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ACCEPTANCE

This dissertation, THE ROLE OF MEDIA SPECIALISTS WITH RESPECT TO INSTRUCTIONAL TECHNOLOGY IN AN URBAN SCHOOL DISTRICT IN GEORGIA, by WARREN REID GOETZEL, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree Doctor of Philosophy in the College of Education, Georgia State University.

The Dissertation Advisory Committee and the student's Department Chair, as representative of the faculty, certify that this dissertation has met all standards of excellence and scholarship as determined by the faculty. The Dean of the College of Education concurs.

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Warren Reid Goetzel

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ABSTRACT

THE ROLE OF MEDIA SPECIALISTS WITH RESPECT TO INSTRUCTIONAL TECHNOLOGY IN AN URBAN SCHOOL DISTRICT IN GEORGIA
by
Warren Reid Goetzel

Due to the absence of a Georgia Educator Certificate in instructional technology, and the lack of state-wide staffing guidelines or requirements for instructional technology specialists, there is a lack of consistency in the qualifications and staffing of P-12 instructional technology specialists in Georgia public schools. The result is a lack of standardized support for the integration of technology into teaching and learning. Conversely, the state of Georgia provides standardized support for school library media programs through the certification and staffing of media specialists in every public school. In the absence of consistently staffed, certified instructional technology specialists, media specialists may be playing an increasingly larger role in instructional technology support and focusing less on other vital media specialist roles and responsibilities. A deeper understanding of the role of media specialists with respect to instructional technology may provide insight into determining a need for instructional technology certification and support in Georgia public schools.

The purpose of this quantitative survey study was to examine the role of media specialists with respect to instructional technology in an urban school district in Georgia. Practicing media specialists' perceived use, and perceived ideal use, of instructional technology specialist and media specialist job competencies were examined. These data could be used to inform the need for the support of certified instructional technology specialists in public schools.

The data revealed an overall difference among the four dependent variables (a) perceived current use of media specialist competencies, (b) perceived ideal use of media specialist competencies, (c) perceived current use of instructional technology specialist competencies, and (d) perceived ideal use of instructional technology specialist competencies. Within-subjects contrasts revealed significant pairwise differences among all the variables except the comparison of the use of media specialist competencies and the use of instructional technology specialist competencies. These findings suggest that in the absence of consistently staffed, certified instructional technology specialists, media specialists are playing an increasingly larger role in instructional technology support and focusing less on other essential media specialist roles and responsibilities.

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THE ROLE OF MEDIA SPECIALISTS WITH RESPECT TO INSTRUCTIONAL TECHNOLOGY IN AN URBAN SCHOOL DISTRICT IN GEORGIA

by

WARREN REID GOETZEL

A Dissertation

Presented in Partial Fulfillment of Requirements for the
Degree of
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in
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in
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Atlanta, Georgia
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ABBREVIATIONS

AASL	American Association of School Libraries
AECT	Association for Educational Communications and Technology
ALA	American Library Association
CAEP	Council for Accreditation of Educator Preparation
GADOE	Georgia Department of Education
GAPSC	Georgia Professional Standards Commission
ISTE	International Society for Technology in Education
NASDTEC	National Association of State Directors of Teacher Education and Certification
NCATE	National Council for Accreditation of Teacher Education
NETS	National Educational Technology Standards
TEAC	Teacher Education Accreditation Council

CHAPTER 1

INTRODUCTION

Without a Georgia Educator Certificate in instructional technology and state-wide staffing regulations for instructional technology specialists, there is a lack of standardization in the qualifications and staffing of P-12 instructional technology specialists in Georgia public schools. On the contrary, the Georgia Professional Standards Commission and the Georgia Department of Education provide standardized support for school library media programs through the certification and staffing of certified media specialists in all public schools state wide. Without consistently staffed, certified instructional technology specialists, media specialists may be playing an increasingly larger role in instructional technology support and focusing less on other integral media specialist roles and responsibilities. A greater understanding of the role of media specialists with respect to instructional technology could provide insight into establishing a need for the support of consistently staffed instructional technology specialists in Georgia public schools. In addition, media specialist certification and staffing requirements could serve as a model which instructional technology could replicate. Through the use of a survey, the role of media specialists with respect to instructional technology was examined.

Problem Statement

Due to the absence of state teacher certification (Georgia Educator Certificate) in instructional technology, and the lack of state-wide staffing guidelines or requirements for instructional technology specialists, there is a lack of consistency in the qualifications and staffing of P-12 instructional technology specialists in Georgia public schools. The result is a lack of standardized support for the integration of technology into teaching and learning into the

curriculum. Conversely, the state of Georgia provides standardized support for school library media programs through the certification and staffing of media specialists in every public school in the state. In the absence of consistently staffed, certified instructional technology specialists, media specialists could be playing an increasingly larger role in instructional technology support and focusing less on other vital media specialist roles and responsibilities.

Purpose of the Study

The purpose of this quantitative survey study was to examine the role of media specialists with respect to instructional technology in an urban school district in Georgia. These data could be used to inform the need for the support of certified instructional technology specialists in public schools. Practicing media specialists' perceived use, and perceived ideal use, of instructional technology specialist job competencies, as defined by the International Society for Technology in Education (ISTE) 2001 Educational Computing and Technology Standards for Technology Facilitation Initial Endorsement (Appendix A), were examined. The use of, and perceived ideal use of, media specialist job competencies as defined by the 2010 American Association of School Libraries (AASL) Standards for Initial Preparation of School Librarians (Appendix B), were also examined. A deeper understanding of media specialists' role in instructional technology could provide insight into determining a need for instructional technology certification and support in Georgia public schools. In addition, media specialist certification and staffing requirements could serve as a model which the field of instructional technology could replicate. The following questions guided this research design and data analysis:

1. Is there a statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies?

2. Is there a statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies?
3. Is there a statistically significant difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?
4. Is there a statistically significant difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

Conceptual Framework

According to Creswell (2003), three framework elements need to be taken into account when designing research: theoretical assumptions about what comprises *knowledge claims;* common procedures of research known as *strategies of inquiry;* and comprehensive procedures of data collection, analysis, and writing named *methods*.

This study makes use of a quantitative research framework. A quantitative approach is one in which the researcher applies postpositivist claims for creating knowledge, uses strategies of inquiry like experiments and surveys, and gathers data on prearranged instruments that produce statistical data (Creswell, 2003). Postpositivism denotes thought beyond positivism, confronting the conventional conception of unconditional truth and knowledge (Phillips & Burbules, 2000). Postpositivism mirrors a deterministic viewpoint where causes most likely determine effects or results (Creswell, 2003).

The strategy of inquiry used in the study is an independent cross-sectional survey. Strategies of inquiry, supply explicit direction for methods in a research design (Creswell, 2003).

According to Babbie (1990), cross sectional and longitudinal survey studies use questionnaires or structured interviews for data collection, with the intent of generalizing from a sample to population. Research methods are the specific methods of data collection and analysis (Creswell, 2003). Predetermined survey instrument methods were used in this study to collect data for statistical analysis.

Significance of the Study

Much research has been conducted on the role of the school media specialist. However, after exhaustive research, no studies were found that have examined the specific role of media specialist with respect to instructional technology. Prior studies on the role of media specialists (Ali, 1997; Andrews, 1997; Jones, 1997; Lai, 1995; McIntosh, 1994) do not examine the extent practicing media specialists use instructional technology job competencies or the extent they perceive instructional technology competencies should ideally be used. Prior studies have examined the extent practicing media specialists use media specialist job competencies or the extent they perceive the media specialist competencies should ideally be used by a media specialist (McCoy, 2000; Woodruff, 1994). However, these studies did not utilize the most current competencies of the media specialist as defined by the 2010 American Association of School Libraries (AASL) Standards. Furthermore, these studies do not examine the role of the media specialist with particular respect to instructional technology.

The study is possibly significant for its potential to help influence policy makers in Georgia to create a Georgia Educator Certificate in the field of instructional technology and create positions for instructional technology specialists in Georgia public schools. Certification could standardize the requirements for this position in order to ensure students benefit from the

support of a highly qualified professional educator that is trained in the field in which they are working.

Ideally the study would impact policy makers at both the state and local levels who are responsible for making certification and staffing decisions. Such policy makers would include members of the Georgia Professional Standards Commission, The Board of Regents of the University System of Georgia, the Georgia Department of Education, the Georgia State Board of Education, the Georgia State Schools Superintendent, and local school boards of education.

Definition of Terms

For the purposes of this study, the following terms and definitions apply:

American Library Association: The American Library Association (ALA), the oldest and largest library association in the world, was created to provide leadership for the development, promotion, and improvement of library and information services and the profession of librarianship in order to enhance learning and ensure access to information for all (American Library Association [ALA], 2010).

American Association of School Librarians: The American Association of School Librarians (AASL) is a division of the ALA that addresses issues, anticipates trends, advocates, and sets the future agenda for school library media (American Association of School Librarians [AASL], 2010).

Association for Educational Communications and Technology: The Association for Educational Communications and Technology (AECT) is a professional association whose activities are directed toward improving instruction through technology. The mission of the AECT is to provide international leadership by promoting scholarship and best practices in the

creation, use, and management of technologies for effective teaching and learning in a wide range of settings (Association for Educational Communications and Technology [AECT], 2010).

Certified professional personnel: Certified professional personnel are individuals trained in education who hold Teaching (T), Leadership (L), Service (S), Technical Specialist (TS), or Permit (P) certification issued by the Georgia Professional Standards Commission (Georgia Professional Standards Commission [GAPSC], 2010).

Georgia Professional Standards Commission: The Georgia Professional Standards Commission was created to assume full responsibility for the certification, preparation, and conduct of certified, licensed, or permitted personnel employed in the public schools of the State of Georgia. The Commission is also responsible for the development and administration of teacher certification testing. The Professional Standards Commission shall provide, by regulation, for certifying and classifying all certificated professional personnel employed in the public schools of Georgia (GAPSC, 2009).

Information literacy: Information literacy has progressed from the simple definition of using reference resources to find information. Multiple literacies, including digital, visual, textual, and technological, have now joined information literacy as crucial skills for the 21st century (AASL, 2009)

Instructional Technology: Instructional Technology is the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning. The words Instructional Technology in the definition mean a discipline devoted to techniques or ways to make learning more efficient based on theory but theory in its broadest sense, not just scientific theory. Theory consists of concepts, constructs, principles, and propositions that serve as the body of knowledge. Practice is the application of that knowledge to solve problems.

Practice can also contribute to the knowledge base through information gained from experience. Of design, development, utilization, management, and evaluation refer to both areas of the knowledge base and to functions performed by professionals in the field. Processes are a series of operations or activities directed towards a particular result. Resources are sources of support for learning, including support systems and instructional materials and environments. The purpose of Instructional Technology is to affect and effect learning (Seels & Ritchey, 1994).

International Society for Technology in Education: International Society for Technology in Education (ISTE) is a membership association for educators and education leaders engaged in improving learning and teaching by advancing the effective use of technology in P-12 and teacher education (International Society for Technology in Education [ISTE], 2010).

Job Competency: A job competency is a measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics that an individual needs in order to perform work roles or occupational functions successfully (U.S. Office of Personnel Management, 2010).

Job Analysis: Job analysis is the process of gathering, analyzing, and synthesizing descriptions of what people do in their jobs (Dick and Carey, 2004).

Media Specialist: The media specialist has many roles and responsibilities including teacher, instructional partner, information specialist, and program administrator (Information Power, 1998). The Georgia Professional Standards commission uses the title Media Specialist for educator certification. Other existing titles include teacher-librarian, school librarian, library media specialist, and school library media specialist.

National Association of State Directors of Teacher Education and Certification: The National Association of State Directors of Teacher Education and Certification (NASDTEC) created the Interstate Agreement on Qualification of Education Personnel in 1999. The

NASDTEC Interstate Agreement works to assist the movement of educators among the states and jurisdictions that are party to the agreement. The goal of this contract is to create a process by which educators prepared or certified in one member state could obtain a certificate from another member state (National Association of State Directors of Teacher Education and Certification [NASDTEC], 2009).

National Board for Professional Teaching Standards: The National Board for Professional Teaching Standards (NBPTS) is an independent, nonprofit organization based on the idea that the most significant action the United Sates can take to improve schools and student learning is to strengthen teaching. The NBPTS aim is to make teaching a profession dedicated to student learning and maintaining elevated standards for professional performance for educators (National Board for Professional Teaching Standards [NBPTS], 2009).

National Council for Accreditation of Teacher Education: The National Council for Accreditation of Teacher Education (NCATE) is the teaching profession's mechanism to help to establish high quality teacher, specialist, and administrator preparation. Through the process of professional accreditation of schools, colleges and departments of education, NCATE works to make a difference in the quality of teaching, teachers, school specialists and administrators (National Council for Accreditation of Teacher Education [NCATE], 2009).

Teacher Education Accreditation Council: The Teacher Education Accreditation Council (TEAC) accredits undergraduate and graduate professional education programs to guarantee the quality of teacher preparation programs. The actual teacher preparation program receives TEAC accreditation as opposed to the college, school, or department Teacher Education Accreditation Council [TEAC], 2010).

Delimitation and Limitations

This study included both delimitations and limitations. The following delimitations identify how the study was limited in scope. Although several factors can influence the integration of technology, this study just focused on the influence of instructional support. The study was also restricted to just media specialists currently employed in one urban school district in Georgia. By restricting the study to media specialists in one urban school district in Georgia, media specialists currently practicing in other districts in Georgia and other states are excluded. The study is also constrained in who the participants are. Restricting the participants in the study to just media specialists ensures that data is only gathered from those holding media specialist certification from the Georgia Professional Standards Commission (GaPSC) and currently practicing in this role. Finally, by focusing the study on media specialists' role with respect to instructional technology, other school staffing problems are excluded. Limiting the scope of the study ensures focus on the specific research questions. Further studies could examine media specialists in other school districts and throughout the state and address other factors that influence technology integration such as access to technology in schools.

In addition to the delimitations, there are several potential limitations, or weaknesses to the study. These limitations included use of a non-random convenience sample, surveys not being returned, insufficient sample size to collect statistically significant data, and the use of a custom-designed survey that is not a normed instrument used in previous studies. The decision to use a single stage convenience sampling design was based upon access to specific individuals in the population, media specialists in one Georgia urban school district. With email addresses of the members of the population, they could be sampled directly. To obtain a greater response rate,

the Dillman (2007) tailored design method was used to collect the data. This method involves using multiple contacts with the participants in an attempt to obtain a higher rate of response. Utilizing this method, a total of four contacts were made with the participants. The survey was distributed to all members of the population to maximize response rate. In addition, the survey instrument was based on two existing surveys with identical Likert-type scale from previously established research by Woodruff (1994) and McCoy (2001). Another limitation was that the data were collected by asking media specialists for their self-perceptions rather than by more objective data gathering such as observations. However, this limitation could serve as a benefit as media specialists' perceptions could impact their job view and willingness to share job competencies with instructional technology specialists. Limitations and their possible effects were reduced through the design of the study and the methodology. These limitations could reduce the generalizeability of the findings (Creswell, 2003). A further limitation of the study is potential researcher bias.

Researcher Bias

Researcher bias exists because the researcher is a former and current graduate student of instructional technology and has been employed as an instructional technology specialist in a Georgia public school district. The researcher earned a Specialist in Education (Ed.S) from Georgia State University in 2005 and served as an instructional technology specialist in a Georgia public school from 2003 to 2005.

The researcher also earned a Master of Library Media (M.L.M) in library media technology from Georgia State University in 2005. Additionally, the researcher has worked since 2007 as the media services coordinator in the Georgia public school selected for this study.

The researchers' belief in the need for certified instructional technology specialists in Georgia public schools combined with education and experience working in Georgia public schools in the fields of instructional technology and library media has the potential to influence the research.

Bias was addressed in several ways in order to lessen the possible effects. Prior to conducting the study the proposal was reviewed by persons outside the fields of education, library media, and instructional technology. Furthermore, the potential for bias was reduced by continuous review of the proposal by the dissertation committee which is comprised of experts in library media and instructional technology and outside of both fields.

Ethical Issues in the Study

Several measures were taken to reduce potential ethical issues in the design of the study. These steps were taken primarily to protect the rights of their research participants. The first measure was to submit an application to the Institutional Review Board at the Georgia public school district where the study was to take place. The next was to submit an application to the Institutional Review Board at Georgia State University. The study was not conducted until receiving final approval from both institutional review boards.

The study was designed to prevent any risk of harm to the participants and to promote anonymity and confidentiality. The participants were provided with an informed consent form in order to fully inform them of the procedures and risks involved in the study. The study was strictly voluntary so that the participants understood they were not required to or felt coerced into, participating in the research. The participants were given full rights to refuse to participate in the study without harm. To ensure confidentiality and anonymity no personal information including personal name or school name were collected in the study. The Georgia public school

district in which study was conducted was not referred to by name at any point in the study. In addition, the results were summarized and reported in group form in order not to identify any participant personally.

Summary

Chapter 1 provided an introduction and an overview of the study. Chapter 2 provides a review of the literature related to the role of the school media specialist with respect to instructional technology. Chapter 3 illustrates the study methodology including the research design and the specific survey research methods including instrumentation, sampling, and the procedures for data collection and analysis are discussed. Chapters 4 and 5 include the results and a discussion of the findings. Chapter 4 includes the survey data collected and a statistical analysis of the data. Chapter 5 presents a summary of the findings, conclusions, implications, and recommendations for further study.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this quantitative survey study was to examine the role of media specialists with respect to instructional technology in an urban school district in Georgia. These data could be used to inform the need for the support of certified instructional technology specialists in public schools. Practicing media specialists' perceived use, and perceived ideal use, of instructional technology specialist job competencies, as defined by the International Society for Technology in Education (ISTE) 2001 Educational Computing and Technology Standards for Technology Facilitation Initial Endorsement were examined. The use of, and perceived ideal use of, media specialist job competencies as defined by the 2010 American Association of School Libraries (AASL) Standards for Initial Preparation of School Librarians were also examined.

A review of the literature was conducted to provide a foundation for the proposed study by investigating the research related to the role of the school media specialist with respect to instructional technology. The literature review falls into five main categories: professional standards, educator certification, role of the media specialist, instructional technology support, and job analysis.

Professional Standards

When examining instructional technology and library media programs in universities and colleges of education across the United States it is critical to consider the professional standards that are applied to the development and maintenance of such programs. Research shows that pedagogical preparation has a constructive effect on teacher efficacy, teaching practice, and student achievement (Gitomer, Latham, and Ziomek, 1999; Wilson, Floden & Ferrini-Mundy, 2000; Darling-Hammond, 2000; Wenglinski, 2002). Fully prepared teachers are more effectual

in the classroom and their students' exhibit larger achievement gains than students whose teachers are not completely prepared (Wilson, Floden & Ferrini-Mundy, 2001).

The National Council for Accreditation of Teacher Education (NCATE) is the official organization responsible for accrediting educator preparation programs in the United States. Accreditation helps guarantee that those working in their respective field have been properly prepared to practice through mastery of a body of knowledge and pre-service practice (NCATE, 2009). NCATE's performance-based system of accreditation promotes the creation of competent classroom teachers, specialists, and administrators that work to help P–12 students learn. NCATE is a non-profit, non-governmental coalition of 33 national professional education and public organizations representing millions of Americans who support quality teaching. NCATE was founded in 1954 as the teaching profession's means to help create high quality teacher preparation. Through the process of professional accreditation of schools, colleges and departments of education, NCATE strives to make a difference in the quality of teaching and teacher preparation. NCATE currently accredits 632 colleges of education with 78 more seeking accreditation. NCATE accreditation provides recognition that a college of education has met national professional standards for the preparation of educators (NCATE, 2009).

Teacher Education Accreditation Council (TEAC) is also responsible for accrediting educator preparation programs in the United States. TEAC was founded in 1997 as a non-profit organization committed to enhancing academic degree programs for pre-K-12 professional educators (TEAC, 2010). Their goal is to support the preparation of competent, caring, and qualified professional educators. TEAC accredits undergraduate and graduate professional education programs to guarantee the quality of teacher preparation programs. The actual teacher

preparation program receives TEAC accreditation as opposed to the college, school, or department.

On October 22, 2010, NCATE and TEAC voted to form a unified accrediting organization for educator preparation (CAEP, 2010). Within two years both organizations will merge into one, the Council for Accreditation of Educator Preparation (CAEP). The goal of CAEP is to create greater efficiency in accreditation, raise the performance of candidates, and increase the standing of the profession by raising standards. The goals will be reached by elevating the standards for verification of program quality.

Latham and Ziomek (1999) examined academic and demographic profiles of prospective teachers and its affect on teacher testing. The study demonstrated that graduates of NCATE accredited colleges of education pass Educational Testing Service (ETS) content examinations (Praxis II) for teacher certification at a higher rate than graduates of unaccredited colleges. Teacher candidates who attend NCATE accredited colleges improve their probability of passing their content examinations by nine percent.

Mitchell (2005) reported the findings from a survey of deans and coordinators of NCATE accredited institutions. The survey results showed that 95% reported that candidates benefit from attending an NCATE accredited teacher preparation institution, 93% indicated working with the NCATE standards led to better alignment between standards, curriculum, instruction, and assessment, 83% reported working with the NCATE standards has improved the clinical practice component of preparation, and 84% indicated that working with the NCATE standards has led to more attention to candidate knowledge and skill in helping all students learn.

Darling-Hammond (2000) reported that the most powerful forecaster of the percentage of qualified teachers in a state is the percentage of teacher education institutions in a state that meet

national accreditation standards through NCATE. Quantitative analyses in the study suggested that measures of teacher preparation and certification were the strongest correlates of student achievement in reading and mathematics, before and after controlling for student poverty and language status. The study purported that policies implemented by states concerning teacher education, licensing, hiring, and professional development could make an essential difference in the qualifications and capabilities that teachers bring to their vocation.

Wenglinski (2002) found that student achievement was affected by teacher content background, as well as teacher education and professional development coursework. Furthermore, teaching practices, which had significant effects on achievement, were linked to teacher preparation, training they had received in developing critical thinking skills, and related pedagogy.

Darling-Hammond, Holtzman, Gatlin, and Vasquez-Heilig, (2005) revealed that certified teachers consistently generate significantly higher student achievement improvements than uncertified teachers. The study demonstrated that Teach for America recruits negatively impacted student achievement compared to certified teachers, and performed similarly to other uncertified teachers.

Goldhaber and Brewer (2000) concluded that the effects of teacher licensure on student achievement are larger than that of a content major in the field they teach. This suggests that what licensed teachers learn regarding teaching methods and pedagogy in teacher education coursework augments their capabilities in the classroom. Monk (1994) found that taking additional courses in teaching methods, in addition to content preparation, were positively correlated to student achievement in math and science. In mathematics, added teaching methods courses had more potent effects than further preparation in the content area. Monk stated “it

would appear that a good grasp of one's subject area is a necessary but not a sufficient condition for effective teaching." (Monk, 1994, p. 142). The studies by Monk (1994) and Goldhaber and Brewer (2000) relate directly to the scenario where uncertified instructional technology specialists working in Georgia public schools come from technology sectors such as service and support, due to their technology background and skills, as opposed to their teaching abilities or experience.

