Does the website aid teachers' to reach the exemplary level/stage in a teacher evaluation tool and how?

Is there a difference in the perceptions of the learning objects if the training was completed by a GSO staff member and what is the difference?

Do the teachers use the website more if there was an online training tutorial focusing on the grade level, curriculum content, or technology tools?

Do the learning objects on the state-developed website increase student achievement and raise test scores?

Do the learning objects on the state-developed website aid teachers in making their job easier to meet the GPS standards?

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Woodbridge, J. (2004). Technology integration as a transforming teaching strategy. *Tech & Learning*, Retrieved July 8, 2009, from http://www.techlearning.com/article/2022

APPENDICES

Appendix A

ACRONYMS

GPS – Georgia Performance Standards

GSO – GeorgiaStandards.Org

GaDOE- Georgia Department of Education

LO – Learning Objects

LOR – Learning Object Repository

PSC- Professional Standards Commission

Intech – Integrating Technology

SREB – Southern Regional Educational Board

RIG – Repository Implementation in Georgia

LoTi – Levels of Technology Integration

ACOT- Apple Computers of Tomorrow

URL – Uniform Resource Locator

SIA – Standards, Instruction, and Assessment

Appendix B

Apple Computer of Tomorrow

Technology Integration Scale

Entry (1)	Teacher is learning the basics of a technology, e.g., how to set up equipment and operate it.
Adoption (2)	Teacher begins to use the technology in management areas, e.g., computer generated quizzes or worksheets, gradebooks.
Adaptation (3)	Teacher begins to use software to support instruction, e.g., a commercially produced content area program or productivity tools (word processor, data base)
Appropriation (4)	Teacher begins to focus on collaborative, project-based technology use and technology becomes one of several instructional tools.
Invention (5)	Teacher begins to develop different uses for technology, e.g., creates projects that combine two or more technologies.

SEIR*TEC (2009). *Promising practices in technology: Recognizing and supporting teaching with technology.* Publication for the Apple Classrooms of Tomorrow (ACOT).

.

Appendix C
Approval from Georgia Department of Education

GEORGIA DEPARTMENT OF EDUCATION

Policy and External Affairs

Kathy Cox, State Superintendent of Schools

November 11, 2008

MEMORANDUM

TO: Beth K. Caraccio, Ed.S
Ed.D. Candidate, College of Health, Education and Professional Studies
Graduate Studies Division, University of Tennessee at Chattanooga

FROM: David Scudder, Ph.D. David Scudder PhD
Chair, Institutional Review Board

RE: Approval of Human Subjects Application No.
Type of Review: EXEMPT
Approval Period: 11/1/08 – 10/31/09

The Georgia Department of Education Institutional Review Board reviewed and approved your IRB protocol titled "An Evaluation of Teachers' Perceptions of a State Developed Educational Portal." The approval period is listed above.

Approval periods are one (1) year in length. This protocol must be renewed at least 30 days before 10/31/09 if research is to continue beyond the time frame. Renewal proposals may be resubmitted in abbreviated form.

Any adverse reactions or problems resulting from this investigation must be reported immediately to the GaDOE Institutional Review Board. For more information, see the information on IRB procedures available in the Policy Division office.

DS:bc

2053 Twin Towers East • Atlanta, GA 30334 • (404) 657-2965 • Fax (404) 657-6978 • www.gadoe.org

Appendix D

Approval from Walton County Board of Education

WALTON COUNTY BOARD OF EDUCATION

200 Double Springs Church Road, Monroe, Georgia 30656, Telephone 770-266-4520, Fax 770-266-4415
www.walton.k12.ga.us

March 18, 2009

Beth Caraccio
8316 Island Point Drive
Harrison, TN 37341

Dear Ms. Caraccio:

Your request to approve your study titled "An Evaluation of Teachers' Perceptions of a State Developed Educational Portal" was received and reviewed by the Research Review Committee. I am pleased to notify you that your request is approved.

If you publish and/or present the findings of this study, you must include the following statement:

> Walton County School District approved the conduct of this study. However, this approval is not an endorsement of the design of the research or the methodology used. Nor does the Walton County School District endorse the findings of this study.

I am sure that you will work closely with Dr. Franklin to ensure that the research activities are not intrusive to the instructional programs within Walton County Public Schools, and you will maintain the confidentiality of the information you obtain.

I would appreciate receiving a copy of your findings and recommendations.

Please let me know if I can be of assistance.