Instructional Technology Program Standards

There are two sets of NCATE Specialized Professional Associations' (SPA) standards related to instructional technology. These standards were developed by the Association for Educational Communications and Technology (AECT) and the International Society for Technology in Education (ISTE). Each set of standards should be considered by educational institutions in order to determine which set of standards is proper for particular programs in instructional technology. Both the AECT and ISTE standards are performance based. AECT standards should be applied to programs designed to prepare P-12 educators for positions in educational communications and instructional technology (AECT, 2001). The AECT recommends that institutions use either, or both, the AECT or ISTE standards for programs preparing P-12 technology leaders, technology specialists, and technology coordinators at the state, district, or building levels. AECT also recommends that institutions use ISTE standards for teacher preparation programs that focus on providing for endorsements in computer literacy and applications (AECT, 2001).

AECT currently reviews two types of programs in the field of instructional technology, Initial School Media and Educational Technology Specialist (SMETS) Programs and Advanced School Media and Educational Technology Specialist (SMETS) Programs. The current standards

for both initial and advanced SMETS programs are published in one document, *Standards for the Accreditation of School Media Specialist and Educational Technology Specialist Programs*, which were formally adopted in 2000 (AECT, 2001). The current standards are appropriate to program reports tendered through 2011. AECT is submitting a new set of standards to NCATE in the fall of 2011. Programs may use either set of standards through spring 2013. Commencing in the fall of 2013, programs submitting reports must use the new set of AECT standards (NCATE, 2010).

Initial SMETS programs are those that are designed to prepare educators for initial entry into the field. These programs are based on the design and practice of instructional technology. Bachelor's or Master's level programs which prepare educators for initial teacher certification would be considered Initial Programs in Educational Communications and Instructional Technologies (AECT, 2001).

Advanced SMETS programs stress theory, research, and higher level management processes. Graduate programs that serve to enhance knowledge and skills beyond the entry level would be considered Advanced Programs in Educational Communications and Instructional Technologies (AECT, 2001).

Currently there are programs at 32 colleges and universities in 21 states that have been approved by the AECT for adhering to the standards of program preparation (NCATE, 2010). The complete listing of nationally recognized AECT educational technology programs per accredited institution can be found in Appendix C.

There are two universities in the state of Georgia that have nationally accredited AECT programs in instructional technology, the University of Georgia and Valdosta State University. Both universities have Advanced Programs in Educational Communications and Instructional

Technologies. The University of Georgia offers a master's degree program and an education specialist degree program. Valdosta State University offers an education specialist degree program (NCATE, 2010).

To accommodate the increasing need for highly qualified technology facilitators and leaders, ISTE has worked with NCATE to create a set of performance assessment standards for initial and advanced endorsements in the areas of Technology Facilitation (TF) and Technology Leadership (TL). The ISTE standards for teacher preparation in the field of technology are also divided into two programs: initial and advanced. In 1996 NCATE approved ISTE's performance-based *Program Standards for Educational Computing and Technology*. The original program standards were titled, *Program for Initial Preparation of Teachers of: Educational Computing and Technology Literacy*, and *Program for Advanced Preparation of Teachers of: Educational Computing and Technology Leadership Endorsement*. In 2001 the original ISTE NCATE standards were revised and updated. The two programs were renamed *Technology Facilitation Initial Endorsement* and *Technology Leadership Advanced Program*. The 2001 standards are currently being updated for release in 2011. The 2001 standards are applicable to program reports submitted through 2011 (NCATE, 2010).

Programs based on the initial ISTE standards are designed to provide educators with a Technology Facilitation (TF) endorsement. These programs are aptly named Technology Facilitation Endorsement programs. Technology Facilitation programs train educators to work as school level technology facilitators. Educators finishing Technology Facilitation programs will acquire the knowledge and skills to teach technology applications; demonstrate effective use of technology to support student learning; and provide professional development, mentoring, and

technical assistance to teachers applying technology to enhance student learning (ISTE / NCATE Standards, 2004).

Technology programs based on advanced program ISTE standards are designed to prepare educators for roles in Technology Leadership (TL). Technology Leadership programs based on the advanced ISTE standards prepare educators to work as technology directors, coordinators, or specialists. Some advanced Technology Leadership programs serve to prepare educators to work in computing systems, facilities planning and management, instructional program development, and staff development. In addition, other advanced Technology Leadership programs that focus on the highly developed use of technology to enhance student learning and assessment can prepare educators to work in technology leadership positions at the district, regional, or state levels (ISTE / NCATE Standards, 2004).

Currently there are 12 states with colleges and universities with nationally recognized Technology Facilitation programs (NCATE, 2010). In these 12 states, there are 29 colleges or universities, which offer a total of 31 programs. Furthermore there are seven states with colleges and universities with nationally recognized Technology Leadership programs. In these seven states there are 11 colleges or universities that offer a total of 11 programs. Currently there are no NCATE / ISTE accredited programs in instructional technology in Georgia. The complete listing of nationally recognized ISTE technology facilitation and leadership programs per accredited institution can be found in Appendix D

Library Media Program Standards

School library media program standards have been around considerably longer than those from the emerging field of instructional technology. Since their inception in the early 1900's school library media program standards have been constantly evolving and transforming. The

history of the evolution is inseparably connected to the official standards and guidelines for the field of library media, a set of documents dating to the 1920s (Neuman, 2008).

As with instructional technology, there are two sets of Specialized Professional Association (SPA) NCATE approved standards related to programs that prepare school media specialists: AECT *Standards for the Accreditation of School Media Specialist and Educational Technology Specialist Programs*, and the American Association of Libraries (ALA) / American Association of School Libraries (AASL) *Standards for Initial Programs for School Library Media Specialist Preparation*. Additionally, the ALA also accredits programs not specifically designed for school media specialists but for programs designed to generally educate librarians and information specialists.

Currently AECT recommends using either, or both, the AECT and AASL standards for the accreditation of initial programs that prepare school media specialists. However, the AASL does not recognize AECT accredited library degree programs as the appropriate professional degree for school media specialists. ALA policy states that a master's degree in librarianship from a program accredited by the American Library Association or a master's degree with a specialty in school library media from a college or university accredited by the NCATE is the appropriate first professional degree for school media specialists (ALA, 2009). Currently there are six programs, at five colleges or universities, in five states with nationally recognized AECT School Media Specialist programs (NCATE, 2010). Currently Valdosta State offers the only AECT accredited media specialist program in the state of Georgia.

AASL and NCATE united in 1989 to develop standards for accrediting school media specialist preparation programs. *Curriculum Folio Guidelines for the NCATE Review Process: School Library Media Specialist Basic Preparation* was accepted by the NCATE in 1988 and a

revised version was accepted in 1993. These standards were based on *Information Power: Guidelines for School Library Media Programs* (AASL & AECT, 1988). In 1998 updated guidelines for school library media programs were released, *Information Power: Building Partnership* (AASL & AECT, 1998). NCATE and AASL again revised their accreditation standards for school library media preparation programs to mirror changes in the profession and the new guidelines for school library media programs. Next, the *AASL Standards for Initial Programs for School Library Media Specialist Preparation* were approved by NCATE in 2002 (AASL, 2003).

Due to significant changes in school library media programs that have increased the importance of technology and evidence-based learning, the ALA/AASL introduced a new set of guidelines for school library media programs in 2009, *Empowering Learners: Guidelines for School Library Media Programs* (AASL, 2009). The new guidelines center on developing a flexible learning environment with the goal of creating successful learners accomplished in multiple literacies. The focal point has shifted from the library as a physical location to one with dynamic borders that is tiered by various needs and impacted by an interactive global community. The purpose of *Empowering Learners* is to define the future course of school library programs. The guidelines require library media programs to meet the requirements of the altering school library environment as directed by the *Standards for the 21st-Century Learner* and *Standards for the 21st-Century Learner in Action (*AASL, 2009).

Based on the new guidelines for school library media programs the ALA/AASL revised their NCATE SPA standards once again in October 2010. Programs for the preparation of school media specialist can use either the 2002 or 2010 set of standards through spring 2012.

Commencing in the fall of 2012, programs submitting reports are required to use the new standards.

The main goal of the *Standards for Initial Programs for School Library Media Specialist Preparation* is to prepare graduate students to serve as certified school media specialists. The standards are designed to meet state and national criteria for school media specialists and to assure that candidates are able to accomplish the mission and goal of school library media programs set forth by the AASL: to ensure that students and staff are effective users of ideas and information. Successful candidates address three vital areas of service provided in effective library media programs: teaching and learning, information access and delivery, and program administration (AASL, 2003).

Joining NCATE has given ALA a chance to identify explicit entry level competencies for the school media specialists and to assess programs for the preparation of school media specialists. These programs are offered at the University of Georgia and Valdosta State University. Currently there are 22 states with colleges and universities with nationally recognized AASL school librarianship education programs. In these 22 states, there are 37 colleges, or universities that offer AASL recognized programs. Furthermore there are seven states with colleges and universities with nationally recognized programs. Currently the University of Georgia and Valdosta State are the only two institutions offering a nationally recognized NCATE/AASL reviewed and approved school library media education program in Georgia. The complete list of nationally recognized AASL school librarianship education programs can be found in Appendix E.

Educator Certification

The Georgia Professional Standards Commission (GaPSC) governs teacher Certification in Georgia. According to the GaPSC, professionals serving in public schools must possess a valid certificate appropriate to the field of employment (GaPSC, 2009). The GaPSC develops and maintains certification regulations and procedures to evaluate the credentials of prospective teachers and other professional employees in the schools, to make certain they meet specific preparation standards and requirements. GaPSC certification supplies a standardized echelon of professional knowledge and skills for educators working in public schools. The GaPSC has adopted a combination of individualized requirements and regularly used standards developed by the National Association of State Directors of Teacher Education and Certification (NASDTEC) (GaPSC, 2009).

The state of Georgia provides standardized support for school library media programs through the certification and staffing of media specialists in every public school in the state. The certification and staffing requirements for media specialist in Georgia could serve as an exemplary model for the certification and staffing of instructional technology specialists. According to *Service Field Rule 502-2-.201* the GaPSC certifies school media specialists to serve as a media specialist in grades P-12. In addition, the Georgia Department of Education Code 160-5-1-.22 (Personnel Required) necessitates all schools employ a certified Media Specialist (Georgia Department of Education [GaDOE], 2009). Currently there are seven universities in Georgia that offer programs leading to initial certification for media specialists (GaPSC, 2009). However, neither the GaPSC nor the GaDOE has code, rules, or requirements in place for P-12 school instructional technology specialists.

In Georgia certificates are arranged by type according to the function of the school personnel. Certificate types include Teaching, Service, and Leadership; the type of certificate determines in what capacity the educator may serve. The GaPSC offers certification in an array of fields with specific subjects or grade levels assigned to each field. Teaching fields include Early Childhood Education (P-5), Middle Childhood (4-8), Secondary Fields (7-12) and P-12 Fields (Special Education, Art, Music, etc.). Service fields and Leadership fields allow the educator to serve at all grade levels (P-12). In addition to full certification fields, endorsements to certificates are offered in teaching, service, and leadership areas (GaPSC, 2009).

The GaPSC classifies the Media Specialist certificate as a Service Field. Educators certified as a Media Specialist are in-field to serve as a media specialist in grades P-12. To add Media Specialist certification to any field one must complete a state approved Media Specialist preparation program, satisfy the appropriate content assessment, and hold a master's degree or higher. Neither an education degree, prior teaching certification, or experience in another academic discipline is required. Once these requirements have been satisfied a Clear Renewable Certificate is issued. The Clear Renewable certificate is the title of Georgia's professional educator certificate (GaPSC, 2009).

Media Specialist certification is available in three Certificate Categories. The Clear Renewable Certificate indicates all professional requirements for certification in the field have been met. Non-Renewable Professional Certificates are issued at the request of a Georgia employer when one or more conditions have to be met in order to be issued the Clear Renewable Certificate. Life Certificates were discontinued in 1974; however, Georgia educators issued life certification before 1974 may continue to use these certificates (GaPSC, 2009).

The Certificate Level assigned to a Georgia certificate indicates the highest degree level attained by the certificate holder that is recognized by the PSC for certification. The level is assigned to all certificate fields held by the certificate holder. Level 4 recognizes a bachelor's degree, level 5 recognizes a master's degree, level 6 recognizes a specialist in education degree, and level 7 recognizes a doctoral degree. Level 4 Media Specialist certification is not available in Georgia; a master's degree is required (GaPSC, 2009).

Staffing of a Media Specialist position is guaranteed in every base size school in the state through GaDOE code: CGB 160-5-1-.22 (Personnel Required). According to the GaDOE a base-size school is a school that has a minimum unweighted FTE count as follows: Grades K-5, 450; Grades 6-8, 624; Grades 9-12, 970. Furthermore, school systems must provide no less than half-time services of a media specialist for each school less than base size (GaDOE, 2009).

According to the findings of the *National Council of Education Statistics 2007-2008 Characteristics of Public and Bureau of Indian Education Elementary and Secondary School Library Media Centers in the United States: Schools and Staffing Survey (SASS)* (NCES, 2008) 62% of all public school library media centers in the U.S. had at least one full-time, paid, state-certified media specialist. Additionally, only 11 % of schools had no full-time, and at least one part-time, paid, certified media center specialist. Additionally, 27 % had no full-time or part-time, paid, s certified media specialists. SASS reported that 2,190 schools had a media center with a total of 2,250 full-time certified media specialists. Presently no data regarding staffing of instructional technology positions is collected by the National Council of Education Statistics (NCES). The only data the NCES collects in relation to instructional technology pertains to numbers of computers in school and internet connectivity.

Standardization

Standardization of educator preparation programs in technology utilizing the AECT and ISTE standards could eliminate inconsistency in technology programs and the names of technology certificates and endorsements. If states adopted standard certificate titles based on AECT and ISTE standards certificates in the field could be reciprocal from state to state.

In addition to providing guidelines and standardization for programs in technology the AECT and ISTE standards could also serve to eliminate the inconsistency in the names of technology certificates and endorsements that exist from one state to another. Technology certificates and endorsement, types and names, could be standard and reciprocal from state to state based on the professional standards. Presently there are 17 different names for instructional technology certificates and endorsements throughout the country (Goetzel, 2008).

As of 2005, Louisiana was the only state that had named their technology endorsements to coincide with the NCATE ISTE SPA program standards (Goetzel, 2008). The state of Louisiana is one of the 19 states that have nationally recognized ISTE technology endorsement program. Louisiana offers two educational technology endorsements to existing teaching certificates, the Louisiana Educational Technology Facilitation Endorsement and the Louisiana Educational Technology Leadership Endorsement. The Louisiana Educational Technology Facilitation Endorsement requires students to take nine semester hours of educational technology coursework while the Educational Technology Leadership Endorsement requires 21 hours of such coursework. In addition, the Educational Technology Facilitation Endorsement requires three years of teaching experience while the Educational Technology Leadership Endorsement requires 5 years of teaching experience (Louisiana Department of Education, 2001).

When discussing the standardization of technology certificates and endorsements it is important to understand the meanings of the various titles. The AECT defines instructional technology as "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning" (AECT, 1994, p. 1). In 2004 the following definition for Educational Technology was approved by AECT. “Educational Technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources” (Richey, Silber, & Ely, 2008, p. 24).

Traditionally, the field has been referred to as both educational technology and instructional technology. Advocates of instructional technology argue that the term instruction is more suitable for describing the function of technology while educational technology implies a school or educational setting. Instructional technology proponents also feel that the term instruction incorporates P-12 education, higher education, as well as training in military and corporate settings. AECT has also addressed this issue fully in its book *Educational Technology: A Definition with Commentary* (Januszewski & Molenda, 2007). Proponents of the term Educational Technology argue that since instruction is considered a part of education, the term educational technology assists in upholding a broader focus for the field (Seels & Ritchey, 1994).

The other term that appears in several of the state’s technology license or certificates is information technology. Information technology is a term used to describe technologies that help produce, manipulate, store, or communicate, information (University of California, 2005). This term seems to be the least applicable and relevant to the field. Instructional technology or educational technology are much broader terms that encompass information technology. Information technology alone does not entail education or instruction.

The National Association of State Directors of Teacher Education and Certification (NASDTEC) created the *Interstate Agreement on Qualification of Education Personnel* in 1999. The NASDTEC Interstate Agreement works to assist the movement of educators among the states and jurisdictions that are party to the agreement. The goal of this contract is to create a process by which educators prepared or certified in one member state could obtain a certificate from another member state. The contract states that if an educator completes an approved teacher education program and/or holds a valid teacher's certificate or license in any member state the license is transferable. Currently all 50 states and the District of Columbia participate in the agreement as well as Guam and Puerto Rico. The Canadian provinces of British Columbia and Ontario are also part of the agreement (NASDTEC, 2002).

Certificates in the field of technology are not currently part of the agreement because technology certificates and endorsement requirements and titles vary so widely from state to state or simply do not exist (NASDTEC, 2002). Georgia is an active member of the NASDTEC and has signed the Interstate Agreement with the other 49 states, the District of Columbia, and other NASDTEC jurisdictions for all certificate types: teacher, administrator, support, and vocational (GaPSC, 2010). The NASDTEC Interstate Agreement includes Media Specialist certification. According to GaPSC Rule 505-2-,15, an applicant for certification in Georgia who possesses or has possessed a professional certificate issued by another state or jurisdiction is eligible for a Clear Renewable professional Georgia certificate.

Another potential advantage of the standardization of technology programs and certificates would be recognition by the National Board for Professional Teaching Standards (NBPTS). The NBPTS is an independent, nonprofit organization based on the idea that the most significant action the United Sates can take to improve schools and student learning is to

strengthen teaching (NBPTS, 2004). The NBPTS aim is to make teaching a profession dedicated to student learning while maintaing elevated standards for the professional performance for educators. In order to achieve this goal they have elevated the standards for teachers, improved teacher preparation through the NBPTS standards, and fashioned performance-based assessments that express proficient application of the standards (NBPTS, 2004).

Currently the NBPTS has developed standards for 16 fields of certifications, and offers 25 certifications in those fields. The current fields of certification available for National Board Certification (NBCT) are; Generalist, Art, Career and Technical Education, English as a New Language, English Language Arts, Exceptional Needs, Library Media, Mathematics, Music, Physical Education, School Counseling, Science, Social Studies-History, and World Languages other than English (NBPTS, 2004). Since the inception of NBCT in 1994, 1783 teachers in Georgia have earned certificates. Georgia ranks seventh in the country for the most teachers to attain NBC. In total 40,206 have earned NBCT throughout the country (NBPTS, 2004). According to GaPSC Rule 505-2-,15, an applicant for certification in Georgia who possesses or has possessed a professional certificate issued by the NBPTS is eligible for a Clear Renewable professional Georgia certificate. Furthermore, Georgia teachers who receive NBCT could be eligible for a 10 % salary supplement if certain criteria are met. The NBPTS does not include instructional technology certification.

Vandevoort, Amrein-Beardsle, and Berliner (2004) report that students in grades three to six who were taught by National Board Certified Teachers in 14 Arizona school districts had higher scores than schoolmates on the Stanford Achievement Test 9th Edition (SAT-9) in almost 75% of reading, math and language arts measures. The study also found that student performance was indicative of having received more than a month's worth of extra class time.

Goldhaber and Anthony (2004) found that teachers who attain NBCT do a demonstrably superior job in the classroom. Student test scores increased an average of seven percent on their year-end math and reading tests for students whose teachers endeavored to obtain NBCT but were unsuccessful. The performance disparity was most distinct for younger and lower-income students whose increases with a NBTS certified teacher were as elevated as 15%.

Cavaluzzo (2004) established that students of NBCT scored higher than other ninth and 10th-graders on year-end math tests in Miami-Dade County Public Schools. The study also found that NBCT teaching practices are highly effective with students with special needs.

A prime example of the lack of standardization of certification requirements can be seen in a component of the U.S. Information Technology Act of 2000 called the Teacher Technology Bonus (eSchool News, 2000). Senator Conrad of North Dakota proposed that under the act teachers receive $5,000 cash bonuses by becoming certified in information technology by completing an information technology training program. Although this could serve to increase the technological proficiency of teachers the certification proposed is in information technology, as opposed to instructional or educational technology. In addition, the proposed routes to obtain this certification were not aligned with or based on existing AECT or ISTE standards. ISTE was named as one of the organizations able to provide this certification but two other organizations, not involved with P-12 education; the Computing Technology Industry Association and the Information Technology Training Association, were also named as being able to provide the certificates. In addition, the information technology training programs described in the act are programs designed to train computer programmers, systems analysts, and computer scientists or engineers, not educators.

Media Specialist Role

The State of Georgia 2007-20012 P-12 Technology Plan (GaDOE, 2007) states the importance of the media specialist in the life of the 21st century school and proclaims the library media center is the hub and heart of the school. The media specialist is not only the teacher in the media center but also serves as the information and instructional specialist and the technology consultant to the faculty, staff , and student, and is more vital than ever before (GaDOE, 2007).

In October 2007, the Georgia Department of Education Media Services program moved from the Division of Instructional Technology to the Division of Curriculum and Instruction. The move was made as direct response to the instructional role of media specialists particularly their involvment in curricular collaboration with content and grade level teams. According to the GaDOE, media specialists participate in and lead discussions on effectively integrating technology into lessons and units and some media specialists design and teach professional learning courses to their building and/or district educators. Because some students only have access to the Internet at their school or public library, it is vital that the media program and media specialist incorporate technology into the curriculum (GaDOE, 2007).

In a survey conducted by the GaDOE, reported in the State *of Georgia P-12 Technology Plan*, (GaDOE, 2007) technology leaders were asked to select the greatest challenge to reaching higher levels of technology integration in their school system. Lack of building level instructional technology support staff to assist teachers with integration, was reported by 13% of respondents. Furthermore, when asked to select strategies that would help their school district achieve higher levels of technology supported instructional practices, 74% of technology leaders responded that adding additional instructional technology facilitators to help staff would increase instructional technology use in schools. When technology leaders were asked to rate their level

of satisfaction with technology use in their school district 34% indicated 'Low - I am not very satisfied with our current uses of technology" while 64% indicated 'Moderate - I am reasonably satisfied with our current uses of technology.' The findings appear to indicate that despite the increased role media specialists play in instructional technology as perceived by the GaDOE, additional instructional technology support is needed.

The focus of the state Educational Technology Training Centers (ETTC) has shifted away from technology training (GaDOE, 2007). The ETTCs were originally conceived as technology training centers, their function has changed to include the delivery of statewide initiatives, such as Georgia Performance Standards (GPS) implementation, assisting schools in tracking and reporting federally-mandated Adequate Yearly Progress (AYP) data, supporting the DOE's online portal (GeorgiaStandards.Org), monitoring and implementing state and federal technology-related grants and programs (Title II-D and E-Rate), and building statewide technology consciousness and capability by supporting the Georgia Educational Technology Conference (GaDOE, 2007). Additionally, the ETTCs provide training on Cognos Graduation Coach Management System, Data Utilization Guide, and the Georgia Online Assessment System (GOAS). The ETTCs also deliver technical training in network administration and security, wireless network administration and security, and computer forensics (GaDOE, 2007).

The 2003 Georgia Technology Plan reported that since 1994 the GaDOE provides districts with one teacher base salary for every 1,100 Full Time Equivalent (FTE) to hire educational technology staff (GaDOE, 2003). However, this support is listed under technical support as opposed to instructional support. Moreover, any mention of funding for technology support was removed from the 2007-2012 plan.

The role of the media specialist and the job competencies required to succeed as a media specialist have grown and shifted substantially over time. The instructional role of the media specialist emerged officially in 1956 when the AASL acknowledged that librarians were becoming "coordinators, consultants and supervisors of instructional materials on each level of school administration" (Gates, 1968, p. 235). According to *Information Power* (AASL and AECT 1998), the media specialist serves as a curriculum, instructional, and technology leader who collaborates with all members of the learning community to create a student-centered library media program. States, including Georgia, Illinois, Kentucky, Indiana, and South Carolina and school districts are using the *Information Power* guidelines as the foundation for creating and/or updating of job descriptions, standards, and evaluation instruments for school media specialists (Shannon, 2001). The role of the media specialist today requires taking leadership roles in the areas of information access and delivery, learning and teaching, and program administration (AASL and AECT, 1998).

In 2009 the ALA/AASL introduced a new set of guidelines for school library media programs, *Empowering Learners: Guidelines for School Library Media Programs* (AASL, 2009). The new guidelines center on developing a flexible learning environment with the goal of creating successful learners accomplished in multiple literacies (AASL, 2009). Additionally, the guidelines highlight the critical role of reading by emphasizing, "the school library media program promotes reading as a foundational skill for learning, personal growth, and enjoyment" (AASL, 2009, p. 19). The focal point has shifted from the library as a physical location to one with dynamic borders that is tiered by various needs and impacted by an interactive global community (AASL, 2009). The purpose of *Empowering Learners* is to define the future course of school library programs (AASL, 2009). The guidelines require library media programs to

meet the requirements of the changing school library environment as directed by the *Standards for the 21st-Century Learner* and *Standards for the 21st-Century Learner in Action (*AASL, 2009).

Research has been conducted to examine the job competencies of school media specialists as viewed by media specialists, teachers, and school administrators. Schon, Helmstadter, and Robinson (1991) found significant agreement between principals and media specialists in Arizona on the competencies media specialists should possess. Principals and media specialists ranked competencies in six areas: professional matters, library materials, management, human behavior, planning and evaluation, and learning. The highest ranked tasks by both principals and librarians were instructional: provide leadership for the determination of educational objectives for the school library media program as an integral part of the educational program of the school; and plan learning activities and opportunities to enable students to assume an increasing amount of responsibility for planning, undertaking, and assessing their own learning.

Mosqueda (1999) found that principals and media specialists in 67 schools supported the philosophy and guidelines for school media programs as put forth by *Information Power*. Lai (1995) found that teachers and media specialists do not differ significantly in their attitudes concerning the instructional consultant role of the media specialist. Teachers and media specialists 'strongly agreed' that sharing relevant resources is a role of the school media specialist.

Using a quantitative survey study Woodruff (1994) compared job competencies taught in media specialist preparation programs with competencies required on the job and found a need for preservice training in public relations, planning and teaching library skills, and practical daily

management and organization. The study also identified competencies used on the job, but not a focus of preparation programs. These competencies included budgeting, handling operational functions, assisting parents, providing opportunities for critical thinking and problem solving, designing instruction and learning strategies, instructing students in information literacy skills, providing access to a wide variety of materials, and serving as an information specialist.

McCoy (2001) used a modified version of Woodruff's (1994) competency survey with practicing school media specialists to determine the job competencies that they value most. The results showed that the respondents placed administration, information access and delivery, and collection development as the focus of the school library media program. The respondents showed a high degree of general interest in technology integration and implementation, and they showed less interest in specific computer applications.

The rapid and massive influx of technology in education has significantly impacted the skill set media specialists need to be successful. In an ethnographic case study that technology integration hinges on the support of media specialists (Forrest, 1993). Media specialists spend a significant proportion of their day on tasks related to the diffusion of information technology (Forest 1993; McIntosh 1994). As a result, media specialist preparation programs are adapting by offering more technology courses. According to a survey distributed to library science faculty members at ALA accredited programs, 71% of ALA accredited programs offer technology-related courses (Harada, 1996). Callison and Tilley (1999) found that changes in course offerings in 25 ALA accredited programs for school media specialists included more attention to multimedia, Web site, and video production over the course of previous five years, and less on resources for children and youth and library administration.

Studies have also found statistically significant positive correlations between student achievement and the school library media program (Lance, 2001; Lance & Loertscher, 2001; Smith 2001). The characteristics of the media programs linked to positive gains in student achievement include: large, varied, and up-to-date collections; one or more full-time qualified librarians; library support staff to free certified media specialists from rote clerical duties and to allow them time to teach and collaborate with teachers and to engage in leadership activities outside the library; flexible access to the library before, during , and after school; networked computers providing student and faculty access to catalogs, licensed databases, and the Internet; adequate funding; library staff commitment to teaching; individual student library use; literacy instruction integrated into the curriculum; collaboration with teachers; and participation in curricular, organizational, and operational school leadership activities outside of the library. Studies show that student achievement is greater in schools with curriculum-integrated media programs (Bingham 1994; Hara 1996; Lance 1994, 2000).

Scholastic School Libraries Work! (Scholastic, 2008) a compendium of state studies summarizes findings from a decade of empirical studies from 19 states that cite the measurable impact school libraries and media specialists have on student achievement. The report recapitulates more than 60 studies that have shown clear evidence of the connection between student achievement and the presence of school libraries staffed with qualified school media specialists. In addition, it reports certified media specialists emerged as the most critical component of the library media program at all school levels. Furthermore, well-staffed library media programs, particularly those with full-time professional and support staff, exerted a greater impact on student achievement (Scholastic, 2008).

Scholastic School Libraries Work! also explains that the success of any school library program in promoting high academic achievement depends fundamentally on the existence of adequate staffing; specifically each library should have at least one full-time certified media specialist. The studies show that an effective school library, led by a credentialed media specialist, plays a critical role in facilitating student learning for building knowledge. It also reports that when a certified media specialist serves the school on a full-time basis, the school library media center is more likely to have electronic connections to other school collections and the public library, secure more federal funding, provide more frequent instruction in the use of electronic resources, and maintain a website linking to current and relevant professional resources (Scholastic, 2008).

Instructional Technology Support

Providing teachers and students access to technology, as well as providing quality professional development for teachers to integrate technology into teaching and learning, is essential for students to acquire technology competencies required in today's job market (U.S. Department of Education, 2000). Research has demonstrated that increased technology professional development and support positively impacts technology integration in K-12 education. DiBenedetto (2005) reported that technology trained teachers exhibit positive attitudes toward using technology and use more technology than teachers who did not have technology training. Wilson, Floden, and Ferrini-Mundy (2003) reviewed research on restraints to teacher use of technology and found that a lack of hands on training with technology skills, strategies for technology integration, alignment of computer purchases with curriculum, support systems, and administrative support were found to impede technology integration. O'Dwyer,

Russel, and Bebell (2004) reported that low teacher perception of support and inadequate professional development, negatively impact technology integration.

Schools spend less than 15% of their technology budget to fund professional development opportunities for teachers (Thurlow, 1999). Coley, Cradler, and Engel (1997) studied California schools that experienced success with technology integration after being awarded technology grants. From this study they developed a recommendation that a minimum of 30 % of technology dollars be dedicated to teacher development activities. Wahl (2000) recommends 70% of technology funds be spent on professional development with 30% spent on technology infrastructure.

In order to address the need for adequate technology support in schools several additional research studies have been conducted. Ronnkvist, Dexter, and Anderson (2000) found in a national probability sample of principals, technology coordinators, and teachers in U.S. elementary and secondary schools, that inadequate technology support impedes the effective integration of technology into classroom learning. The data indicated that 87% of participants responded that someone served as technology coordinator, but only 19% of these technology coordinators reported working full-time in that capacity. Another finding indicated that although Georgia primary and secondary schools are almost as likely to have a technology coordinator, secondary schools are twice as likely to have full-time coordinators. Moreover, the study indicated that technology coordinators' duties and responsibilities varied widely and at times were unrelated to supporting technology, which resulted in the inability to provide regular systematic technology support. The duties also did not include teacher staff development aimed at integrating technology. The study found that in both full-time and part-time scenarios, teachers received little assistance integrating technology. Full-time coordinators spent only about two

hours per week assisting teachers with technology integration, while part-time coordinators spent only about one hour a week proving support in this capacity.

Anderson and Becker (1998) conducted a national survey of all U.S. schools to find out how schools allocated their technology funds and how technology coordinators want the funds distributed. The results show that schools spend 73% on hardware, 7% on software, and 20% on support. Technology coordinators reported that they wanted 33% of the funds spent on support, 43% on hardware, and 24% on software. The results demonstrate that the majority of money is being spent on hardware despite technology coordinators beliefs that support is the most vital component of technology in schools.

Dexter, Ronkvist, and Anderson (2002) found in a national survey that quality support entails individual one-on-one assistance, extensive participation in professional development that focuses on instruction and technology integration, as opposed to isolated technology skills. Access to technology resources was also found to be integral. Based on this description of quality support, the study found that few schools have quality support. The study recommendations call for educational leaders to provide for quality technology support, hire coordinators with a complete range of skills, and develop a view of technology support that is not technical in nature but instructional.

Fatemi (1999) summarized the findings from *Technology Counts'99: Building the Digital Curriculum,* National Survey of Teachers' Use of Digital Content. Of the 1,407 teachers who responded to the survey only 53% use software to enhance classroom instruction, while 61% use the Internet. In addition, 40% of the teachers reported that their students do not use computers at all during a normal school week. The survey results affirm the prevailing notion among technology experts, that a lack of training is the largest obstacle to a teacher's integration of

technology. Teachers reported that training on integrating technology is more beneficial than training in basic technology skills. This type of instructional based technology staff development assists teachers in the selection of appropriate technologies and its effective infusion into teaching and learning. The report indicated that 42% of teachers had more than five hours of training in basic technology skills, while 29% had that much technology training focused on curriculum integration.

Jerald and Orlofsky (1999) reported the findings from a 1999 National Center for Educational Statistics (NCES) that indicates teachers feel less prepared to integrate technology into their teaching. Just 20% of all teachers indicated feeling very well prepared to integrate technology into their teaching (U.S Department of Education, 1999). Additionally, the number of schools with a full-time technology coordinator increased only one percentage point, from 29% to 30 % from 1996 to 1998. An additional 10% reported having a part-time coordinator for the same time period. Furthermore, 19% of schools where more than 70% of students are eligible for the federal free and reduced-price lunch program, have a full-time technology coordinator, which is down seven percentage points from 1997 – 1999.

Abbott (2003) reported the results of a nationwide survey of teachers, students, and administrators that indicated 53% of teachers do not customarily use technology in the classroom. Over half the students responding to questionnaires reported that they use technology no more than once a week. The majority of teacher respondents in the study reported less than proficient technology skills, while 62% reported that ‘not enough’ or ‘barely enough’ technology support personnel are available, and 64% reported not enough time available from technology support personnel to deliver technology professional development.

May (2000) and Davis (2002) found that teachers who receive mentoring and/or follow up support for technology training, integrate technology more often than teachers without support. Carlson (2002) reports that teacher training is a crucial factor for integrating technology to improve student performance. Carlson promotes teacher training that includes ongoing pedagogical support to help teachers tackle challenges of teaching. Parks and Pisapia (1994) found the support and collegiality teachers experience from their school through on-site help and peer training contribute to teacher development and technology integration.

Dias (1999) reported that the absence of a school based technology expert derails many integration efforts. Thurlow (1999) found that the teachers that integrate technology most often, value one-on-one training and were 40% more likely to start using computers from the recommendation of a technology coordinator as opposed to their own enterprise. Hofer, Chamberlin, and Scott (2004) describe how technology integration specialists can serve as change agents supporting curriculum and pedagogy renewal. Dexter, Ronkvist, and Anderson (2003) found that technology specialists were essential in providing both support and pressure for change. Gahala (2001) proposes that all schools have a site based technology specialist. Beyond assistance with technical issues, teachers also want a technology specialist who is cognizant of their instructional needs (Sherman, 1997). Bernal (2001) examined leadership factors that influence the implementation of technology and found that access to, and support for, technology in the school are the most influential factors in successful technology integration. Teachers need pedagogical support when choosing new software to integrate in classrooms in conjunction with proper professional development to learn how to effectively use it (Lewis, 1997; OTA, 1995).

Cuban (2001) contended that teachers use technology primarily for basic tasks such as word processing and presenting information and that recurrent support is essential for teachers to apply their recently acquired skills and cultivate their on-going technology development. "The infrastructure of technology support and professional development would need to be redesigned and made responsive to the organizational incentives and workplace constraints teachers' face" (Cuban, 2001, p. 183). A broad ongoing support system needs to be in place (Hurst, 2005; Lewis, 1997; Sherman, 1997). Beattie (2000) reports that one reason schools lack appropriate support for technology integration is that the type of technology support necessary for P-12 educational environments has not yet been defined.

Shoffner (2000) discussed the results of a national survey conducted to determine how instructional technology support positions are staffed in schools and how instructional technology specialists are certified across the United States. Results indicate that most states do not have certification programs in instructional technology and the instructional technology positions are staffed in a wide variety of ways across the country. Shoffner reported that only seven states (Pennsylvania, Massachusetts, Maine, New Hampshire, Wisconsin, North Carolina, and New Mexico) had licensing rules for instructional technology specialists and one state, Vermont, had a proposal for an instructional technology coordinator license. Although these eight states had some licensing requirements there was a great deal of variation in the type and name of license granted. Some states had full teaching licenses while others were just endorsements to existing certificates. In New Mexico and Maine, endorsements were available and Vermont had a proposed endorsement. The other five states (Pennsylvania, Massachusetts, New Hampshire, Wisconsin, North Carolina,) had full licenses available.

Goetzel (2008) discusses the results of a 2005 follow up study to Shoffner (2000). Department of Education websites for all 50 states were examined to determine how much change, if any, had taken place since 2000. In 2005 an additional eight states had licensing requirements for instructional technology positions. Endorsements to existing teaching certificates at that time were offered in 12 states. New York is the only state that had added a full initial certification. In addition, 10 states (Minnesota, New Jersey, Virginia, Connecticut, Pennsylvania, Delaware, California, Missouri, Texas, and Minnesota) had instructional technology certificates available from colleges of education. These certificates are not licenses or endorsements offered by the states licensing authority. They are certificates offered by colleges of education either in conjunction with existing degree programs in instructional technology or as standalone certificates not associated with degree programs. A lack of standardization in certificate and endorsement titles was found. Appendix F displays certificate types and names by state.

Job Competencies and Analysis

Job competencies are defined as a measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics that an individual needs to perform work roles or occupational functions successfully (U.S. Office of Personnel Management, 2011). The International Board of Standards for Training Performance and Instruction (IBSTPI), defines a competency as “an integrated set of skills, knowledge, and attitudes that enables one to effectively perform the activities of a given occupation or function to the standards expected” (International Board of Standards for Training Performance and Instruction [IBSTPI], 2010, para 2).

Organizations like AASL, ISTE, and AECT provide competency-based standards for accrediting academic programs in instructional technology and library media. In Georgia the AASL competency based standards serve as the basis for certification of media specialists. However, presently neither the AECT or ISTE competency based standards are used as the basis for certification of instructional technology specialists, as there is no certification in the field to date in Georgia. Instructional technology and library media competencies as defined by the performance indicators in the ISTE and AASL standards are used for the purpose of this study.

In the field of instructional technology and design, an analytical front-end analysis is vital before starting the design of instruction (Dick & Carey, 2004). This front-end analysis usually includes performance analysis, needs assessment, and job analysis. Job analysis is the process of gathering, analyzing, and synthesizing descriptions of what people do in their jobs (Dick & Carey, 2004). Up to date descriptions of what people do in their jobs are very useful in an age of quick and continuous technological transformation and job disarticulation. Profiles of what people do supply the basis for decisions about restructuring jobs for value, efficiency, and personal fulfillment. Job analysis involves developing an overall description of the job according to who performs the job and the work environment. Next a list of tasks that are believed to encompass a job is developed. The tasks are then categorized into group based on similar traits. These groups of tasks are the job duties. Following the development of the tasks subject matter experts and people who presently serve in that job examine and revise the tasks to be certain they typify the job. Next a survey and a corresponding response scale is developed and pilot tested with a sample of participants who presently serve in the position. Respondents are typically asked to respond to questions such as: “Is this a task that you perform as part of your job?” How frequently do you perform this task?” After the return of the surveys, responses are summarized

on a task-by-task basis, and high priority tasks are chosen for further review" (Dick & Carey, 2004, p. 24).

According to the U.S. Department of the Interior, "job analysis is information about a position to be filled that helps to identify the major job requirements (MJR) and links them to skills, education, training, etc., needed to successfully perform the functions of that job" (U.S. Department of the Interior, 1998, para 1). Furthermore, "The purpose of the job analysis is to identify the experience, education, training, and other qualifying factors, possessed by candidates who have the potential to be the best performers of the job to be filled and can also be used to identify documents and other elements vital to the candidate evaluation, referral and selection process, such as measurement methods and interview requirements." (U.S. Department of the Interior, 1998, para 1).

The U.S. Department of the Interior identifies two vital components of a job analysis: major job requirements (MJR), and knowledge, skills and abilities (KSAs). The first step is to identify the MJR the most vital duties and responsibilities of the position. The MJR are the central purpose or most essential reasons the position exists. The prime source of MJR is the most recent position description (U.S. Department of the Interior, 1998).

The second component is the identification of knowledge, skills and abilities (KSAs) needed to achieve each major job requirement and the quality level and quantity of the KSA required. KSA should be measurable, documented, and generate significant distinctions among candidates. The KSA should also be articulated by experience, education, or training. The objective of KSA is to pinpoint aspirants who are most qualified to execute the position (U.S. Department of the Interior, 1998). Job Competencies are defined as a measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics that an individual needs to

perform work roles or occupational functions successfully (U.S. Office of Personnel Management, 2011).

According to Rothwell & Kazanas (2008) in *Mastering the Instructional Design Process*, job analysis clarifies what activities personnel should be responsible for and the outcomes they should be attaining. Job analysis could also divulge impediments to performance that go beyond the control of personnel and require counteractive action by management. Additionally, the outcome of job analysis can be a beginning point for more comprehensive task or content analysis. (Rothwell & Kazanas, 2008).

Summary

A review of the literature was conducted to provide a foundation for the proposed study by investigating the research related to the role of the school media specialist with respect to instructional technology. The literature review fell into 5 main categories (a) professional standards, (b) educator certification, (c) role of the media specialist, (d) instructional technology support, and (e) job analysis.

Chapter 3 presents the research questions and design. The specific survey research methods including instrumentation, sampling, the protection of human subjects, and the procedures for data collection and analysis, are discussed.

CHAPTER THREE

METHODOLOGY

The purpose of this quantitative survey study was to examine the role of media specialists with respect to instructional technology in an urban school district in Georgia. These data could be used to inform the need for the support of certified instructional technology specialists in public schools. Practicing media specialists' perceived use, and perceived ideal use, of instructional technology specialist job competencies, as defined by the International Society for Technology in Education (ISTE) 2001 Educational Computing and Technology Standards for Technology Facilitation Initial Endorsement were examined. The use of, and perceived ideal use of, media specialist job competencies as defined by the 2010 American Association of School Libraries (AASL) Standards for Initial Preparation of School Librarians were also examined.

This chapter illustrates the study methodology. The research questions and design are presented. In addition, the specific survey research methods including instrumentation, sampling, the protection of human subjects, and the procedures for data collection and analysis, are discussed.

Research Questions

The following four questions guide the research design and data analysis:

1. Is there a statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies?

H_0: There is no statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies.

H_A: There is a statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies.

2. Is there a statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies?

H_0: There is no statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies.

H_A: There is a statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies.

3. Is there a statistically significant difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?

H_0: There is no statistically significant difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?

H_A: There is a statistically significant difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?

4. Is there a statistically significant difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

H_0: There is no statistically significant difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

H_A: There is a statistically significant difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

Research Design

A quantitative descriptive and comparative research design was utilized in this study. This particular research design utilized cross-sectional survey data. The use of survey data is often employed to estimate the characteristics of a population and to explore effects among variables (Whitley, 2002). This study was designed to explore four dependent measures (a) perceptions of current use of media specialist competencies, (b) perceptions of ideal use of media specialist competencies, (c) perceptions of current use of instructional technology specialist competencies, and (d) perceptions of ideal use of instructional technology specialist competencies. The level of each variable is described, and within-subjects comparisons were made to assess potential differences between the utilization and perceived need for use of instructional technology and media specialist competencies.

According to Creswell (2003), three framework elements need to be considered when designing research: philosophical assumptions about what constitutes *knowledge claims;* general procedures of research called *strategies of inquiry;* and detailed procedures of data collection, analysis, and writing called *methods*. This study employs a quantitative research framework which uses postpositivist claims for developing knowledge. A quantitative approach is one in which the principal investigator uses postpositivist claims for developing knowledge, employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data (Creswell, 2003). Postpositivism refers to thinking beyond positivism, challenging the conventional conception of absolute truth and knowledge (Phillips &

Barbules, 2000). Postpositivism also reflects a deterministic viewpoint where causes most likely determine effects or results (Creswell, 2003).

The strategy of inquiry used in the study was an independent cross-sectional survey study. Strategies of inquiry supply explicit direction for methods in a research design (Creswell, 2003). According to Babbie (1990), surveys include cross-sectional and longitudinal studies, and use questionnaires or structured interviews for data collection, with the intent of generalizing from a sample to population. Research methods are the specific methods of data collection and analysis (Creswell, 2003). Predetermined survey instrument methods were used in the study to collect attitudinal data for statistical analysis.

A quantitative research paradigm was selected for the research design of the study. Specifically, a survey design was used. The nature of the survey was independent cross-sectional, with the data collected at one point in time. The form of data collection used was by way of the Internet through a web based survey.

The quantitative survey design was selected because it provides numeric descriptions of the perceptions of the participants in the sample. “A survey design provides a quantitative or numeric description of trends, attitudes or opinions of a population by studying a sample of the population” (Creswell, 2003, p. 153). Survey data allows generalization from the sample to the population allowing the formulation of inferences about the attitudes of the population. In addition, the survey design was selected because of its ease of use, cost effectiveness, accessibility of the sample, and rapid turnaround in data collection.

There are several strengths and weaknesses of the non-experimental survey research design (Whitley, 2002). The use of survey data is an efficient and cost-effective way to gather data. This study utilized a web-based survey which is becoming an increasingly popular form of

data collection because of its efficiency and reliability. Isaac and Michael (1995) report surveys as the most widely used technique in education and behavioral sciences for the collection of data. This is because surveys can be used to gather data that describes the nature and extent of a specified set of data ranging from physical counts and frequencies to attitudes and opinions. Isaac and Michael also identified the four main characteristics of surveys; systematic, representative, objective, and quantifiable.