Sincerely,

Louise Hutchens
Coordinator of Testing and Research

cc Dr. Harvey Franklin, Sr.
Dr. Rita Dickinson
Dr. Marci Campbell

Appendix E

IRB Approval (University of Tennessee of Chattanooga)

THE UNIVERSITY of TENNESSEE CHATTANOOGA

Institutional Review Board
Dept. 4905
615 McCallie Avenue
Chattanooga, TN 37403-2598
Phone: (423) 425-4443

MEMORANDUM

TO: Beth Caraccio
Dr. Valerie Rutledge

IRB # 09-089

FROM: Lindsay Pardue, Director of Research Integrity
M. D. Roblyer, IRB Committee Chair

DATE: May 12, 2009

SUBJECT: IRB Application # 09-089: An Evaluation of Teachers' Perceptions of a State Developed Educational Portal

The IRB Committee Chair has reviewed and approved your application and assigned you the IRB number listed above. You must include the following approval statement on research materials seen by participants and used in research reports:

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 09-089.

Since your project has been deemed exempt, there is no further action needed on this proposal unless there is a significant change in the project that would require a new review. Changes that affect risk to human subjects would necessitate a new application to the IRB committee immediately.

Please remember to contact the IRB Committee immediately and submit a new project proposal for review if significant changes occur in your research design or in any instruments used in conducting the study. You should also contact the IRB Committee immediately if you encounter any adverse effects during your project that pose a risk to your subjects.

For any additional information, please consult our web page http://www.utc.edu/irb or email us at: instrb@utc.edu .

Best wishes for a successful research project.

Appendix F

An Evaluation of Teachers' Perception of a State Developed Educational Portal Survey

Dear Walton County Teachers:

I am a student under the direction of Dr. Valerie Rutledge in the College of Health, Education and Professional Studies at The University of Tennessee at Chattanooga. I am conducting a research study to evaluate teachers' perceptions of learning objects available on the state-controlled website or educational portal.

I am requesting your participation, which will involve completing an online survey answering questions about the quality, relevance, and usefulness of the learning objects located on the GeorgiaStandards.Org website. I also hope to gather information showing whether Georgia's learning objects on the website meet your needs as you create lesson plans and assessments for your students, as well as whether they meet your needs to exemplify standards-based classroom pedagogy. This survey contains 20 items and should take approximately 25 minutes of your time. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. The attached questionnaire is anonymous. The results of the study may be published, but your name will not be known.

If you have any questions concerning the research study, please call me Beth Caraccio at (423) 653-4969 or e-mail me at bethcaraccio@gmail.com or Dr. Valerie Rutledge at (423) 425 -5374 or email her at Valerie-rutledge@utc.edu

This research has been approved by the UTC Institutional Review Board (IRB). If you have any questions concerning the UTC IRB policies or procedures or your rights as a human subject, please contact Dr. M. D. Roblyer, IRB Committee Chair, at (423) 425-5567 or email instrb@utc.edu.

Return of a completed questionnaire will be considered your consent to participate. Thank you.

Sincerely,

Beth Caraccio
Doctoral Candidate

An Evaluation of Teachers' Perceptions of a State Developed Educational Portal

1..What is your gender?

a. male
b female

2. How many years have you been teaching?

a. 0-5
b. 6-10
c. 11-15
d. 16-20
e. 21+

3. Which best describes your age range?

a. 22-27
b. 28-32
c. 33-37
d. 38-42
e. 43+

4. What grade level do you teach at your school?

a. Primary teacher (K-2)
b. Elementary teacher (3-5)
c. Middle school (6-8)
d. High School (9-12)
e. Instructional/Graduation coach (9-12)

5 What is your focus curriculum area?

(Choose all that apply)

a. all academic areas (primary/elementary)
b. math
c. science
d. social studies
e. English-Language arts/Reading
f. Career, Technology, Agriculture Engineering (CTAE)
g. music/band/chorus/drama
h. PE/health
i. fine arts
j. other_____

Please choose one answer to the following questions about the quality of the content on the website.

6. How do you rate the quality of the frameworks on the GSO website?
   5 very good
   4 good
   3 somewhat good
   2 of little good
   1 not good at all

7. How do you rate the quality of the tasks on the GSO website?
   5 very good
   4 good
   3 somewhat good
   2 of little good
   1 not good at all

8. How do you rate the quality of the standards on the GSO website?
   5 very good
   4 good
   3 somewhat good
   2 of little good
   1 not good at all

9.How do you rate the quality of the best practice videos on the GSO website?
   5 very good
   4 good
   3 somewhat good
   2 of little good
   1 not good at all

Please answer the following questions about the relevance of the content on the website.

10. How relevant are the frameworks to the K-12 curriculum?
   5 very relevant
   4 relevant
   3 somewhat relevant
   2 of little relevance
   1 not relevant at all

11. How relevant are the tasks to the K-12 curriculum?
    5 very relevant
    4 relevant
    3 somewhat relevant
    2 of little relevance
    1 not relevant at all

12. How relevant are the standards to the K-12 curriculum?
    5 very relevant
    4 relevant
    3 somewhat relevant
    2 of little relevance
    1 not relevant at all

13. How relevant are the best practice videos to the K-12 curriculum?
    5 very relevant
    4 relevant
    3 somewhat relevant
    2 of little relevance
    1 not relevant at all

Please answer the following questions about the usefulness of the content on the website.