Tuckman (1999) states that survey research has "undeniable value" as a means of collecting data and as such it is frequently used in the field of educational research. Zhang (2000) affirmed that survey research is not only valued in educational research but it is also an extensively used research method in the areas of political science, psychology, marketing, sociology, business, and social work. Hackett (1981) believes that survey research is the best research device available to be used in the field of the social sciences. Survey research is a beneficial scientific social research method because it enables researchers to collect information on attitudes, opinions, and behaviors from a subset of a population and generalize the findings to the larger population (Babbie, 1990). Hackett (1981) states that "there seems to be a special character, a logic to survey research methods that make them unique and that warrant consideration of survey methods as a distinct and legitimate approach to research" (Hackett, 1981, p.600).

Barton and Baumann (2004) believe that Internet surveys can be effective for populations that are known to use e-mail and the internet. Solomon (2001) states that educational researchers and social scientists are starting to "widely use" surveys that are Internet-based. Web surveys are shown to be more cost efficient and to generate quicker response rates (Hadlock, Kaplowitz, & Levine, 2004). Zhang (2000) states that web surveys can reduce errors from coding and

transcription. Additionally, researchers are able to reach a larger number of participants in more geographically remote areas by using web based surveys (Zhang). Other strengths of the non-experimental survey design include being particularly useful when building theory and testing theoretical assumptions. Survey data can also provide researchers the opportunity to investigate processes that would be impossible or unethical to investigate with more sophisticated experimental or quasi-experimental designs.

The main limitation associated with the use of non-experimental survey data is that the researcher cannot imply causality (Stevens, 2002; Whitley, 2002). That is, statistical significance within this design does not imply cause-and-effect relationships. This limitation is a result of the researcher's inability to control extraneous confounding variables that can impact data analysis and interpretation.

The validity of survey research methodology is of critical importance. Therefore, the research was designed to adhere to the four major tasks in conducting survey research: (a) matching the survey design to the researcher's questions, (b) defining the sample, (c) selecting and developing data collection methods, and (d) analyzing the data (Crawl, 1993).

Sample, Population, and Participants

The population targeted for the study is practicing certified media specialists (P-12) in one urban school district in Georgia. Media specialists were selected primarily because they are often responsible for the integration of technology into their school's instructional program, particularly in the absence of support from instructional technology specialists. In addition, media specialists' certification and staffing requirements in Georgia could serve as an exemplary model which Instructional Technology could replicate. The urban district in Georgia was selected for a convenience sampling design.

Georgia media specialists (P-12) are defined as those who hold a Media specialist Educator Service Certificate from the Georgia Professional Standards Commission (PSC). The population includes media specialists in all three Certificate Categories. The Clear Renewable Certificate indicates all professional requirements for certification in the field have been met. Conditional Certificates are issued at the request of a Georgia employer when one or more conditions have to be met in order to be issued the Clear Renewable Certificate. Life Certificates were discontinued in 1974; however, Georgia educators issued life certification before 1974 may continue to use these certificates.

The population also includes media specialists of any Certificate Level. The certificate level assigned to a Georgia certificate indicates the highest degree level attained by the certificate holder that is recognized by the PSC for certification. The single level is assigned to all certificate fields held by the certificate holder, level five recognizes a master's degree, level six recognizes a specialist in education degree, and level seven recognizes a doctoral degree.

The population includes media specialists working at all three instructional levels in the selected district: elementary school, middle school and high school. This structure represents the predominant organization of Georgia public schools. Elementary school consists of grades PK-5, middle school consists of grades 6-8, and high school consist of grades 9-12.

The sampling design for the study was single stage convenience design with no stratification or clustering. The decision was based upon access to specific individuals in the population, media specialists in one Georgia urban school district. With email addresses of the members of the population, they could be sampled directly.

There were 93 media specialists employed in the school district selected. The basis for choosing the appropriate sample size was to assess the sample size needed to achieve a particular

level of statistical power. The a-priori power analysis was utilized to this end. The power analysis was conducted on the most conservative (i.e., analysis yielding the largest sample size) statistical approach to be used in chapter 4. An a-priori power analysis was conducted to determine the number of participants required to detect a medium effect size (f = .25) with power = .80 for a repeated measures ANOVA (analysis of variance) conducted at $\alpha = .05$. The power analysis suggested that 45 individuals were needed to achieve a power of .80 given these parameters. The power analysis was conducted with the statistical software G*Power 3.1.0 (Faul, Erdfelder, Lang, & Buchner 2007). A response rate of 30 % is considered to be a quality response rate for online surveys (Hamilton, 2005). The survey was distributed to all 93 members of the population to maximize response rate.

Instrumentation

The instrumentation used in this study was an original questionnaire (Appendix G) designed and created for this study by the researcher. A questionnaire is considered, "The complete data collection instrument used by an interviewer or respondent (or both) during a survey. It includes not only the questions and space for answers but also interviewer instructions, the introduction, and cards used by the respondent" (Bradburn, 2004, p. 360). The survey instrument was based on two existing surveys with an identical Likert-type scale from previous established research by Woodruff (1994) and McCoy (2001). Furthermore, a job competency survey for assistant principals with the same format was used as a model (Madden, 2008). This study examined the extent assistant principals felt they should use, and the extent they actually used, the job competencies using a different Likert-type scale than Woodruff (1994) and McCoy (2001).

The instrument was divided into two parts. Part one consists of seven items designed to collect demographic characteristics of the participants. These personal and professional variables including gender, age, number of years' experience as a media specialist, highest degree held, the year in which the participant completed their last degree, the number of school years the participant has worked in their current position, and the level of the school in which the participant currently works. The demographic information was used to validate the sample and to create demographic profile of the participants. The demographic data could also help inform further research on the topic outside of the scope of this study. Participants were also provided an opportunity to offer additional information relevant to the study in an open-ended item prior to exiting the survey.

Part two consisted of 76 statements that represented job competencies used by instructional technology specialists (33) and media specialists (43) as defined by the performance indicators in the 2001 ISTE and 2011 AASL, NCATE SPA standards. There are 43 AASL competencies and 33 ISTE competencies. The competencies are categorized into eight sections: (a) collaboration, (b) ethics, (c) information literacy, (d) instruction and assessment, (e) literacy and reading, (f) professional learning, (g) strategic planning, and (h) technology proficiency. The categories were created by the researcher for organizational purposes only. Therefore, a categorical analysis of the data will not be conducted. The categories were developed based on common themes in both sets of standards. Table 1 presents the total number of items in their respective categories and the number of items in each category. Each of the eight sections includes the AASL competencies listed first, then the ISTE competencies. Both sets of competencies are listed in chronological order.

The items in Part Two were rated using a Likert-type scale to assess perceptions regarding; the extent participants use instructional technology specialist and media specialist job competencies, and perceptions regarding the extent participants feel instructional technology specialist and media specialist job competencies should ideally be used. For each competency, participants first selected the number that reflects the extent to which they feel they are currently using the competency as a Media Specialist in their present position. Then for each competency, participants selected the number that reflects the extent to which they perceive the competency should ideally be used by them as a Media Specialist. Table 2 presents the forced choice Likert-type rating scale used in part two.

Table 1

Competency Categories and Number of Items Per Category

Category	Number of Items
1. Collaboration	9
2. Ethics	8
3. Information Literacy	8
4. Instruction and Assessment	22
5. Literacy and Reading	5
6. Professional Learning	7
7. Strategic Planning	15
8. Technology Proficiency	2

Table 2

Rating Scale

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

The respondents were asked to rate each item on this scale. According to Bradburn (1991) force-choice questions are questions that necessitate the respondent to select one alternative among several, even though they may not "like" any of the alternatives. Respondents are typically asked to choose the alternative that is closest to their views, although no alternative may precisely articulate their opinion.

Variables

According to Isaac and Michael (1995), "Dependent (output, outcome, or response) variables, are so called because they are "dependent" on the independent variables" (p.48). They also suggest that the measurement of multiple outcomes or dependent variables is preferred over the measurement of a single outcome in that if one variable does not prove significant, another may. "The dependent variable is the response or criterion variable presumed to be "caused" or influenced by the independent variables" (Creswell, 1994, p.129).

The dependent variables in this study are the attitudes regarding the extent to which the participants feel they are currently using instructional technology and media specialist job competencies, and the extent to which they perceive the competencies should ideally be used. Therefore there are four dependent variables in the study (a) perceptions of current use of media

specialist competencies, (b) perceptions of ideal use of media specialist competencies, (c) perceptions of current use of instructional technology specialist competencies, and (d) perceptions of ideal use of instructional technology specialist competencies.

Of the 76 survey items 43 (57%) pertain to dependent variables one and two, the extent media specialist competencies are currently used in their position and the extent media specialist competencies should ideally be used in their position while 33 (43%) pertain to dependent variable three and four, the extent instructional technology specialist competencies are used in their position and the extent instructional technology specialist competencies should ideally be used in their position.

Independent variables are considered independent of the outcome itself. "Independent variables are variables that (probably) cause, influence, or affect outcomes" (Creswell, 2003, p. 94). Since the study does not include controlling or manipulating the independent variable, media specialist, the category of respondents, it can be more specifically referred to as a status variable, a type of independent variable. Although researchers don't control or manipulate status variables, researchers can handle them as independent variables. (Heppner, Kivlighan, & Wampold, 1999). In this study the attitudes (dependent variables) of the respondents are dependent on who the respondents are (independent variable).

Demographic variables were also collected on participant characteristics. These personal and professional variables include gender, age, number of years' experience as a media specialist, and highest degree earned. However, the demographic data were not considered independent variables as they were only used to create a demographic profile of the participants, learn more about the population, validate the sample, and could help frame further studies.

Demographic variables were analyzed to determine their relationship to the dependent variables as the study does not necessitate a close examination of demographic variables.

Informed Consent

The questionnaire was designed to prevent any risk of harm to the participants and to promote anonymity and confidentiality. The participants were provided with an Informed Consent form in order to fully inform them of the procedures and risks involved in the study. The study was strictly voluntary so that the participants understood they were not required to, or felt coerced to, participate in the research. The participants were given the right to refuse to participate or to withdraw at any point during the study. To ensure confidentiality and anonymity no personal information including personal name, school district name, or school name was used in the study. In addition, the results were summarized and reported in group form in order not to identify any participant individually.

Data Collection Procedure

Following approval from the Georgia Public School Institutional Review Board and the Georgia State University Institutional Review Board (Appendix H), the survey was administered on the Internet through Survey Monkey; a Portland, Oregon based online survey company formed in 1999. A selection of items from the online survey can be found in Appendix I for visual reference. The survey was distributed using the web deployment option in Survey Monkey to create a URL sent in an email letter (Appendix J) to the school districts' electronic mail distribution list for media specialists. The specific addresses on the distribution list have not been provided for privacy and confidentiality. The email regarding the survey was sent at the end of the year meeting for the school districts' media specialists on May 11, 2011. Forty five minutes were provided for the participants at the meeting to complete the online survey if they

elected to do so at that time. The participants were provided the opportunity to complete an alternate job task during that time if they did not choose to participate in the study.

A cover email letter explained the purpose of the study, the participant's rights, and assured confidentiality. The email contained a link to the survey for participants to select if they choose to proceed. An opt-out link was also provided for participants to select if they did not wish to receive further emails regarding the study. If participants selected the opt-out link they were automatically removed from the study mailing list.

A letter of consent (Appendix K) explaining the purpose of the study, the participant's rights, and confidentiality preceded the survey once participants selected the link in the email cover letter to proceed to the survey. To consent and complete the survey participants clicked the *Next* button. To opt-out participants were instructed to close their web browser. The survey was protected through the use of Secure Sockets Layers (SSL) encryption built into Survey Monkey to make certain that private information is safely transferred across the internet.

To obtain a greater response rate, the Dillman (2007) tailored design method was used to collect the data. This method involves using multiple contacts with the participants in an attempt to obtain a higher rate of response. Utilizing this method, a total of four contacts were made with the participants. In order to increase the rate of return, three days (72 hours) after the initial email was sent, a second email was sent to remind potential participants to complete the survey. Three days (72 hours) later, a second reminder, a third attempt was sent. Three days (72 hours) later a third reminder, a fourth and final attempt was sent. In total, 4 emails were sent over the course of 10 days (216 hours). The deadline for data collection was three days (72 hours) after the fourth and final email (third reminder) was sent. After 13 days, access to the survey was closed since results from late responders of this type can be indicative of non-responders. In order to reduce

the potential for non-response and late response bias the study was carefully designed to reduce non-response rates.

Reliability and Validity

Self-constructed Likert scales need to be pre-tested to establish their reliability and validity. Validity of a test refers to its ability to measure what it claims to measure while reliability, "May be defined as the level of internal consistency or stability of the measuring device over time" (Borg & Gall, 1989, p 257).

To establish reliability, the survey instrument was pilot tested in March 2011 with 29 certified media specialists in Georgia who were not part of the population selected for the main study. According to Borg and Gall (1098), the population sample used in pilot testing is usually around 20 participants. Fourteen of the 29 surveys were completed for an overall response rate of 48.28%.

Cronbach's alpha (α) coefficient was used to determine the internal consistency (reliability) of the76 items of the Likert-type scale on the pilot study. Cronbach's alpha, also known as the reliability coefficient, was calculated to measure how well the items measured a single, unidimensional latent construct (Gliem & Gliem, 2003). Cronbach's alpha measures the average inter-correlation among the items or the extent to which item responses obtained at the same time correlate with each other. Cronbach's alpha is an unbiased estimate of the generalizeability (Cronbach, 1951). The reliability coefficient for the survey subscales ranged from .941 to .964. Nunnally (1978) recommends that instruments have reliability of .70 or higher. Table 3 presents the Cronbach's Alphas for the survey subscales. The high Alpha indicates that the response patterns are internally consistent on all subscales.

Table 3
Cronbach's Alphas for Survey Subscales

Scale	n of items	Cronbach's Alpha
Media Specialist Competency Use	43	.941
Media Specialist Competency Perceived Ideal Use	43	.958
Instructional Technology Specialist Competency Use	33	.952
Instructional Technology Specialist Perceived Ideal Use	33	.964

Once reliability was examined, validity was then addressed. Creswell (2003) defines validity as being able to draw meaningful conclusions and useful inferences from scores on the instrument. Creswell identifies five traditional types of validity in quantitative research; content, face, predictive, construct, and concurrent. Content validity determines if the items measure the content they were intended to measure. Predictive validity assesses if scores predict a criterion measure. Concurrent validity determines if results correlate with other results. Construct validity determines if items measure hypothetical constructs or concepts. Additionally, face validity assesses if the items appear to measure what it purports to measure.

In order to address face and content validity of the survey an expert in the field of instructional technology and survey research analyzed the survey and provided feedback and recommendations. The survey instrument also has face validity in that the 76 competency based items are based on established national standards. To build construct validity the survey instrument was based on two existing surveys with identical Likert-type scale from previous established research by Woodruff (1994) and McCoy (2001). Furthermore, a job competency survey for assistant principals with the same format was used as a model (Madden, 2008). This study examined the extent assistant principals felt they should use, and the extent they actually

used job competencies and used a different Likert-type scale than Woodruff (1994) and McCoy (2001).

Data Analysis

The data analysis explains the steps taken and the specific analyses involved in analyzing the data (Creswell, 2003). The survey data was compiled automatically into a comma delineated data file and downloaded to the researcher's computer from Survey Monkey. The Statistical Package for Social Sciences (SPSS ®) was used to import the data file for analysis. The data analysis was summarized in the results in narrative and table formats.

The data analyses were conducted in two stages. First, descriptive statistics were calculated on all research variables. Descriptive statistics served to organize and summarize the data so the data were more readily comprehended (Minium, Clarke, & Coladarci, 1999). The univariate descriptive analysis includes frequencies, central tendency (means), and variability (standard deviations). The distribution of scores was calculated providing a summary of the frequency of individual values, or ranges of values for a variable (frequency distribution). Central tendency of the distribution was determined through means to estimate the center of a distribution of values. Means were calculated as the measure of central tendency with the greatest reliability (Creswell, 2003). Variability or dispersion was calculated to determine the spread of the values around the central tendency. Standard deviations were calculated to examine dispersion for the greatest dependability of the value. Means and standard deviations were calculated for variables on a ratio or interval scale. Frequencies and percents were provided for nominal or ordinal scaled variables.

The second stage of the analyses presented the inferential statistics used to test the research hypotheses. All statistical tests were conducted at $\alpha = .05$. The following is a review of the statistical analyses that were used to test each research hypothesis.

A repeated-measures ANOVA was conducted to assess the study null hypotheses. The following testing procedures were used (Howell, 2004; Stevens, 2002). First, the data was screened for outliers prior to analysis. The participants' dependent variable scores were standardized, and the resulting z-scores were used to identify outliers in the data. A participant was considered an outlier when |standardized score| was greater than three. Histograms were displayed for each variable to assess the distribution of scores. Mauchly's test was conducted to assess the sphericity assumption. A Greenhouse-Geisser correction was applied in case of a significant Mauchly's test to compensate for heterogeneity of error variances and covariances. Lastly, a table of descriptive statistics and an ANOVA table were displayed.

To measure reliability Cronbach's alpha, also known as the reliability coefficient, was calculated to measure how well the items measured a single, unidimensional latent construct (Gliem & Gliem 2003). Cronbach's alpha measures the average inter-correlation among the items or the extent to which item responses obtained at the same time correlate with each other (Cronbach, 1951).

Summary

This chapter illustrated the study methodology. The research design, the specific survey research methods including instrumentation, sampling, the protection of human subjects, and the procedures for data collection and analysis, were discussed.

Chapter 4 includes the survey data collected and a statistical analysis of the data. The data analyses are summarized in the results in narrative and table formats. Chapter 5 entails a discussion and summary of the findings, conclusions, and recommendations for further study.

CHAPTER FOUR

RESULTS

The purpose of this quantitative survey study was to examine the role of media specialists with respect to instructional technology in an urban school district in Georgia. These data could be used to inform the need for the support of certified instructional technology specialists in public schools. Practicing media specialists' perceived use, and perceived ideal use, of instructional technology specialist job competencies, as defined by the International Society for Technology in Education (ISTE) 2001 Educational Computing and Technology Standards for Technology Facilitation Initial Endorsement were examined. The use of, and perceived ideal use of, media specialist job competencies as defined by the 2010 American Association of School Libraries (AASL) Standards for Initial Preparation of School Librarians were also examined.

This chapter presents the survey data collected and a statistical analysis of the data. The results of the descriptive and inferential statistical analyses are reported. Descriptive statistics were calculated on participant demographics and all research variables. Inferential statistics were used to test the research questions.

Descriptive Statistics for Participant Demographics

Questionnaires were emailed to the 93 participants selected for the study. Sixty-four individuals participated in the study for an overall response rate of 70%. Fifty-four (84.4%) individuals participated in the survey the first day it was made available while ten (15.6%) individuals participated after the first day. The descriptive statistics for the participants' categorical and continuous demographic variables are listed in Tables 4 and 5, respectively. The demographic data was generally representative of the population selected for the study. Fifty-nine (92.2%) of the participants were female, and five (7.8%) were male. The participants

average age was 47.24 (SD = 10.15) years of age. The participants' education level was reported as follows: 34 (53.1%) master's degree, 24 (37.5%) education specialist degree, and six (9.4%) doctoral degree. The average participant completed their last degree 12.33 (SD = 10.18) years prior to taking the survey. Thirty-nine (60.9%) respondents were employed at the elementary school, 12 (18.8%) at the middle school and 13 (20.3%) at the high school level. The population selected for the study consists of 57 elementary school media specialists, 17 middle school media specialists, and 18 high school media specialists. The average participant had approximately nine (M = 8.98, SD = 8.81) years employment in their current position as a media specialist, and 12.70 (SD = 10.18) years of total experience as a media specialist.

Table 4

Descriptive Statistics for Participant Demographics

Variable	n	%
Gender		
Female	59	92.2
Male	5	7.8
Education		
Master's Degree	34	53.1
Education Specialist Degree	24	37.5
Doctorate Degree (Ph.D. or Ed.D.)	6	9.4
School Type		
Elementary School	39	60.9
Middle School	12	18.8
High School	13	20.3

Table 5

Descriptive Statistics for Participant Demographics

Variable	n	Min.	Max.	M	SD
Age	62	27	68	47.24	10.15
Years worked as a Media Specialist	64	1	43	12.70	10.18
Years worked in current position as a Media Specialist	63	1	40	8.98	8.81
Years since last degree complete	64	1	47	12.33	10.18

Descriptive Statistics for Survey Subscales

The participants responded to *The Role of Media Specialists with Respect to Instructional Technology* survey. The instrument is a 76-item survey on a 5-point Likert-type scale, and is designed to assess four constructs:

1. The extent media specialist competencies are used in their position
2. The extent media specialist competencies should ideally be used in their position
3. The extent instructional technology specialist competencies are used in their position
4. The extent instructional technology specialist competencies should ideally be used in their position

The descriptive statistics for the participants' responses to the individual items of the media specialist competencies and instructional technology specialist competencies are listed in Appendices L and M, respectively. The individual items from each scale were combined to create overall mean composite scores for each of the constructs. The descriptive statistics for the four variables are listed in Table 6.

Cronbach's alphas (Table 7) were calculated to determine the level of internal consistency reliability of the four subscales (Whitley, 2002). All of the subscales demonstrated sufficient levels of internal consistency reliability. Subscale reliability ranged from .962 (instructional technology current use) to .969 (media specialist ideal use) for these data.

Table 6

Descriptive Statistics for Survey Subscales

Variable	n	Min.	Max.	M	SD
Extent media specialist competencies are used in their position	56	2.33	4.88	3.78	0.64
Extent media specialist competencies should ideally be used in their position	56	3.37	5.00	4.56	0.45
Extent instructional technology specialist competencies are used in their position	56	1.79	4.97	3.69	0.71
Extent instructional technology specialist competencies should ideally be used in their position	56	2.79	5.00	4.46	0.55

Table 7

Cronbach's Alphas for Survey Subscales

Scale	n of items	Cronbach's Alpha
Extent media specialist competencies are used in their position	43	.965
Extent media specialist competencies should ideally be used in their position	43	.969
Extent instructional technology specialist competencies are used in their position	33	.962
Extent instructional technology specialist competencies should ideally be used in their position	33	.967

Hypothesis Testing

Research Question 1

Is there a difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies?

H_0: There is no difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies.

H_A: There is a difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies.

Research Question 2

Is there a difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies?

H_0: There is no difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies.

H_A: There is a difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies.

Research Question 3

Is there a difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?

H_0: There is no difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?

H_A: There is a difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?

Research Question 4

Is there a difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

H_0: There is no difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

H_A: There is a difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

A repeated-measures ANOVA (analysis of variance) was conducted to address the study hypotheses. The following data analysis procedures were followed (Howell, 2004; Stevens 2002). First, the dependent variables were screened for outliers prior to analysis. The participants' scores were standardized, and the resulting z-scores were utilized to detect outliers in the data. A participant is considered an outlier when the |standardized z-score| is greater than three. This process revealed one outlier on the ideal use of instructional technology specialist competencies variable.

Histograms of the participants' perceptions of their current use and their perceptions of the ideal use of media specialist competencies are displayed in Figures 1 and 2, respectively. The histograms of the participants' perceptions of their current use and their perceptions of the

ideal use of instructional technology specialist competencies are displayed in Figures 3 and 4, respectively. The histograms for the use of media specialist competencies and the use of instructional technology specialist competencies indicated that the distributions were approximately normal. However, the histograms for the ideal use of media specialist competencies and the ideal use of technology specialist competencies indicated negatively skewed distributions (Howell, 2004). This indicates that the extreme (i.e., unusual) scores were on the low end of the scale for both variables. Mauchly's test of sphericity was significant, indicating inequality of error variances and covariances. Therefore, a Greenhouse-Geisser correction was used to adjust the degrees of freedom (Stevens, 2002).

The means and standard deviations of each variable are listed in Table 8. The ANOVA (Table 9) revealed an overall difference among the dependent variables, F (1.34, 72.36) = 72.13, $p < .01$ ($\eta^2 = .57$, power = 1.00). Within-subjects contrasts (Table 10) were conducted to further examine the significant ANOVA effect (Howell, 2004). The tests revealed significant pairwise differences among all the variables except the comparison of the use of media specialist competencies (M = 3.80, SD = 0.62) and the use of instructional technology specialist competencies (M = 3.72, SD = 0.66), F (1, 54) = 3.64, $p > .05$ ($\eta^2 = .06$, power = .47). This indicates that there was not a significant difference between their usages of the two core competencies.

However, the participants scored significantly higher on their perceptions of the ideal use (M = 4.58, SD = 0.43) of media specialist competencies compared to their current use (M = 3.80, SD = 0.62) of media specialist competencies. The tests also revealed that the participants scored significantly higher on their perception of the ideal use (M = 4.49, SD = 0.50) of instructional technology specialist competencies compared to their current use (M = 3.72, SD = 0.66) of

instructional technology specialist competencies. Lastly, the tests also showed that the participants scored significantly higher on their perception of the ideal use (M = 4.58, SD = 0.43) of media specialist competencies compared to their perceived ideal use (M = 4.49, SD = 0.50) of instructional technology specialist competencies.

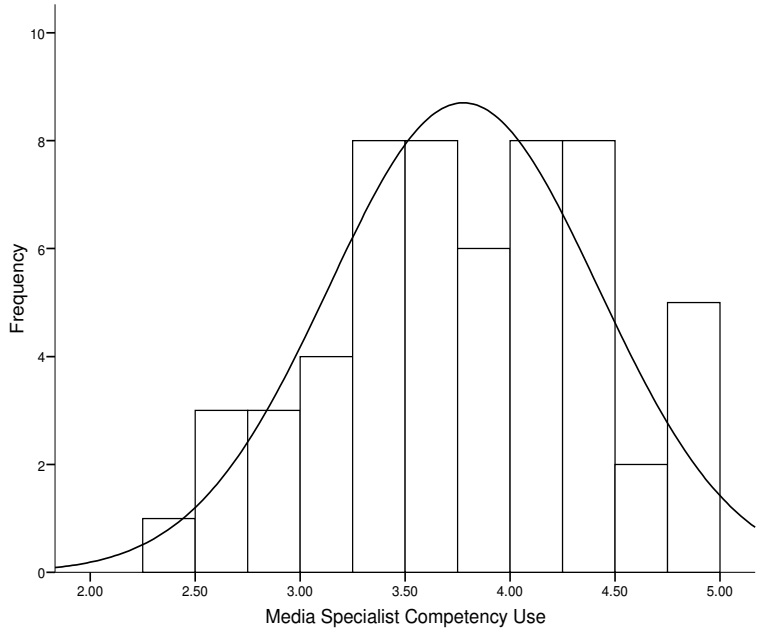

Figure 1. Distribution of Current Use of Media Specialist Competencies

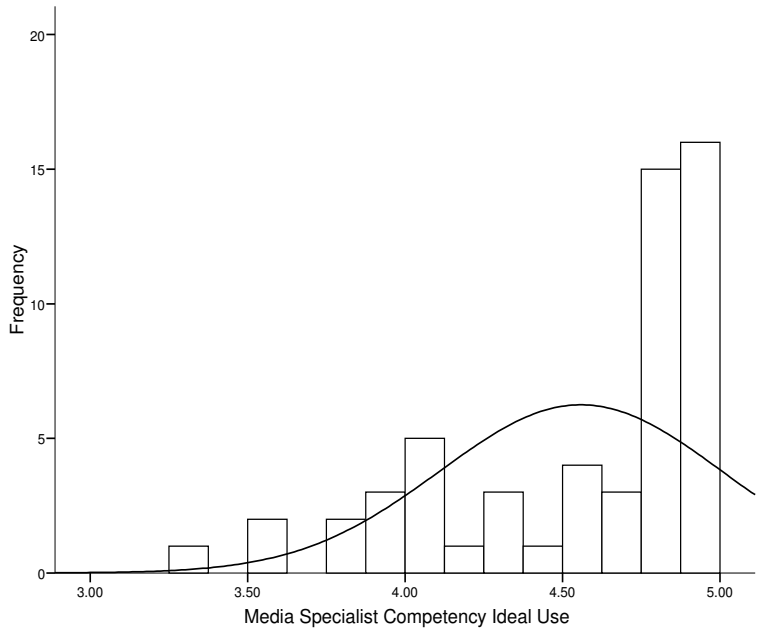

Figure 2. Distribution of Ideal Use of Media Specialist Competencies

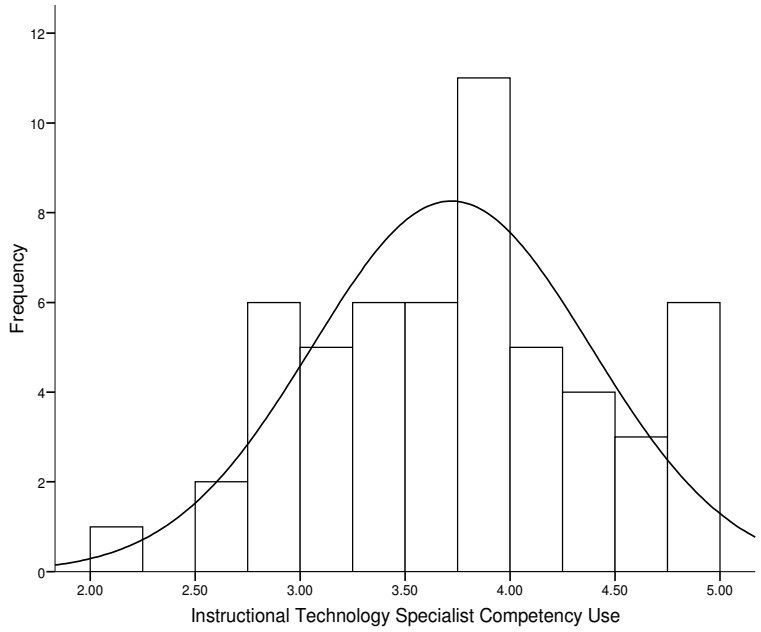

Figure 3. Distribution of Current Use of Instructional Technology Specialist Competencies

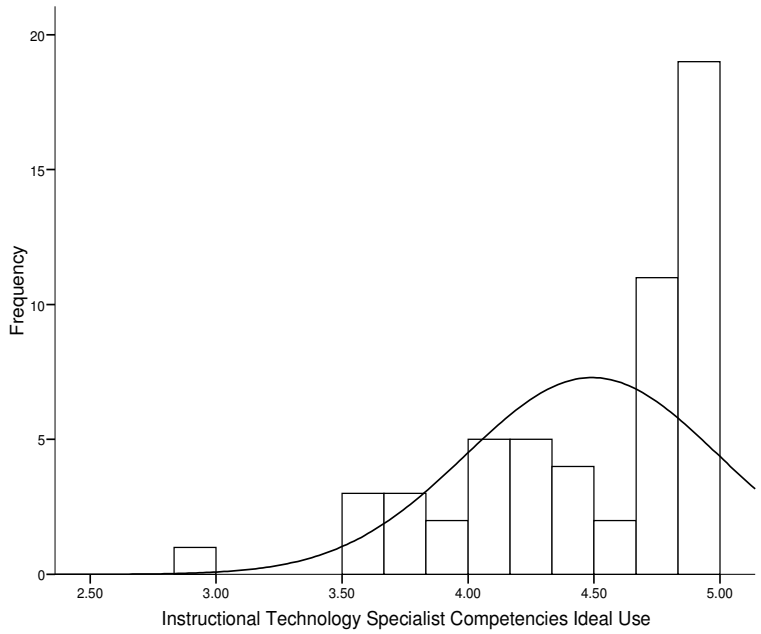

Figure 4. Distribution of Ideal Use of Instructional Technology Specialist Competencies

Table 8

Means & Standard Deviations of Current & Ideal Competency Use

Variable	n	M	SD
Current Use of Media Specialist Competencies	55	3.80	0.62
Ideal Use of Media Specialist Competencies	55	4.58	0.43
Current Use of Instructional Technology Specialist Competencies	55	3.72	0.66
Ideal Use of Instructional Technology Specialist Competencies	55	4.49	0.50

Table 9

Repeated-Measures ANOVA on Current & Ideal Competency Use

Source	*SS*	*df*	*MS*	*F*	*p*	η^2	Power
Competency	33.14	1.34	24.73	72.13	.000	.57	1.00
Error	24.81	72.36	0.34				

Table 10

Repeated-Measures Post Hoc Comparisons

Source	*df*	*F*	*p*	η^2	Power
Media Competency Use vs. Media Competency Ideal Use	1	84.57	.000	.61	1.00
	54	(0.39)			
Media Competency Use vs. Technology Competency Use	1	3.64	.062	.06	.47
	54	(0.11)			
Media Competency Ideal Use vs. Technology Competency Ideal Use	1	13.39	.001	.20	.95
	54	(0.03)			
Technology Competency Use vs. Technology Competency Ideal Use	1	75.67	.000	.58	1.00
	54	(0.43)			

Note. Number in parentheses represents MSE for corresponding error term.

Summary

This chapter presented the survey data collected and a statistical analysis of the data. The results of the descriptive and inferential statistical analyses were presented. Descriptive statistics were calculated on participant demographics and all research variables and inferential statistics were used to test the research questions. Chapter 5 presents a discussion and summary of the findings, conclusions, implications and recommendations for further study.

CHAPTER FIVE

DISCUSSION

The purpose of this quantitative survey study was to examine the role of media specialists with respect to instructional technology in an urban school district in Georgia. These data could be used to inform the need for the support of certified instructional technology specialists in public schools. Practicing media specialists' perceived use, and perceived ideal use, of instructional technology specialist job competencies, as defined by the International Society for Technology in Education (ISTE) 2001 Educational Computing and Technology Standards for Technology Facilitation Initial Endorsement were examined. The use of, and perceived ideal use of, media specialist job competencies as defined by the 2010 American Association of School Libraries (AASL) Standards for Initial Preparation of School Librarians were also examined.

This chapter presents a summary of the findings, conclusions, implications, and recommendations for further study.

Findings

The data analyses put forth in chapter 4 is discussed below. A discussion of the analysis of variance, the repeated-measures post hoc comparisons, the research questions, correlations to the literature and the open ended survey question are included.

Analysis of Variance

The repeated-measures ANOVA reported in chapter four was conducted to address the study hypotheses. The ANOVA revealed an overall difference, F (1.34, 72.36) = 72.13, $p < .01$ ($\eta^2 = .57$, power = 1.00) among the four dependent variables (a) perceived current use of media specialist competencies, (b) perceived ideal use of media specialist competencies, (c) perceived

current use of instructional technology specialist competencies, and (d) perceived ideal use of instructional technology specialist competencies.

The following post hoc comparisons, displayed in Figure 5, were conducted to further examine the significant ANOVA effect (a) current use of media specialist competencies versus current use of instructional technology specialist competencies, (b) current use of media specialist competencies versus ideal use of media specialist competencies, (c) current use of instructional technology specialist competencies versus ideal use of instructional technology specialist competencies, (d) ideal use of media specialist competencies versus ideal use of instructional technology specialist competencies.

	Media Competency Use	Media Competency Ideal Use	Technology Competency Use	Technology Competency Ideal Use
Media Competency Use	**X**	**A**	**B**	----------
Media Competency Ideal Use	----------	**X**	----------	**C**
Technology Competency Use	----------	----------	**X**	**D**
Technology Competency Ideal Use	----------	----------	----------	**X**

Figure 5. Post Hoc Comparisons

The within-subjects tests revealed significant pairwise differences among all the variables except in pairwise A, perceived current use of media specialist competencies (M = 3.80, SD = 0.62) versus perceived current use of instructional technology specialist competencies (M = 3.72, SD = 0.66). This indicates there was no significant difference between the perceived current usages of the two core competencies by the media specialists.

Pairwise B reveals the participants scored significantly higher on their perceived ideal use of media specialist competencies (M = 4.58, SD = 0.43) compared to their current use of media specialist competencies (M = 3.80, SD = 0.62). This indicates the media specialists perceive they should ideally be using media specialist competencies more than they currently are. This suggests that participants may not be using the media specialist competencies to their perceived ideal extent due to time spent engaged in instructional technology competencies since there was no significant difference found in the use of the two competencies.

Pairwise C revealed that the participants scored significantly higher on their perception of the ideal use of instructional technology specialist competencies (M = 4.49, SD = 0.50) compared to their current use of instructional technology specialist competencies (M = 3.72, SD = 0.66). This indicates the media specialists perceive they should be using instructional technology competences to a greater extent than they are currently.

Pairwise D reveals a significant difference among media competency ideal use (M = 4.58, SD = 0.43) and technology competency ideal use (M = 4.49, SD = 0.50). This suggests that although the media specialists perceive they should ideally be using both core competencies to a greater extent, media specialist competency perceived ideal use is greater than perceived ideal use of instructional technology competencies.

Research Questions

Research Question 1

Is there a difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies?

H_0: There is no difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies.

H_A: There is a difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies.

The results of the ANOVA and the Repeated-Measures Post Hoc Comparisons indicated there was a statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of media specialist competencies. Thus the null hypothesis is rejected and the alternate hypothesis is accepted. The analysis showed that media specialists would ideally like to use media specialist competencies to a greater extent.

This research finding coincides with the literature reviewed. Increased staffing levels in school media centers such as library support staff serves to free certified media specialists from rote clerical duties and allow them time to teach and collaborate with teachers and to engage in leadership activities outside the library (Lance, 2001; Lance & Loertscher, 2001; Smith 2001). Furthermore, well-staffed library media programs, particularly those with full-time professional and support staff, exerted a greater impact on student achievement (Scholastic, 2008). Additionally, barriers such as lack of time, resources, and a clear understanding of the role of the media specialist by teachers and principals are commonly found in research on the role of media specialists (Bingham 1994; Hara 1996; Lance, 2001).

Research Question 2

Is there a difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies?

H_0: There is no difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies.

H_A: There is a difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies.

The results of the ANOVA and the Repeated-Measures Post Hoc Comparisons indicated there was a statistically significant difference between participants' perceptions of their current use and their perceptions of ideal use of instructional technology specialist competencies. Thus the null hypothesis is rejected and the alternate hypothesis is accepted. The analysis showed that media specialists would ideally like to use instructional technology specialist competencies to a greater extent.

This research finding also corresponds with the literature reviewed. According to *Information Power* (AASL and AECT 1998), the media specialist serves as a curriculum, instructional, and technology leader who collaborates with all members of the learning community to create a student-centered library media program. Media specialist preparation programs are adapting by offering more technology courses. According to a survey distributed to library science faculty members at ALA accredited programs, 71% of ALA accredited programs offer technology-related courses (Harada, 1996). Callison and Tilley (1999) found that changes in course offerings in 25 ALA accredited programs for school media specialists included more attention to multimedia, Web site, and video production and less on resources for children and youth and library administration.

Research has demonstrated that increased technology professional development and support positively impacts technology integration in K-12 education. Providing teachers and students access to technology, as well as providing quality professional development for teachers to integrate technology into teaching and learning, is essential (U.S. Department of Education, 2000). In a 2007 survey conducted by the GaDOE, technology leaders were asked to select the greatest challenge to reaching higher levels of technology integration in their school system. Lack of building-level instructional technology support staff to assist teachers with integration, was reported by 13% of respondents. Furthermore, when asked to select strategies that would help their school district achieve higher levels of technology supported instructional practices, 74% of technology leaders responded that adding additional instructional technology facilitators to help staff would increase instructional technology use in schools.

Research Question 3

Is there a difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?

H_0: There is no difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?

H_A: There is a difference between participants' perceptions of their current use of media specialist competencies and their perceptions of their current use of instructional technology specialist competencies?

The results of the Repeated-Measures Post Hoc Comparisons indicated there was no statistically significant difference between participants' perceptions of their current use of media

specialist competencies and their perceptions of their current use of instructional technology specialist competencies. Thus the null hypothesis is not rejected. The analysis showed no significant difference between the perceived use of the two competencies.

This research finding is also in agreement with the literature reviewed. The lack of significant difference between the uses of both competencies reveals the role media specialists play in instructional technology and the need for additional support for technology integration in schools. The influx of technology in education has significantly impacted the skill set media specialists need to be successful. Forest (1993) found that technology integration hinges on the support of media specialists. Media specialists spend a significant proportion of their day on tasks related to the diffusion of information technology (Forest 1993; McIntosh 1994).

Ronnkvist, Dexter, and Anderson (2000) found in a national sample of principals, technology coordinators, and teachers in U.S. elementary and secondary schools that inadequate technology support impedes the effective integration of technology into classroom learning. Abbott (2003) found in a nationwide survey of teachers, students, and administrators that 62% reported that “not enough” or “barely enough” technology support personnel are available, and 64% reported not enough time available from technology support personnel to deliver technology professional development.

Hofer, Chamberlin, and Scott (2004) describe how technology integration specialists can serve as agents for change, supporting curriculum and pedagogy renewal. Dexter, Seashore, and Anderson (2003) found that technology specialists were essential in providing both support and pressure for change. Gahala (2001) proposes that all schools have a site-based technology specialist. Beyond assistance with technical issues, teachers also want a technology specialist who is aware of their instructional needs (Sherman 1997). Bernal (2001) examined leadership

factors indicated by teachers to influence the implementation of technology and found that access to, and support for, technology in the school are the most influential factors in successful technology integration. Teachers need pedagogical support when choosing new software to integrate in classrooms alongside of proper professional development to learn how to use it effectively (Lewis, 1997; OTA, 1995).

Research Question 4

Is there a difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

H_0: There is no difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

H_A: There is a difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies?

The results of the ANOVA and the Repeated-Measures Post Hoc Comparisons indicated there was a significant difference between participants' perceptions of ideal use of media specialist competencies and their perceptions of ideal use of instructional technology specialist competencies. Thus the null hypothesis is rejected and the alternate hypothesis is accepted. The analysis showed that media specialists perceive their core competencies should ideally be used to a greater extent than instructional technology specialist competencies.

This research finding also parallels the literature reviewed. The role of the media specialist today requires taking leadership roles in the areas of information access and delivery,

teaching and learning, and program administration (AASL and AECT, 1998). Although the role of the media specialist and the job competencies required to succeed as a media specialist have grown and shifted substantially over time to include technology, McCoy (2001) found that despite showing a high degree of general interest in technology integration and implementation, media competencies such as information access and delivery, and collection development were valued most by media specialists. Pickard (1993) found that the majority of the media specialists surveyed perceived the instructional role as important or very important.

Open-Ended Response

The additional information provided by participants in the open-ended response item in the survey also helped inform the findings and reflected the literature review. The open-ended item asked participants to provide any additional information they believed might be beneficial to the study. The responses demonstrate the increasing role of technology in school library media programs despite barriers such as time, resource scarcity, and administrative support. The 12 open-ended responses reported are listed below.

a) Upon completion of the survey, it is evident that media specialists must possess multiple technology skills and an understanding of library media skills in order to manage a successful media center. Without prerequisite coursework in library media education, managing a media center can be cumbersome and ineffective.

b) Principals should support the technology growth of a media center when a media specialist shows an ability to perform.

c) We need to educate the administrators who are open to listening that collaboration and the integration of web 2.0 technology in not just a trend it is the future of authentic assessment. Then we need the time, space and tools to ensure that our students are prepared to compete in the ever-changing global society. We have to change our mindset.

d) The lack of resources prevents this media specialist from integrating technology into the curriculum as much as they would like. Currently, our district view media specialists as librarians and prefer to leave instructional technology to technology specialist, who are itinerants and pulled away to complete other district mandated assignments.

e) Many issues relating to our role as media specialists are hindered due to the lack of technology, lack of cooperation with classroom teachers and the administration.

f) In my position, there is a great deal more that I could and would love to be doing to plan and assist instruction, support teachers, and assist students, particularly with technology based solutions. However I am frustrated by administratively chosen inappropriate and mal functioning equipment, and job duties that are not only not related to the school media center, but also actively interfere with my media center duties. I believe that principals and other administrators are not taught what a media specialist can and should do; nor are they taught how to evaluate our performance. Instead we are viewed as another "specials" teacher, and given paraprofessional duties. Our schedule and facilities are "hi-jacked" frequently for non-related activities that interfere with teaching students and helping teachers teach students. While it is important to be flexible and help with emergencies, if it happens more than once a week it is not an emergency, it is poor planning. The media center should be more than the largest and most nicely appointed meeting room in the school and the media specialist should be more than a spare body to be used for cafeteria duty, reading instruction, hall monitoring, and paper shuffling.

g) Sometimes lack of resources, especially in the area of technology, hinders our ability to use technology for teaching and learning. This is due to budget cuts and at times, mismanagement of funds by administration.

h) Many of the questions dealt with technology-- and some schools don't really have any technology.

i) As Warren pointed out, media specialists will need to become more and more flexible to change processes, in terms of how instructional technology is increasingly taking larger stage in our professional arenas. I embrace it wholeheartedly!

j) Good on collecting data

k) As a media specialist, you are faced with the responsibilities of helping everyone in the school before they might see a learning technology person. You have to be well abreast of what need to done and how to fix the problems as well as to mainstream into a lesson so that the teachers will be able to understand and how to solve the problem next time it arises. This includes also the job that you must do as a media specialist in the library. In other words, you have to be a well-rounded individual to do this job in dealing with the entire school climate and how to solve problems, integrate technology within the lessons as well on what resources are available on line. This job requires more than one hat to be a library school media specialist.

l) This study is a great one and needs to be addressed among state officials. It seems the deeper I go into my career as a library media specialist; the less my skills are applied to the profession. We are spending less time providing educational media hence, more time

> acting as babysitters and substitute teachers! If I had the money and energy, I would switch careers. Yet, I have neither, so I'm stuck!

Conclusions

The findings from this investigation of perceived current use and perceived ideal use of media specialist and instructional technology specialist competencies resulted in a deeper understanding of the role of the media specialist with respect to instructional technology in an urban school district in Georgia. The data analysis revealed an overall difference among the four dependent variables. The tests also revealed significant pairwise differences among all the variables except the perceived current use of both core competencies. These findings reflect that in the absence of consistently staffed, certified instructional technology specialists, media specialists are playing an increasingly larger role in instructional technology support and focusing less on other vital media specialist roles and responsibilities.