14. How useful are the frameworks to the K-12 curriculum?
    5 very useful
    4 useful
    3 somewhat useful
    2 of little usefulness
    1 not useful at all

15. How useful are the tasks to the K-12 curriculum?
    5 very useful
    4 useful
    3 somewhat useful
    2 of little usefulness
    1 not useful at all

16. How useful are the standards to the K-12 curriculum?
    5 very useful
    4 useful
    3 somewhat useful
    2 of little usefulness
    1 not useful at all

17. How useful are the best practice videos to the K-12 curriculum?

5 very useful
4 useful
3 somewhat useful
2 of little usefulness
1 not useful at all

Please choose the answer that describe the use of the learning objects

18. How do you use the content on the GSO website for lesson planning? Indicate your level of use by circling the number that applies in each of the five situations. You may add a sixth situation "Other" and indicate its level of usage.

a. For access to new materials, GPS updates, and best practices for lesson planning

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

b. For use of the state created units, frameworks and tasks for lesson planning

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

c. For access to strategies focusing on differential instruction for lesson planning

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

d. For access to additional technology enhanced resources and tools to support a standard-based curriculum for lesson planning

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

e. For access to embed 21st Century skills (critical thinking, problem solving, creativity, collaboration, etc.) into GPS curriculum for lesson planning

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

f. Other (Specify) _____

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

19. How do you use the content on the GSO website for planning assessment? Indicate your level of use by circling the number that applies in each of the five situations. You may add a sixth situation "Other" and indicate its level of usage.

a. For access to new materials, GPS updates, and best practices for planning assessment

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

b. For use of the state created units, frameworks and tasks for planning assessment

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

c. For access to strategies focusing on differential instruction for planning assessment

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

d. For access to additional technology enhanced resources and tools to support a standard-based curriculum for planning assessment

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

e. For access to embed 21st Century skills (critical thinking, problem solving, creativity, collaboration, etc.) into GPS curriculum for planning assessment

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

f. Other (Specify) _____

5. Very high level of usage
4. High level of usage
3. Moderate level of usage
2. Low level of usage
1. No usage

Please choose the answers that describe the use of the learning objects and classroom pedagogy.

20 What are you doing differently in the classroom as a result of using the GSO learning objects **(check all that apply)**

a. Match individual learner's needs with appropriate resources
b. Increase personal use of technology as a teaching tool
c. Increase technology use by student use during instruction
d. Use the frameworks and tasks from the GSO website
e. Share lesson ideas and tools with others from the GSO website
f. Create lesson plans from GSO resources
g. Align classroom curriculum to GPS standards
h. Currently, incorporate all the above
i. Nothing- I do not use the website

VITA

Mrs. Beth Caraccio currently works for the Georgia Department of Education, Technology Services Division, as an Instructional Technology Specialist. Her work centers primarily on the GeorgiaStandards.Org (GSO) educational portal. She also works with local RESAs, ETCs, school systems, and higher education institutions around the state demonstrating how the learning objects on GSO help pre-service and classroom teachers around the state. As a specialist, she uses technology to enhance all areas of the curriculum. She is enthusiastic about sharing her knowledge about children, techniques and strategies which may be used in all levels of education. Her main goal is to help teachers learn the "tricks of the trade" to make their jobs easier. She also looks forward to learning from the audience as well as giving them hands-on experiences to take back and get started in their own classrooms.

Prior to joining the GaDOE, Beth taught for twenty-seven years in both elementary and middle levels. As a servant leader, Beth possesses the ability and desire to develop, understand, and engage activities that address her attendees' needs. She is committed to life-long learning, diversity, and quality teaching as well as getting the best out of each person she educates, whether it is a child or adult.

Mrs. Caraccio is completing her Doctorate in Education (Ed.D) focus in Learning and Leadership at the University of Tennessee in Chattanooga (UTC). She holds an Educational Specialist degree (Ed.S) in Educational Technology from the same university. She earned a Masters Degree in Reading/Language Arts and a Bachelor's Degree in elementary/early childhood from Florida State University. Her other

credentials include certificates for Teacher Mentoring, Gifted, Middle School, and Administration/Supervision.

Beth was named “Teacher of Year” at Ringgold Elementary (1991) and Primary School (2003). She has been published in several educational publications dealing both with technology and hands-on activities for learning. She began presenting at statewide conferences in 2000, at the National 1st Grade Conference (2003), the National Educational Computer Conference (NECC) in 2006 and 2007, and the International Reading Conference (IRA) 2006. She has also worked with teachers from across the U.S. in technology training dealing with Reading, Differentiated Instruction and Laptop Computers.