The data analysis indicated that perceived current use of media specialist competencies is significantly less than perceived ideal use. This suggests the media specialists perceived they were unable to take full advantage of the media specialist competencies. This indicates barriers may exist which prevent the media specialists from using the media specialist competencies to the ideal extent. These barriers as reported in the open-ended responses and the literature review include lack of time, limited access to resources, inadequate administrative support, and insufficient media center staff.

The analysis also showed that perceived current use of instructional technology competencies was significantly less than perceived ideal use. This indicates barriers may exist which prevent the media specialists from using the instructional technology competencies to the ideal extent. These barriers as reported in the open-ended responses and the literature review

include lack of time, limited access to resources, inadequate administrative support, and insufficient media center staff.

Additionally, the results indicated that the perceived current use of media specialist competencies is not significantly different from the perceived current use of instructional technology competencies. This indicates there was no significant difference in the extent the media specialists perceive they are currently using both competencies. This also suggests barriers could exist which prevent the media specialists from using their core media specialist competencies to a significant extent in relation to their use of both sets of competencies. These barriers as reported in the open-ended responses and the literature review included lack of time, limited access to resources, inadequate administrative support, and insufficient media center staff.

Moreover, the results also indicate that the media specialists' perceived ideal use of instructional technology competencies was significantly less than their perceived ideal use of media specialist competencies. This showed that although there is no significant difference in the extent the media specialists perceive they are currently using both competencies, the media specialists perceive they should ideally be using the media specialist competencies to a greater extent than the instructional technology competencies. This suggests the media specialists believe the use of their core media specialist competencies to be of greater importance than the use of instructional technology competencies.

Implications

Findings from this study imply that personal and/or professional factors prevent media specialists from using media specialist competencies and instructional technology competencies to their perceived ideal extent. The findings also imply that the media specialists may not be

using their core competencies to their perceived ideal extent due to the time devoted to the use of instructional technology specialist competencies.

The findings suggest that additional instructional technology support and/or increased media specialist staffing in schools may allow for media specialists to use their core competencies and/or the instructional technology competencies to their perceived ideal extent. The findings also imply that in the absence of instructional technology support in schools, media specialists devote less time to their media program as a whole. This suggests that in the absence of consistently staffed, certified instructional technology specialists, media specialists are playing an increasingly larger role in instructional technology support and focusing less on other vital media specialist roles and responsibilities. Moreover, the findings suggest that without the support of instructional technology specialists, media specialists' perceived current use of instructional technology is significantly less than their perceived ideal use.

Findings from the study support the need for additional instructional technology support in schools. The development of a Georgia Educator Certificate in the field of instructional technology and the creation of certified positions for instructional technology specialists in Georgia public schools could standardize the requirements for this position in order to help ensure that teachers and students benefit from a highly qualified professional educator who is trained in the field of instructional technology.

Suggestions for Further Research

The findings of this study provided data on the role of the media specialist with respect to instructional technology. Specifically, the results showed the perceived current use, and perceived ideal use, of both media specialist and instructional technology specialist job competencies. Since the study was limited to one urban school district in Georgia, replicating the

investigation with a larger population of media specialists in Georgia would increase the generalizability of the results to the state level. Additionally, using a random sample of a larger population of media specialists would also increase the statistical power of the findings. The study could also be replicated with a random sample of a larger population of media specialists on a national level thus increasing the generalizability to other geographic areas and nationally. Moreover, additional use of the survey instrument created and used for this study could lead to the refinement of the instrument in order to create a validated normed survey instrument.

In addition to replicating the existing study with a larger random sample, the survey instrument could be modified to include the refreshed Technology Facilitator Draft Standards (ISTE, 2011) once they are officially adopted by ISTE and NCATE. The survey instrument could also be modified when new media specialist standards and/or instructional technology specialist standards are released and adopted in the future.

Further research could also be conducted on the perceived actual use of instructional technology competencies and perceived ideal use of instructional technology competencies by instructional technology specialists, as opposed to media specialists. This investigation could provide useful data on the role of practicing instructional technology specialists. This type of study would be ideally conducted in states that currently have educator certification in the field of instructional technology. Furthermore, in states with unique state specific instructional technology standards for educator certification, a comparative analysis could be conducted on the perceived current use, and perceived ideal use of the state standards and the NETS standards.

Another area for additional study is the investigation of school leaders' attitudes regarding the role of media specialists and instructional technology specialists. Additional

research could also examine school leaders and/or media specialists' attitudes regarding the need for certified instructional technology support in schools.

An added area for investigation could be barriers to usage of media specialist and instructional technology competency use. Investigation into barriers to competency use could help determine why media specialists did not perceive they are using media specialist and instructional technology specialist competencies to the ideal extent. Further research could also be conducted on the role and impact the media specialist has on influencing the integration of technology in schools.

Summary

Due to the absence of state teacher certification (Georgia Educator Certificate) in instructional technology and the lack of state-wide staffing guidelines or requirements for instructional technology specialists, there is a lack of consistency in the qualifications and staffing of P-12 instructional technology specialists in Georgia public schools. The result is a lack of standardized support for the integration of technology into teaching and learning. In the absence of consistently staffed, certified instructional technology specialists, media specialists proved to be playing an increasingly larger role in instructional technology support and focusing less on other vital media specialist roles and responsibilities. A deeper understanding of the role of media specialists with respect to instructional technology has provided insight into determining a need for instructional technology certification and support in Georgia public schools.

Practicing media specialists' perceived use, and perceived ideal use, of media specialist and instructional technology specialist job competencies, as defined by the 2010 AASL Standards for Initial Preparation of School Librarians and the 2001 ISTE Educational

Computing and Technology Standards for Technology Facilitation Initial Endorsement were examined. Through the use of a survey, the role of media specialists with respect to instructional technology was studied in an urban school district in Georgia. The data revealed an overall difference among the four dependent variables (a) perceived current use of media specialist competencies, (b) perceived ideal use of media specialist competencies, (c) perceived current use of instructional technology specialist competencies, and (d) perceived ideal use of instructional technology specialist competencies. Within-subjects contrasts revealed significant pairwise differences among all the variables except the comparison of the use of media specialist competencies and the use of instructional technology specialist competencies. These findings suggest that in the absence of consistently staffed, certified instructional technology specialists, media specialists are playing an increasingly larger role in instructional technology support and focusing less on other essential media specialist roles and responsibilities. These data could be used to inform the need for the support of certified instructional technology specialists in public schools.

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APPENDIXES

APPENDIX A

ISTE - Technology Facilitation Standards (2001)

TF-I Technology Operations and Concepts
Educational technology facilitators demonstrate an in-depth understanding of technology operations and concepts. Educational technology facilitators:
A. Demonstrate knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Educational Technology Standards for Teachers). Candidates:
1. assist teachers in the ongoing development of knowledge, skills, and understanding of technology systems, resources, and services that are aligned with district and state technology plans.
2. provide assistance to teachers in identifying technology systems, resources, and services to meet specific learning needs.
B. Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies. Candidates:
1. Model appropriate strategies essential to continued growth and development of the understanding of technology operations and concepts.

TF-II Planning and Designing Learning Environments and Experiences
Educational technology facilitators plan, design, and model effective learning environments and multiple experiences supported by technology. Educational technology facilitators:
A. Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners. Candidates:
1. provide resources and feedback to teachers as they create developmentally appropriate curriculum units that use technology.
2. consult with teachers as they design methods and strategies for teaching computer/technology concepts and skills within the context of classroom learning.
3. assist teachers as they use technology resources and strategies to support the diverse needs of learners including adaptive and assistive technologies.
B. Apply current research on teaching and learning with technology when planning learning environments and experiences. Candidates:
1. assist teachers as they apply current research on teaching and learning with technology when planning learning environments and experiences.
C. Identify and locate technology resources and evaluate them for accuracy and suitability. Candidates:
1. assist teachers as they identify and locate technology resources and evaluate them for accuracy and suitability based on district and state standards.
2. model technology integration using resources that reflect content standards.
D. Plan for the management of technology resources within the context of learning activities. Candidates:
1. provide teachers with options for management of technology resources within the context of learning activities.

E. Plan strategies to manage student learning in a technology-enhanced environment. Candidates:
1. provide teachers with a variety of strategies to use to manage student learning in a technology-enhanced environment and support them as they implement the strategies.
F. Identify and apply instructional design principals associated with the development of technology resources. Candidates:
1. assist teachers as they identify and apply instructional design principals associated with the development of technology resources.

TF-III Teaching, Learning, and the Curriculum
Educational technology facilitators apply and implement curriculum plans that include methods and strategies for utilizing technology to maximize student learning. Educational technology facilitators:
A. Facilitate technology-enhanced experiences that address content standards and student technology standards. Candidates:
1. use methods and strategies for teaching concepts and skills that support integration of technology productivity tools (refer to NETS for Students).
2. use and apply major research findings and trends related to the use of technology in education to support integration throughout the curriculum.
3. use methods and strategies for teaching concepts and skills that support integration of research tools (refer to NETS for Students).
4. use methods and strategies for teaching concepts and skills that support integration of problem solving/decision-making tools (refer to NETS for Students).
5. use methods and strategies for teaching concepts and skills that support use of media-based tools such as television, audio, print materials, and graphics.
6. use and describe methods and strategies for teaching concepts and skills that support use of distance learning systems appropriate in a school environment.
7. use methods for teaching concepts and skills that support use of Web-based and non Web-based authoring tools in a school environment.
B. Use technology to support learner-centered strategies that address the diverse needs of students. Candidates:
1. use methods and strategies for integrating technology resources that support the needs of diverse learners including adaptive and assistive technology.
C. Apply technology to demonstrate students' higher-order skills and creativity. Candidates:
1. use methods and facilitate strategies for teaching problem-solving principles and skills using technology resources.
D. Manage student learning activities in a technology-enhanced environment. Candidates:
1. use methods and classroom management strategies for teaching technology concepts and skills in individual, small group, classroom, and/or lab settings.
E. Use current research and district/regional/state/national content and technology standards to build lessons and units of instruction. Candidates:
1. describe and identify curricular methods and strategies that are aligned with district/regional/state/national content and technology standards.
2. use major research findings and trends related to the use of technology in education to support integration throughout the curriculum.

TF-IV Assessment and Evaluation

Educational technology facilitators apply technology to facilitate a variety of effective assessment and evaluation strategies. Educational technology facilitators:

A. Apply technology in assessing student learning of subject matter using a variety of assessment techniques. Candidates:

1. model the use of technology tools to assess student learning of subject matter using a variety of assessment techniques.
2. assist teachers in using technology to improve learning and instruction through the evaluation and assessment of artifacts and data.

B. Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning. Candidates:

1. guide teachers as they use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.

C. Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity. Candidates:

1. assist teachers in using recommended evaluation strategies for improving students' use of technology resources for learning, communication, and productivity.
2. examine and apply the results of a research project that includes evaluating the use of a specific technology in a PK-12 environment.

TF-V Productivity and Professional Practice

Educational technology facilitators apply technology to enhance and improve personal productivity and professional practice. Educational technology facilitators:

A. Use technology resources to engage in ongoing professional development and lifelong learning. Candidates:

1. identify resources and participate in professional development activities and professional technology organizations to support ongoing professional growth related to technology.
2. disseminate information on district-wide policies for the professional growth opportunities for staff, faculty, and administrators.

B. Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning. Candidates:

1. continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.

C. Apply technology to increase productivity. Candidates:

1. model advanced features of word processing, desktop publishing, graphics programs, and utilities to develop professional products.
2. assist others in locating, selecting, capturing, and integrating video and digital images in various formats for use in presentations, publications, and/or other products.
3. demonstrate the use of specific-purpose electronic devices (such as graphic calculators, language translators, scientific probeware, or electronic thesaurus) in content areas.
4. use a variety of distance learning systems and use at least one to support personal/professional development.
5. use instructional design principles to develop hypermedia and multimedia products to support personal and professional development.

6. select appropriate tools for communicating concepts, conducting research, and solving problems for an intended audience and purpose.
7. use examples of emerging programming, authoring or problem-solving environments that support personal/professional development.
8. set and manipulate preferences, defaults, and other selectable features of operating systems and productivity tool programs commonly found in PK-12 schools.
D. Use technology to communicate and collaborate with peers, parents, and the larger community to nurture student learning. Candidates:
1. model the use of telecommunications tools and resources for information sharing, remote information access, and multimedia/hypermedia publishing in order to nurture student learning.
2. communicate with colleagues and discuss current research to support instruction, using applications including electronic mail, online conferencing, and Web browsers.
3. participate in online collaborative curricular projects and team activities to build bodies of knowledge around specific topics.
4. design, develop, and maintain Web pages and sites that support communication between the school and community.

TF-VI Social, Ethical, Legal, and Human Issues
Educational technology facilitators understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and assist teachers in applying that understanding in their practice. Educational technology facilitators:
A. Model and teach legal and ethical practice related to technology use. Candidates:
1. develop strategies and provide professional development at the school/classroom level for teaching social, ethical, and legal issues and responsible use of technology.
2. assist others in summarizing copyright laws related to use of images, music, video, and other digital resources in varying formats.
B. Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities. Candidates:
1. assist teachers in selecting and applying appropriate technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
2. identify, classify, and recommend adaptive/assistive hardware and software for students and teachers with special needs and assist in the procurement and implementation.
C. Identify and use technology resources that affirm diversity. Candidates:
1. assist teachers in selecting and applying appropriate technology resources to affirm diversity and address cultural and language differences.
D. Promote safe and healthy use of technology resources. Candidates:
1. assist teachers in selecting and applying appropriate technology resources to promote safe and healthy use of technology.
E. Facilitate equitable access to technology resources for all students. Candidates:
1. recommend policies and implement school/classroom strategies for achieving equitable access to technology resources for all students and teachers.

TF-VII Procedures, Policies, Planning, and Budgeting for Technology Environments
Educational technology facilitators promote the development and implementation of technology infrastructure, procedures, policies, plans, and budgets for PK-12 schools. Educational technology facilitators:

A. Use the school technology facilities and resources to implement classroom instruction. Candidates:
1. use plans to configure software/computer/technology systems and related peripherals in laboratory, classroom cluster, and other appropriate instructional arrangements.
2. use local mass storage devices and media to store and retrieve information and resources.
3. discuss issues related to selecting, installing, and maintaining wide area networks (WAN) for school districts.
4. model integration of software used in classroom and administrative settings including productivity tools, information access/telecommunications tools, multimedia/hypermedia tools, school management tools, evaluation/portfolio tools, and computer-based instruction.
5. utilize methods of installation, maintenance, inventory, and management of software libraries.
6. use and apply strategies for troubleshooting and maintaining various hardware/software configurations found in school settings.
7. use network software packages to operate a computer network system.
8. work with technology support personnel to maximize the use of technology resources by administrators, teachers, and students to improve student learning.
B. Follow procedures and guidelines used in planning and purchasing technology resources. Candidates:
1. identify instructional software to support and enhance the school curriculum and develop recommendations for purchase.
2. discuss and apply guidelines for budget planning and management procedures related to educational computing and technology facilities and resources.
3. discuss and apply procedures related to troubleshooting and preventative maintenance of technology infrastructure.
4. apply current information involving facilities planning issues and computer-related technologies.
5. suggest policies and procedures concerning staging, scheduling, and security for managing computers/technology in a variety of school/laboratory/classroom settings.
6. use distance and online learning facilities.
7. describe and identify recommended specifications for purchasing technology systems in school settings.
C. Participate in professional development opportunities related to the management of school facilities, technology resources, and purchases. Candidates:
1. support technology professional development at the building/school level utilizing adult learning theory.

TF-VIII Leadership and Vision
Educational technology facilitators will contribute to the shared vision for campus integration of technology and foster an environment and culture conducive to the realization of the vision. Educational technology facilitators:
A. Use the school technology facilities and resources to implement classroom instruction. Candidates:
1. discuss and evaluate current research in educational technology.
B. Apply strategies for and knowledge of issues related to managing the change process in schools. Candidates:
1. discuss the history of technology use in schools.

C. Apply effective group process skills. Candidates:
1. discuss the rationale for forming school partnerships to support technology integration and examine an existing partnership within a school setting.
D. Lead in the development and evaluation of district technology planning and implementation. Candidates:
1. participate in cooperative group processes and identify the processes that were effective.
2. conduct an evaluation of a school technology environment.
3. identify and discuss national, state, and local standards for integrating technology in a school environment.
4. describe curriculum activities or performances that meet national, state, and local technology standards.
5. discuss issues related to developing a school technology plan.
6. discuss the elements of and strategies for developing a technology strategic plan.
7. examine issues related to hardware and software acquisition and management.
E. Engage in supervised field-based experiences with accomplished technology facilitators and/or directors. Candidates:
1. examine components needed for effective field-based experiences in instructional program development, professional development, facility and resource management, WAN/LAN/wireless systems, or managing change related to technology use in school-based settings.

APPENDIX B

ALA/AASL Standards for Initial Preparation of School Librarians (2010)

Approved by Specialty Areas Studies Board (SASB) of the National Council for Accreditation of Teacher Education (NCATE), October 24, 2010

Standard 1: Teaching for Learning

Candidates are effective teachers who demonstrate knowledge of learners and learning and who model and promote collaborative planning, instruction in multiple literacies, and inquiry-based learning, enabling members of the learning community to become effective users and creators of ideas and information. Candidates design and implement instruction that engages students' interests and develops their ability to inquire, think critically, gain and share knowledge.

Elements

1.1 Knowledge of learners and learning Candidates are knowledgeable of learning styles, stages of human growth and development, and cultural influences on learning. Candidates assess learner needs and design instruction that reflects educational best practice. Candidates support the learning of all students and other members of the learning community, including those with diverse learning styles, physical and intellectual abilities and needs. Candidates base twenty-first century skills instruction on student interests and learning needs and link it to the assessment of student achievement.

1.2 Effective and knowledgeable teacher Candidates implement the principles of effective teaching and learning that contribute to an active, inquiry-based approach to learning. Candidates make use of a variety of instructional strategies and assessment tools to design and develop digital-age learning experiences and assessments in partnership with classroom teachers and other educators. Candidates can document and communicate the impact of collaborative instruction on student achievement.

1.3 Instructional partner Candidates model, share, and promote effective principles of teaching and learning as collaborative partners with other educators. Candidates acknowledge the importance of participating in curriculum development, of engaging in school improvement processes, and of offering professional development to other educators as it relates to library and information use.

1.4 Integration of twenty-first century skills and learning standards Candidates advocate for twenty-first century literacy skills to support the learning needs of the school community. Candidates demonstrate how to collaborate with other teachers to plan and implement instruction of the AASL *Standards for the 21st-Century Learner* and state student curriculum standards. Candidates employ strategies to integrate multiple literacies with content curriculum. Candidates integrate the use of emerging technologies as a means for effective and creative teaching and to support P-12 students' conceptual

understanding, critical thinking and creative processes.

Target
Multiple assessments provide evidence that candidates are able to:
- Model and promote a knowledge of learners and learning by designing and delivering inquiry-based information literacy instruction that enhances the information, media, visual and technical literacies of P-12 students;
- Integrate emerging technologies into a variety of instructional strategies to support the diverse learning styles, interests, and ability of all students to inquire, think critically, and gain and create knowledge;
- Collaborate with educators and other stakeholders in professional development activities involving curriculum development and school improvement processes in support of student achievement.

Acceptable
At least one assessment provides evidence that candidates are able to:
- Demonstrate a knowledge of learners and learning by collaborating with other educators to design instruction that supports the learning styles, needs, interests and abilities of all students;
- Deliver instruction and develop assessments that make use of a variety of instructional strategies and information resources to develop and enhance the multiple literacies of P-12 students;
- Gain an awareness of and participate in professional learning activities related to library and information use to ensure all members of the learning community become effective users of ideas and information;
- Integrate emerging technologies into instruction that reinforce the skills, dispositions, responsibilities, and self assessments in *AASL Standards for the 21st Century Learner* and state standards that support student achievement.

Unacceptable
Assessments provide little or no evidence that candidates are able to:
- Demonstrate an understanding of learners and learning or of instructional strategies and resources that support the AASL *Standards for the 21st-Century Learner*;
- Collaborate with other professionals in support of curriculum and/or professional development.

Research in support of Standard 1

Standard 1 focuses on the school librarian candidate's ability to promote inquiry-based learning, instruction in multiple literacies, and to model effective, differentiated teaching that meets the needs of a diverse learning community. Differentiating instruction is a challenge and therefore important for school librarians, since they interact with all students, often for more than one year. Kachka (2009) commented that school librarians face the unique challenge of differentiating instruction for all students in the school no matter the culture or ability. Mestre (2009) concurred when stating that school librarians are charged with meeting the literacy needs of students with a wide variety of cultures and abilities.

Candidates need to implement an inquiry-based approach to learning. Chu's (2009) study documented that the use of inquiry project-based learning involving collaboration between the classroom teachers in general studies, language and information technology resulted in higher grades on projects and improved learning. Hoover (2006) discussed the fact that school librarians have four primary responsibilities: teacher, instructional partner, information specialist, and program administrator. Through a meta-analysis that identified effective instructional strategies, classroom management strategies and school leadership responsibilities, researchers at the Mid-Continent Research for Education and Learning (McREL) found that school librarians need to be as familiar with effective instructional strategies (Marzano, Pickering, & Pollock, 2001) as classroom teachers.

Collaboration has long been the mantra of school librarian education and continues to be a challenge for candidates. Bell and Kuon (2009) discussed teaching collaboration when instructing students online. They discovered the importance of collaboration even when alone with a computer terminal. Kuhlthau, Maniotes and Caspari (2007) presented the argument for recasting Guided Inquiry as a dynamic innovative way of developing information literacy. The authors discussed the collaborative responsibilities of the members of the instructional team. Stripling (2008) emphasized that even though inquiry-based instruction consumes more time, school librarians need to take a leadership role in fostering inquiry through effective communication with the learning community.

In short, information retrieval, information communication, and information design are constantly changing (Warlick, 2009). School librarian candidates must embrace twenty-first century standards and tools. As the Internet continues to evolve to a more dynamic, social environment, the school librarian must use social networking tools not only to discuss issues and form partnerships with administrators and classroom teachers (Lamb & Johnson, 2008) but also to impact teaching and learning (Naslund & Giustini, 2008). Using blogs, wikis and social networking in instruction engages students while teaching them to inquire and think critically while sharing information.

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Standard 2: Literacy and Reading

Candidates promote reading for learning, personal growth, and enjoyment. Candidates are aware of major trends in children's and young adult literature and select reading materials in multiple formats to support reading for information, reading for pleasure, and reading for lifelong learning. Candidates use a variety of strategies to reinforce classroom reading instruction to address the diverse needs and interests of all readers.

Elements

2.1 Literature

Candidates are familiar with a wide range of children's, young adult, and professional literature in multiple formats and languages to support reading for information, reading for pleasure, and reading for lifelong learning.

2.2 Reading promotion

Candidates use a variety of strategies to promote leisure reading and model personal enjoyment of reading in order to promote habits of creative expression and lifelong reading.

2.3 Respect for diversity

Candidates demonstrate the ability to develop a collection of reading and information materials in print and digital formats that support the diverse developmental, cultural, social, and linguistic needs of P-12 students and their communities.

2.4 Literacy strategies

Candidates collaborate with classroom teachers to reinforce a wide variety of reading instructional strategies to ensure P-12 students are able to create meaning from text.

Standard 2 Rubric

Target

Multiple assessments provide evidence that candidates are able to:

- Promote reading for children, young adults and other education professionals through the use of high-quality and high-interest literature in print and digital formats that reflect the diverse developmental, cultural, social and linguistic needs of their P-12 students and communities;
- Use authentic and engaging instructional strategies that reinforce classroom reading instruction in support of lifelong learning and to build an appreciation for literature in support of personal and creative pursuits of P-12 students and other members of the school community.

Acceptable

At least one assessment provides evidence that candidates are able to:

- Promote reading through a wide range of reading materials in multiple formats for both children and young adults that encourage reading for information, pleasure and life-long learning;
- Collaborate with other educators to reinforce classroom reading instruction through the use of a variety of reading strategies that enhance P-12 students' ability to create meaning from text;
- Develop a collection of reading resources that promotes reading for enjoyment and meets the diverse information needs and interests of all readers.

Unacceptable
Assessments provide little or no evidence that candidates are able to:
- Promote or support reading through the use of literature;
- Direct reading instruction or collection development that meets the needs of all readers.

Research in support of Standard 2

As foundational skills for twenty-first century learning, literacy and reading are focal points for school librarians. Krashen (2004) presented a body of research to support the act of reading itself as the primary means of developing reading skills and literacy. Free voluntary reading, the most effective means for developing literacy, requires access to a wide variety of reading materials in multiple formats (Krashen, 2004). As part of the school librarian's role in reading, the AASL (2009) specified that school librarians must have a "deep knowledge" of high-quality reading materials for children and young adults in multiple formats. Furthermore, the school librarian must provide learners with a variety of high-interest materials for information, pleasure, and personal development as well as professional materials for teachers and staff (AASL, 2009).

In motivating young people to read, Trelease (2006) emphasized the importance of reading as a pleasurable experience and having materials of interest to readers. This supports the need for having diverse and varied collections to meet the wide variety of interests as well as developmental, cultural, social, and linguistic needs of readers. Lance et al. (2005) found that the currency of reading materials was as important as the size and variety of library collections. Those libraries with more current materials were associated with increased reading levels in students.

The presence of a trained school library professional is a powerful influence in promoting, guiding, and inspiring young readers toward a love of reading and a quest for lifelong learning (Klinger, 2006). AASL (2009) directed school librarians to read aloud to students and provide booktalks as methods of reading promotion as part of their role in reading. The Commission on Reading from the U.S. Department of Education identified "the single most important activity for building the knowledge required for eventual success in reading is reading aloud to children," a practice to be continued throughout all grades (Anderson et al. 1985). Furthermore, research suggests that direct encouragement to read may have an impact on the amount of reading done. Morrow (1982) and Shin (2004) found that encouraging children to read was a positive factor in promoting reading if available reading material is interesting and comprehensible.

As important as direct encouragement, modeling reading both formally and informally sends positive messages to readers. Trelease (2006) identified one factor in motivating readers is having significant others who model reading. Several studies indicated that children read more when they see other people reading (Krashen, 2004). Overall, many students view the school library as helping them with their reading interests, finding stories, improving reading, and helping them enjoy reading more (Todd, 2005).

The school librarian also plays a significant role in developing reading skills and comprehension in students. School libraries are most appropriate for reading and reinforcing the reading process when the school librarian collaborates with classroom teachers and other specialists. Several studies found that students' reading skills improve when school librarians collaborate with classroom teachers for reading instruction (Lance et al., 1993; Lance et al., 2000; Roscello and Webster, 2002).

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Standard 3: Information and Knowledge

Candidates model and promote ethical, equitable access to and use of physical, digital, and virtual collections of resources. Candidates demonstrate knowledge of a variety of information sources and services that support the needs of the diverse learning community. Candidates demonstrate the use of a variety of research strategies to generate knowledge to improve practice.

Elements

3.1 Efficient and ethical information-seeking behavior

Candidates identify and provide support for diverse student information needs. Candidates model multiple strategies for students, other teachers, and administrators to locate, evaluate, and ethically use information for specific purposes. Candidates collaborate with students, other teachers, and administrators to efficiently access, interpret, and communicate information.

3.2 Access to information

Candidates support flexible, open access for library services. Candidates demonstrate their ability to develop solutions for addressing physical, social and intellectual barriers to equitable access to resources and services. Candidates facilitate access to information in print, non-print, and digital formats. Candidates model and communicate the legal and

ethical codes of the profession.

3.3 Information technology

Candidates demonstrate their ability to design and adapt relevant learning experiences that engage students in authentic learning through the use of digital tools and resources. Candidates model and facilitate the effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research, learning, creating, and communicating in a digital society.

3.4 Research and knowledge creation

Candidates use evidence-based, action research to collect data. Candidates interpret and use data to create and share new knowledge to improve practice in school libraries.

Standard 3 Rubric

Target

Multiple assessments provide evidence that candidates are able to:

- Ensure open and equitable access to information by collaborating with all members of the school community to develop solutions to physical, social and intellectual barriers to resources and services in school libraries;
- Model and promote efficient and ethical information seeking behaviors through the design and delivery of authentic and relevant learning experiences for P-12 students, teachers and administrators in professional learning communities;
- Enhance access to information for P-12 students and other members of their schools and communities through the use of current and emerging technologies that support the access, interpretation and communication of information;
- Use a variety of research strategies to create new knowledge and improve practice in school libraries.

Acceptable

At least one assessment provides evidence that candidates are able to:

- Implement flexible and equitable access to print and digital information resources by diverse members of the school community by reducing barriers to resources and services;
- Collaborate with other educators to design and deliver instruction that enhances P-12 students' ability to ethically and efficiently access, evaluate and use information;
- Integrate current and emerging technologies into instruction in support of inquiry, learning, creating and communicating information in a digital society;
- Use evidence-based practice methods to collect, interpret and use data from research to improve practice in school libraries.

Unacceptable

Assessments provide little or no evidence that candidates are able to:

- Design services or instruction that supports equitable access to information in an efficient and ethical manner by P-12 students and other members of their school and community.

Research in support of Standard 3

Standard 3 focuses on the school librarian candidate's ability to promote ethical, equitable access to and use of physical, digital, and virtual collections of resources. Boelens (2007) believed that the school librarian must be able to "…manage a place in the school with facilities (traditional, virtual and digital) that provide teachers and pupils with access to new kinds of information…" (p. 67). Thus, for school librarians, the importance of meeting the challenge of promoting traditional resources as well as modeling and promoting new methods of information delivery is paramount.

Although school librarians have always been faced with the challenge of providing equitable access for diverse student needs, today's challenge is daunting (Simpson, 2003). Lack of access to new information tools creates not only a digital divide (Haycock & Sheldon, 2008) but also an information divide. School librarians must work hard to remove any and all intellectual, physical and economic barriers to information for all students, teachers and other stakeholders in their learning environments. Through evidence-based action research, school librarians can promote and share the knowledge of the importance of equal access (Martin & Tallman, 2001; Howard & Eckhardt, 2006).

School librarians also need to identify and provide support for diverse student information needs. It is impossible to meet this need in isolation. The school librarian must be capable of collaborating with teachers in order to provide for the needs of all students. Hoover (2006) described strategies to engage students in cooperative learning while collaborating with classroom teachers. Kuhlthau, Maniotes, and Caspari (2007) described Guided Inquiry as an "integrated unity of inquiry, planned and guided by and instructional team of a school librarian and teachers" (p. 1). Without the integration and collaboration, the needs of diverse students are not met.

Social networking, blogs, wikis, instant messaging, texting as well as the Internet provide immense amounts of information quickly. Research shows that students are not experienced researchers (Scott & O'Sullivan, 2005). Kuhlthau, Maniotes, and Caspari (2007) described a process that integrates curriculum and information literacy concepts, which creates relevant learning. Information literacy skills are imperative if we expect students to be able to evaluate the immense amounts of information with which they are being bombarded through these various media. Hamilton (2007) stated, "We are at a critical moment in our profession, and we need to seize this moment to collaborate with our learning communities as leaders in interpreting and teaching information literacy" (p. 52).

With any research assignment, ethical research and documentation must be included. Many students not only lack research skills, they see nothing wrong with plagiarism (Johnson, 2003). Butler (2007) also emphasized the importance of teaching the ethical uses of copyright. However, Johnson (2003) made the point that in order to teach ethical research methods, school librarians need to prod teachers to move beyond the basic research paper. School librarians need to emphasize solving a problem using the information gained. Armed with these skills, our students will have the information literacy skills to compete in the twenty-first century.

Additionally, school librarians must work to gather evidence in order to improve practice and increase the effectiveness of their programs. According to Todd (2003), school librarians must document how their programs and services impact student learning. Todd asserts that "…gathered evidence highlights how the librarian plays a crucial role in boosting student achievement, in shaping important attitudes and values, in contributing to the development of self-esteem, and in creating a more effective learning environment" (p. 54). Geitgey and Tepe (2007) emphasize the importance of collecting and presenting data, noting that, by developing evidence-based practice, school librarians can work toward "continuous improvement in library services" (p. 10).

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Standard 4: Advocacy and Leadership

Candidates advocate for dynamic school library programs and positive learning environments that focus on student learning and achievement by collaborating and connecting with teachers, administrators, librarians, and the community. Candidates are committed to continuous learning and professional growth and lead professional development activities for other educators. Candidates provide leadership by articulating ways in which school libraries contribute to student achievement.

Elements

4.1. Networking with the library community

Candidates demonstrate the ability to establish connections with other libraries and to strengthen cooperation among library colleagues for resource sharing, networking, and facilitating access to information. Candidates participate and collaborate as members of a social and intellectual network of learners.

4.2 Professional development

Candidates model a strong commitment to the profession by participating in professional growth and leadership opportunities through membership in library associations, attendance at professional conferences, reading professional publications, and exploring Internet resources. Candidates plan for ongoing professional growth.

4.3 Leadership

Candidates are able to articulate the role and relationship of the school library program's impact on student academic achievement within the context of current educational initiatives. Utilizing evidence-based practice and information from education and library research, candidates communicate ways in which the library program can enhance school improvement efforts.

4.4 Advocacy

Candidates identify stakeholders within and outside the school community who impact

the school library program. Candidates develop a plan to advocate for school library and information programs, resources, and services.

Standard 4 Rubric

Target
Multiple assessments provide evidence that candidates are able to:
- Advocate for strong school library programs by designing and leading professional development opportunities that clearly articulate the impact of a school library program's resources, services and programming on student academic achievement;
- Become active contributors in education and information professional organizations and use publications, conferences, and virtual professional development experiences and opportunities to engage in social and intellectual networks that address best practice in school libraries;
- Use research and other evidence-based data and information to contribute to and lead school improvement and professional development initiatives.

Acceptable
At least one assessment provides evidence that candidates are able to:
- Advocate for dynamic school library programs and build positive learning environments by articulating the role of the school library program's impact on student achievement;
- Develop professional development activities that enhance the awareness of school library programs, resources and services for students, other educators and community stakeholders;
- Network with school librarians, other information professionals, and agencies to establish cooperative initiatives that encourage resource sharing and access to information;
- Articulate the value of professional organizations and develop plan for ongoing professional growth.

Unacceptable
Assessments provide little or no evidence that candidates are able to:
- Positively and productively direct or advocate for a school library program within their school and community.

Research in support of Standard 4

Wrapping school library advocacy efforts around students and learning is a natural connection (Logan, 2008). According to Logan, study after study showed that school libraries are the means to achieving educational goals common to good schools. Using evidence-based practice, school library professionals have a solid foundation on which to build to encourage decision-makers to enhance and improve school libraries for the benefit of students.

Access to other professionals, new ideas, and tools to fulfill professional responsibilities is necessary to the school librarian's professional growth. Participation in these activities enhances opportunities for their students and fellow teachers. The school library personnel may have to educate prospective partners in a collaborative effort of improving the library program for the benefit of the students. Bush (2007) stated that we do "good work in all the right places and tend to keep it to ourselves" (p. 41). Part of advocacy is letting other members of the school community know how the library and librarians benefit the students, socially as well as academically. Collaboration and networking with others in the library's community strengthens all of the stakeholders. Hartzell (1999) said that "library advocacy is essential to library effectiveness--essential even to library survival in some places" (p. 8).

According to Hand (2008), "Constant advocacy for integration of library and information resources in classroom plans must remain a core focus for all of us school library professionals" (p. 27). Morris (2004) emphasized "the best way to reach teachers is to give them the personalized attention and professional concern that will aid them in preparing, organizing, and presenting instructional programs...providing the collaborative support that will help them to become better teachers" (p. 127). The *Library Advocate's Handbook* (American Library Association, 2006) gives invaluable support to library advocates and emphasizes tools of collaboration to be used in this effort.

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Standard 5: Program Management and Administration

Candidates plan, develop, implement, and evaluate school library programs, resources, and services in support of the mission of the library program within the school according to the ethics and principles of library science, education, management, and administration.

Elements

5.1 Collections

Candidates evaluate and select print, non-print, and digital resources using professional selection tools and evaluation criteria to develop and manage a quality collection designed to meet the diverse curricular, personal, and professional needs of students, teachers, and administrators. Candidates organize school library collections according to current library cataloging and classification principles and standards.

5.2 Professional Ethics

Candidates practice the ethical principles of their profession, advocate for intellectual freedom and privacy, and promote and model digital citizenship and responsibility. Candidates educate the school community on the ethical use of information and ideas.

5.3 Personnel, Funding, and Facilities

Candidates apply best practices related to planning, budgeting, and evaluating human, information, and physical resources. Candidates organize library facilities to enhance the use of information resources and services and to ensure equitable access to all resources for all users. Candidates develop, implement, and evaluate policies and procedures that support teaching and learning in school libraries.

5.4 Strategic Planning and Assessment

Candidates communicate and collaborate with students, teachers, administrators, and community members to develop a library program that aligns resources, services, and standards with the school's mission. Candidates make effective use of data and information to assess how the library program addresses the needs of their diverse communities.

Standard 5 Rubric

Target

Multiple assessments provide evidence that candidates are able to:

- Design, direct, and promote strong school library programs with resources, services, policies, procedures, and programming that are clearly aligned with the school's mission and that supports the ethical principles and current standards of their profession;
- Articulate and model the responsibilities of digital citizenship regarding intellectual freedom, intellectual property, and the right to privacy;

- Provide access to print, non-print and digital collections that support and enhance instruction and reflect the needs and interests of their diverse P-12 students, school and community;
- Manage, organize and evaluate school library physical resources (facilities), fiscal resources (budgets), and human resources (personnel) to ensure the school library program recognizes, celebrates and advocates for the curricular, personal and professional needs of all stakeholders.

Acceptable
At least one assessment provides evidence that candidates are able to:
- Evaluate, manage and organize school library print, non-print and digital collections to support the school's mission of teaching and learning;
- Base professional and program decisions on current standards and the ethical codes and principles of education and information professions;
- Develop, manage and organize library collections, policies and procedures to ensure open access to school library resources and services;
- Use data and information to evaluate and communicate how the school library program meets the needs of diverse P-12 student communities.

Unacceptable
Assessments provide little or no evidence that candidates are able to:
- Manage resources, services and programming in support of the diverse needs of P-12 students;
- Acknowledge and understand the ethical principles and standards of their profession.

Research in support of Standard 5

In *Empowering learners: Guidelines for school library programs*, the American Association of School Librarians (2009) produced a set of guidelines based on the belief that the "school library media program must focus on building a flexible learning environment" as well as "empower students to be critical thinkers, enthusiastic readers, skillful researchers, and ethical users of information" (p. 5). Standard 5 focuses on the candidate skills to build the learning environment while utilizing leadership and management skills in an organizational setting.

Teaching and modeling ethical behavior for students involves research and continuing interaction with faculty, as noted in Lincoln (2009). Electronic access to information has resulted in many concerns among the education community. School librarians lead the way in promoting intellectual property rights among information users.

In building the physical learning environment, the school librarian develops policies and procedures related to planning, budgeting, and evaluating human, information and physical resources. Rosenfeld and Loertscher (2007) suggested that "the school library exists beyond its four walls and provides real and virtual access to appropriate, highquality resources on a 24 hours-per-day/7 days a week basis" (p. vii). Johnson (2003) noted that the library must be both "high-tech" and "high-touch" so that users find the information they need in an environment that is welcoming (p. 387). Woolls (2004) espoused the belief that school librarians need not be

satisfied with just any space they are given, but they need to know that "assessing library media facilities in order to improve them" is an important part of the learning environment (p. 117). This leads to strategic planning and assessment. Neelameghan (2007) looked at the impact of a quality library program and student achievement considering the management of the library resources. Through planning and assessment of the library program, student learning can be facilitated.

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APPENDIX C

Nationally Recognized AECT Educational Technology Programs Per Accredited Institutions

Arkansas
Educational Technology Specialist (AECT) in Arkansas

Arkansas Tech University, AR
Instructional Technology
Specialized Professional Association (SPA): AECT
Grade: -
Degree: Master's
Level: ITP

School Library Media Specialist
Specialized Professional Association (SPA): AECT
Degree: Master's
Level: ADV

California
Educational Technology Specialist (AECT) in California

San Diego State University, CA
Educational Technology
Specialized Professional Association (SPA): AECT
Grade: NA
Degree: Master's
Level: ADV

San José State University, CA
Instructional Technology
Specialized Professional Association (SPA): AECT
Grade: MA
Degree: Master's
Level: ADV

Colorado
Educational Technology Specialist (AECT) in Colorado

University of Colorado Denver, CO
Information and Learning Technologies
Specialized Professional Association (SPA): AECT
Grade: P-12
Degree: Master's
Level: ADV

University of Northern Colorado, CO
Education Technology MA Advanced
Specialized Professional Association (SPA): AECT
Grade: P-12
Degree: Master's
Level: ADV

Education Technology Ph.D Advanced
Specialized Professional Association (SPA): AECT
Grade: P-12
Degree: Doctorate
Level: ADV

Connecticut
Educational Technology Specialist (AECT) in Connecticut

The University of Hartford, CT
Ed. Tech – Advanced
Specialized Professional Association (SPA): AECT
Grade: NA
Degree: Master's
Level: ADV

Delaware
Educational Technology Specialist (AECT) in Delaware

University of Delaware, DE
Educational Technology (AECT)
Specialized Professional Association (SPA): AECT
Grade: K-20
Degree: Master's
Level: ADV

Georgia
Educational Technology Specialist (AECT) in Georgia

The University of Georgia, GA
Instructional Technology
Specialized Professional Association (SPA): AECT
Grade: -
Degree: Master's
Level: ADV

Instructional Technology
Specialized Professional Association (SPA): AECT
Grade: -
Degree: Specialist or C.A.S.
Level: ADV

Valdosta State University, GA
Instructional Technology - Advanced Specialist (AECT)
Specialized Professional Association (SPA): AECT
Grade: -
Degree: Specialist or C.A.S.
Level: ADV

Hawaii
Educational Technology Specialist (AECT) in Hawaii

University of Hawaii at Manoa, HI
Educational Technology, MEd
Specialized Professional Association (SPA): AECT
Grade: K - 12
Degree: Master's
Level: ADV

Illinois
Educational Technology Specialist (AECT) in Illinois

Northern Illinois University, IL
Instructional Technology
Specialized Professional Association (SPA): AECT
Grade: NA
Degree: Master's
Level: ADV

Missouri
Educational Technology Specialist (AECT) in Missouri

University of Central Missouri, MO
Educational Technology
Specialized Professional Association (SPA): AECT
Grade: K-20
Degree: Master's
Level: ADV

North Carolina
Educational Technology Specialist (AECT) in North Carolina

University of North Carolina at Charlotte, NC
Instructional Systems Technology (Masters Degree)
Specialized Professional Association (SPA): AECT
Grade: P-12
Degree: Master's
Level: ADV

New Jersey
Educational Technology Specialist (AECT) in New Jersey

Seton Hall University, NJ
School Library Media Specialist
Specialized Professional Association (SPA): AECT
Grade: NA
Degree: Master's
Level: ADV

Instructional Design and Technology
Specialized Professional Association (SPA): AECT
Grade: NA
Degree: Master's
Level: ADV

New York
Educational Technology Specialist (AECT) in New York

New York Institute of Technology, NY
Instructional Technology
Specialized Professional Association (SPA): AECT
Grade: P-12
Degree: Master's
Level: ADV

State University of New York at Potsdam, NY
Ed Tech Specialist
Specialized Professional Association (SPA): AECT
Grade: P-12
Degree: Master's
Level: ADV

The College of Saint Rose, NY
Graduate - Educational Technology Specialist, Grades P-12
Specialized Professional Association (SPA): AECT
Grade: P-12
Degree: Master's
Level: ADV

Pennsylvania
Educational Technology Specialist (AECT) in Pennsylvania

Duquesne University, PA
Instructional Technology
Specialized Professional Association (SPA): AECT
Grade: P-12
Degree: Master's
Level: ADV

East Stroudsburg University, PA
Instructional Technology
Specialized Professional Association (SPA): AECT
Grade: -
Degree: Master's
Level: ADV

Instructional Technology
Specialized Professional Association (SPA): AECT
Grade: -
Degree: Endorsement only
Level: ADV

Indiana University of Pennsylvania, PA
Education and Communications Technology
Specialized Professional Association (SPA): AECT
Grade: 0
Degree: Master's
Level: ADV

South Carolina
Educational Technology Specialist (AECT) in South Carolina

University of South Carolina, SC
Educational Technology (MEd)
Specialized Professional Association (SPA): AECT
Grade: K-20
Degree: Master's
Level: ADV

University of South Carolina-Aiken, SC
Educational Technology (MEd)
Specialized Professional Association (SPA): AECT
Grade: K - 20
Degree: Master's
Level: ADV

Utah
Educational Technology Specialist (AECT) in Utah

Brigham Young University, UT
Instructional Psychology & Technology
Specialized Professional Association (SPA): AECT
Degree: Master's
Level: ADV

Instructional Psychology & Technology
Specialized Professional Association (SPA): AECT
Degree: Doctorate
Level: ADV

Virginia
Educational Technology Specialist (AECT) in Virginia

Virginia Polytechnic Institute & State University, VA
Educational Communication and Technology
Specialized Professional Association (SPA): AECT
Grade: 0
Degree: Specialist or C.A.S.
Level: ADV

Educational Communication and Technology
Specialized Professional Association (SPA): AECT
Grade: 0
Degree: Doctorate
Level: ADV

Educational Communication and Technology
Specialized Professional Association (SPA): AECT
Grade: 0
Degree: Master's
Level: ADV

Virginia State University, VA
Educational Technology
Specialized Professional Association (SPA): AECT
Grade: -
Degree: Master's
Level: ADV

APPENDIX D

Nationally Recognized ISTE Technology Facilitation and Leadership Programs
Per Accredited Institutions

Technology Facilitation

Arizona
Technology Facilitator Teachers (ISTE) in Arizona

Northern Arizona University, AZ
Educational Technology - Technology Facilitator
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Post Baccalaureate
Level: ADV

Colorado
Technology Facilitator Teachers (ISTE) in Colorado

Jones International University, CO
M.Ed. in P-12 Instructional Technology for Licensed Educators
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

Illinois
Technology Facilitator Teachers (ISTE) in Illinois

National-Louis University, IL
Technology Facilitation
Specialized Professional Association (SPA): ISTE
Grade: -
Degree: Endorsement only
Level: ITP

Northern Illinois University, IL
Technology Specialist
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

Indiana
Technology Facilitator Teachers (ISTE) in Indiana

Ball State University, IN
Technology Facilitator
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Baccalaureate
Level: ADV

Louisiana
Technology Facilitator Teachers (ISTE) in Louisiana

Louisiana Tech University, LA
Technology Facilitator
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Endorsement only
Level: ADV

Southeastern Louisiana University, LA
Technology Facilitator Advanced
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Master's
Level: ADV

University of Louisiana at Monroe, LA
Technology Facilitator
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

Massachusetts
Technology Facilitator Teachers (ISTE) in Massachusetts

Salem State College, MA
Technology Facilitation
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Master's
Level: ADV

Maryland
Technology Facilitator Teachers (ISTE) in Maryland

Mount St. Mary's University, MD
Technology Facilitation
Specialized Professional Association (SPA): ISTE
Grade: MA
Level: ITP

Michigan
Technology Facilitator Teachers (ISTE) in Michigan

Eastern Michigan University, MI
Educational Media and Technology (TF)
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

New Jersey
Technology Facilitator Teachers (ISTE) in New Jersey

New Jersey City University, NJ
Technology Facilitation - Endorsement Program
Specialized Professional Association (SPA): ISTE
Grade: 0
Degree: Master's
Level: ADV

New York
Technology Facilitator Teachers (ISTE) in New York

Iona College - New Rochelle, NY
MS Ed Educational Technology
Specialized Professional Association (SPA): ISTE
Grade: MS Ed
Degree: Master's
Level: ADV

Pace University, NY
Education Technology Post Bac and MSED
Specialized Professional Association (SPA): ISTE
Grade: P - 12
Degree: Master's
Level: ADV

Educational Technology (Post-Bac— Certificate of Advanced Graduate Study)
Specialized Professional Association (SPA): ISTE
Grade: P - 12
Degree: Post Baccalaureate
Level: ADV

Teachers College Columbia University, NY
Technology Specialist
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

The College of Saint Rose, NY
Graduate- Educational Technology Specialist, Grades P-12
Specialized Professional Association (SPA): ISTE
Grade: P-12
Level: ADV

Ohio
Technology Facilitator Teachers (ISTE) in Ohio

Ashland University, OH
Technology Facilitator
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

Baldwin-Wallace College, OH
Educational Technology Facilitation
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Endorsement only
Level: ADV

Technology Facilitation
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Master's
Level: ADV

Cleveland State University, OH
Educational Technology Facilitator - Initial Endorsement
Specialized Professional Association (SPA): ISTE

Grade: PK - 12
Degree: Master's
Level: ADV

Kent State University, OH
Technology Facilitator
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Master's
Level: ADV

Mount Vernon Nazarene University, OH
Technology Facilitator Graduate
Specialized Professional Association (SPA): ISTE
Grade: PK - 1
Degree: Master's
Level: ADV

Notre Dame College of Ohio, OH
Technology Endorsement
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

The University of Dayton, OH
Endorsement Computer/Technology
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Master's
Level: ADV

University of Akron, OH
Technology Facilitation Endorsement
Specialized Professional Association (SPA): ISTE
Grade: K - 12`
Degree: Master's
Level: ADV

Youngstown State University, OH
Technology Facilitator
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

Pennsylvania
Technology Facilitator Teachers (ISTE) in Pennsylvania

Widener University, PA
Instructional Technology Facilitator
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Post Baccalaureate
Level: ITP

Texas
Technology Facilitator Teachers (ISTE) in Texas

Midwestern State University, TX
Educational Technology (M.Ed)
Specialized Professional Association (SPA): ISTE
Grade: EC-12
Degree: Master's
Level: ADV

University of Houston, TX
Technology Facilitator
Specialized Professional Association (SPA): ISTE
Grade: -
Degree: Master's
Level: ITP

University of Houston-Clear Lake, TX
Educational Technology
Specialized Professional Association (SPA): ISTE
Grade: -
Degree: Master's
Level: ADV

Technology Leadership

Alaska
Technology Leaders (ISTE) in Alaska

University of Alaska Southeast, AK
Educational Technology
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

Arizona
Technology Leaders (ISTE) in Arizona

Northern Arizona University, AZ
Educational Technology- Technology Leader
Specialized Professional Association (SPA): ISTE
Grade: NA
Degree: Master's
Level: ADV

Florida
Technology Leaders (ISTE) in Florida

University of South Florida, FL
Educational Computing and Technology Leadership
Specialized Professional Association (SPA): ISTE
Grade: -
Degree: Master's
Level: ADV

Louisiana
Technology Leaders (ISTE) in Louisiana
McNeese State University, LA
Educational Technology Leadership
Specialized Professional Association (SPA): ISTE
Grade: PK - 12
Degree: Master's
Level: ADV

Northwestern State University of Louisiana, LA
Educational Technology Leadership
Specialized Professional Association (SPA): ISTE
Grade: PP-12
Degree: Master's
Level: ADV

Southeastern Louisiana University, LA
Technology Leadership
Specialized Professional Association (SPA): ISTE
Grade: MA
Degree: Master's
Level: ITP

University of Louisiana at Monroe, LA
Educational Technology Leader
Specialized Professional Association (SPA): ISTE
Grade: K - 12
Degree: Master's
Level: ADV

Massachusetts
Technology Leaders (ISTE) in Massachusetts

Bridgewater State College, MA
Instructional Technology
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Master's
Level: ADV

Maryland
Technology Leaders (ISTE) in Maryland

Loyola University Maryland, MD
Education Technology
Specialized Professional Association (SPA): ISTE
Grade: -
Degree: Master's
Level: ITP

The Johns Hopkins University, MD
Technology Leadership
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Master's
Level: ITP

Nevada
Technology Leaders (ISTE) in Nevada

University of Nevada, Las Vegas, NV
Educational Computeing and Technology Leadership
Specialized Professional Association (SPA): ISTE
Grade: P-12
Degree: Master's
Level: ADV

APPENDIX E

Nationally Recognized AASL School Librarianship Education Programs

Arkansas

Southern Arkansas University
School of Education
Box 9408
Magnolia, AR 71753
Tel: 870-235-4057
Degree or certificate approved by ALA/AASL: M.Ed. Library Media and Information Specialist

University of Central Arkansas
College of Education
Department of Teaching, Learning, and Technology
Middle Secondary & Instructional Technologies
Mashburn Hall Room 104
201 Donaghey Avenue
Conway, Arkansas 72035
Tel: 501-450-3175
Degree or certificate approved by ALA/AASL: M.Ed. Library Media and Information Technologies

Colorado

University of Colorado at Denver
School of Education
Library Media Program
Campus Box 106
P.O. Box 173364
Denver, CO 80217-3364
Degree or certificate approved by ALA/AASL: M.A. in Information and Learning Technologies - School Library

Connecticut

Fairfield University
Graduate School of Education and Allied Professions
1073 North Benson Road
Fairfield, Connecticut 06824
Phone: 203-254-4000
Degree or certificate approved by ALA/AASL: M.A. in Educational Technology (School Media concentration)

District of Columbia

The Catholic University of America
School of Library and Information Science
Marist Hall, Room 228
Cardinal Station
Washington, DC 20064
Phone: 202-319-5085
Degree or certificate approved by ALA/AASL: MLS, School Library Media Specialist

Delaware

University of Delaware
School of Education
113 Willard Hall
Newark, DE 19716
Phone: 302-831-1584
Degree or certificate approved by ALA/AASL: School Library Media Specialist certification through the Delaware Department of Education

Georgia

University of Georgia
Department of Educational Psychology and Instructional Technology
329 Aderhold
Athens, GA 30602
Phone: 706-542-4110
Degree or certificate approved by ALA/AASL:
M.Ed. in Instructional Technology/School Library Media

Valdosta State University
College of Education
Department of Curriculum, Leadership, and Technology
1500 North Patterson Street, Room 136
Valdosta, Georgia 31698
Phone: 229-333-5927
Degree or certificate approved by ALA/AASL: M.Ed. in Library/Media Technology

Illinois

Northern Illinois University
College of Education
Department of Educational Technology, Research and Assessment
Gabel Hall 208
DeKalb, IL 60115
Phone: 815-753-9339
Degree or certificate approved by ALA/AASL: M.S.Ed. in Instructional Technology with Library Information Specialist Certification or School Library Media Endorsement

Olivet Nazarene University
School of Graduate and Continuing Studies
One University Avenue
Bourbonnais, IL, 60914-2345
Tel: 815-939-5232
Degree or certificate approved by ALA/AASL: M.A. in Education, Library Information Specialist

Kentucky

Western Kentucky University
School of Teacher Education
College of Education and Behavioral Science
328A TPH, 1906 College Heights Blvd. #61030
Bowling Green, KY 42101-1030
Phone: 270-745-5414
Degree or certificate approved by ALA/AASL: Master of Science in Library Media Education

Maryland

McDaniel College
Graduate Program in School Library Media
2 College Hill
Westminister, MD 21157
Phone:410-848-7000
Degree or certificate approved by ALA/AASL: M.S. in School Library Media

Towson University
College of Education
Department of Educational Technology & Literacy
8000 York Road
Towson, MD 21252-0001
Degree or certificate approved by ALA/AASL: M.S. in Information Technology, School Library Media Concentration

Michigan

Grand Valley State University
College of Education
301 West Fulton Street
Grand Rapids, MI 49504-6495
Tel: 616-331-6821
Degree or certificate approved by ALA/AASL: M.Ed. in School Library Media

Missouri

Missouri State University
Department of Library Science
901 South National Ave
Springfield, MO 65804
Phone: 417-836-4529
Degree or certificate approved by ALA/AASL: M.Ed. with School Library Media Specialist Endorsement

University of Central Missouri
Department of Educational Leadership and Human Development
Library Science and Information Services
Lovinger 4101
Warrensburg, MO 64093
Phone: 660-543-4341
Degree or certificate approved by ALA/AASL: M.Ed., School Library Media

Nebraska

University of Nebraska at Omaha
College of Education
6001 Dodge Street
Omaha, NE, 68182-0163
Tel: 402-554-2119
Degree or certificate approved by ALA/AASL: M.S. with School Library Media Endorsement

New Hampshire

Plymouth State University
Office of the Council of Teacher Education
Rounds Hall MSC 38
Plymouth, NH, 03264
Tel: 603-535-2885
Degree or certificate approved by ALA/AASL: M.Ed. in P-12 Education, Library Media Specialist

New Jersey

New Jersey City University
2039 Kennedy Boulevard
Professional Studies Building 303
Jersey City, NJ 07305
Phone: 201-200-2101
Degree or certificate approved by ALA/AASL: M.A. in Educational Technology with an School Library Media Specialist Certification

Rowan University
College of Education
201 Mulica Hill Road
Glassboro, NJ 08028-1701
Phone: 856-256-4759
Degree or certificate approved by ALA/AASL: M.A., School Library Media Specialist

William Paterson University
Educational Media Specialist
College of Education
300 Pompton Road
Wayne, NJ 07470
Phone: 973-720-2140
Degree or certificate approved by ALA/AASL: M.Ed. in Education with School Library Media Specialist Endorsement

North Carolina

East Carolina University
Department of Library Science and Instructional Technology
1103 Joyner Library
Greenville, NC 27858-4353
Phone: 252-328-6803
Degree or certificate approved by ALA/AASL: MLS, Media Coordinator P-12

North Carolina Central University
School Media Coordinator Certification
School of Library and Information Sciences
P.O. Box 19586
Durham, NC 27707
Phone: 919-530-6485
Degree or certificate approved by ALA/AASL: Master of Library Science

University of North Carolina at Greensboro
Department of Library and Information Studies
349 Curry Building, PO Box 26170
Greensboro, NC 27402-6170
Phone: 336-334-3477
Degree or certificate approved by ALA/AASL: Master of Library and Information Studies

Ohio

Wright State University
Library/Media
College of Education and Human Services
3640 Colonel Glenn Hwy.
Dayton, OH 45435-0001
Phone: 937-775-2509
Degree or certificate approved by ALA/AASL: M.Ed. in Library/Media

Oklahoma

East Central University
College of Education
Education 213
Ada, OK 74820
Phone: 580-310-5576
Degree or certificate approved by ALA/AASL: M.Ed. in Library Media; Certificate in Library Media

Northeastern State University
College of Education
717 N. Grand Avenue
Tahlequah, OK 74464
Phone: 918-444-3700
Degree or certificate approved by ALA/AASL: M.S.Ed., Library Media & Information Technology

Oklahoma State University
College of Education
252 Willard
Stillwater, OK 74078
Phone: 405-744-8043
Degree or certificate approved by ALA/AASL: M.S. in Teaching, Learning, and Leadership, School Library Media Specialist emphasis

University of Central Oklahoma
College of Education
Department of Advanced Professional Services
Instructional Media Education
Edmond, OK 73034
Phone: 405-974-5888
Degree or certificate approved by ALA/AASL: Certificate, PreP-12 School Library Media Specialist; M.Ed. in Instructional Media Education - library information option

Pennsylvania

Kutztown University of Pennsylvania
Department of Library Science and Instructional Technology
Rohrbach Library
15200 Kutztown Road, Building 5
Kutztown, PA 19530
Phone: 610-683-4300
Degree or certificate approved by ALA/AASL: Master of Library Science

Mansfield University
School Library and Information Technologies
205 Retan Center
Mansfield University
Mansfield, PA 16933
Phone: 570-662-4626 or 717-816-6995
Degree or certificate approved by ALA/AASL: M.Ed. in School Library and Information Technologies

Rhode Island

University of Rhode Island
School Library Media Specialist
Graduate School of Library and Information Studies
94 West Alumni Avenue, Rodman Hall, Suite 2
Kingston, RI 02881-0815
Phone: 401-874-4654
Degree or certificate approved by ALA/AASL: Master of Library and Information Science

Tennessee

University of Memphis
College of Education
Instruction and Curriculum Leadership
215 Ball Hall
Memphis, TN, 38152
Tel: 901-678-4265
Degree or certificate approved by ALA/AASL: M.S., School Library Media Specialist Program

Trevecca Nazarene University
333 Murfreesboro Road
Nashville, TN 37210
Tel: 615-248-1556
Degree or certificate approved by ALA/AASL: Master of Library and Information Science

Texas

Sam Houston State University
College of Education
P.O.Box 2119
Huntsville, TX 77341-2119
Phone: 936-294-1101
Degree or certificate approved by ALA/AASL: Master of Library Science with School Library Media Specialist Certification

University of Houston at Clear Lake
School of Education
Box 162
2700 Bay Area Blvd.
Houston, TX 77058
Phone: 201-283-3577
Degree or certificate approved by ALA/AASL: MS, Learning Resources Specialist (School Librarian) Certification

Utah

Southern Utah University
Library Media Department
Gerald R. Sherratt Library
351 West Center
Cedar City, UT 84720
Phone: 435-865-7939
Email: graff@suu.edu
Degree or certificate approved by ALA/AASL: M.Ed with School Library Media Endorsement

Virginia

Longwood University
Department of Education and Special Education
201 High Street
Farmville, VA 23909
Phone: 434-395-2434
Degree or certificate approved by ALA/AASL: M.S.Ed. with School Library Media concentration

Old Dominion University
Darden College of Education
Education Building, Room 120 Norfolk, VA
Phone: 757-683-3777
Degree or certificate approved by ALA/AASL: M.Ed., School Librarianship

APPENDIX F

Instructional Technology Specialist Certificate Type and License Name by State

State	Certificate type	License name
Massachusetts	Initial certification	Instructional technology
New Hampshire	Initial certification	Computer technology educator
New York	Initial certification	Education technology specialist
Wisconsin	Initial certification	Instructional technology specialist
Pennsylvania	Initial certification	Instructional technology specialist
	Endorsement	Supervisor of instructional technology
Colorado	Endorsement	Instructional technology
Kentucky	Endorsement	Instructional computer technology
Louisiana	Endorsement	Educational technology facilitation
	Endorsement	Educational technology leadership
Maine	Endorsement	Computer technology teacher
Michigan	Endorsement	Educational technology
Nebraska	Endorsement	Information technology
New Mexico	Endorsement	Information technology coordinators
North Carolina	Endorsement	Instructional technology specialist-computers
	Endorsement	computer coordinator
Ohio	Endorsement	Computer / technology
Utah	Endorsement	Educational technology
Wisconsin	Endorsement	Instructional technology coordinator
Vermont	Endorsement	Educational technology specialist
Virginia	Endorsement	Technology Lead Teachers
Texas	Endorsement	Master technology teacher
Connecticut	Certificate / non-license	Educational Technology
Virginia	Certificate / non -license	Technology lead teacher
Minnesota	Certificate / non-license	Instructional technology
New Jersey	Certificate / non-license	Instructional technology
Pennsylvania	Certificate / non-license	Instructional technology
Delaware	Certificate / non-license	Educational technology
California	Certificate / non-license	Instructional technology
Missouri	Certificate / non-license	Instructional technology
Texas	Certificate / non-license	Instructional technology
Minnesota	Certificate / non-license	Instructional technology

APPENDIX G

The Role of Media Specialists With Respect to Instructional Technology
In an Urban School District in Georgia

The survey is divided into two parts. Part one consists of seven demographic questions and will take approximately 5 minutes to complete. Part two consists of 76 questions divided into eight categories and will take approximately 40 minutes to complete.

Job Competencies are defined as a measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics that an individual needs to perform work roles or occupational functions successfully (U.S. Office of Personnel Management, 2011).

For each competency, select the number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.

For each competency, elect the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist.

Use the following response scale to address each of the items:

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

- Select the number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.
- Select the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist.

Example:

Extent Competency Currently Used					**Competencies**	**Extent Competency Should Ideally be Used**				
1	2	3	4	5	Make use of a variety of software to design student assessments in collaboration with classroom teachers	1	2	3	4	5

Part I:
The following questions are to provide demographic information about you as a media specialist.

1. What is your gender?
    - Male
    - Female
2. What is your age as of your last birthday? (Drop down from 18-88), Other___
3. How many years have you worked as a Media Specialist? (Drop Down from 1-70), Other__
4. What is the highest degree you received?
    - Bachelor's Degree
    - Master's Degree
    - Education Specialist Degree
    - Doctorate (Ph.D. or Ed.D.)
5. The year in which you completed your last degree (1960 – 2011), Other____
6. How many school years you have worked in your current position as a media specialist? (Drop Down 1-70), Other_____
7. What type of school do you currently work in?
    - Elementary school
    - Middle school
    - High school

Part II:
Below you will find a series of statements that represent job competencies used by instructional technology specialists and media specialists. The competencies were obtained from established professional standards.

Category 1 of 8: Collaboration
Use the following response scale to address each of the following items:

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

- Select the number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.
- Select the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist.

Extent Competency Currently Used					**Competencies**	**Extent Competency Should Ideally be Used**				
1	2	3	4	5	1. Make use of a variety of instructional strategies and assessment tools to design and develop digital-age learning experiences and assessments in partnership with classroom teachers and other educators	1	2	3	4	5
1	2	3	4	5	2. Document and communicate the impact of collaborative instruction on student achievement	1	2	3	4	5
1	2	3	4	5	3. Model, share, and promote effective principles of teaching and learning as collaborative partners with other educators	1	2	3	4	5
1	2	3	4	5	4. Collaborate with other teachers to plan and implement instruction of the AASL Standards for the 21st-Century Learner and state student curriculum standards	1	2	3	4	5
1	2	3	4	5	5. Collaborate with classroom teachers to reinforce a wide variety of reading instructional strategies to ensure P-12 students are able to create meaning from text	1	2	3	4	5
1	2	3	4	5	6. Establish connections with other libraries and to strengthen cooperation among library colleagues for resource sharing, networking, and facilitating access to information	1	2	3	4	5
1	2	3	4	5	7. Participate and collaborate as a member of a social and intellectual network of learners	1	2	3	4	5
1	2	3	4	5	8. Identify stakeholders within and	1	2	3	4	5

					outside the school community who impact the school library program					
1	2	3	4	5	9. Use technology to communicate and collaborate with peers, parents, and the larger community to nurture student learning	1	2	3	4	5

Category 2 of 8: Ethics

Use the following response scale to address each of the following items:

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

- Select the number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.
- Select the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist.

Extent Competency Currently Used					**Competencies**	**Extent Competency Should Ideally be Used**				
1	2	3	4	5	10. Practice the ethical principles of the profession, advocate for intellectual freedom and privacy, and promote and model digital citizenship and responsibility	1	2	3	4	5
1	2	3	4	5	11. Educate the school community on the ethical use of information and ideas	1	2	3	4	5
1	2	3	4	5	12. Model and teach legal and ethical practice related to technology use	1	2	3	4	5
1	2	3	4	5	13. Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities	1	2	3	4	5
1	2	3	4	5	14. Identify and use technology resources that affirm diversity	1	2	3	4	5
1	2	3	4	5	15. Promote safe and healthy use of technology resources	1	2	3	4	5
1	2	3	4	5	16. Facilitate equitable access to technology resources for all students	1	2	3	4	5
1	2	3	4	5	17. Model and communicate the legal and ethical codes of the profession	1	2	3	4	5

Category 3 of 8: Information Literacy

Use the following response scale to address each of the following items:

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

- Select the number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.
- Select the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist.

Extent Competency Currently Used					**Competencies**	**Extent Competency Should Ideally be Used**				
1	2	3	4	5	18. Identify and provide support for diverse student information needs	1	2	3	4	5
1	2	3	4	5	19. Model multiple strategies for students, other teachers, and administrators to locate, evaluate, and ethically use information for specific purposes.	1	2	3	4	5
1	2	3	4	5	20. Collaborate with students, other teachers, and administrators to efficiently access, interpret, and communicate information	1	2	3	4	5
1	2	3	4	5	21. Support flexible, open access for library services and demonstrate their ability to develop solutions for addressing physical, social and intellectual barriers to equitable access to resources and services	1	2	3	4	5
1	2	3	4	5	22. Facilitate access to information in print, non-print, and digital formats	1	2	3	4	5
1	2	3	4	5	23. Model and facilitate the effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research, learning, creating, and communicating in a digital society	1	2	3	4	5
1	2	3	4	5	24. Use evidence-based, action research to collect data	1	2	3	4	5
1	2	3	4	5	25. Interpret and use data to create and share new knowledge to improve practice in school libraries	1	2	3	4	5

Category 4 of 8: Instruction and Assessment

Use the following response scale to address each of the following items:

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

- The number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.
- Select the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist.

Extent Competency Currently Used					**Competencies**	**Extent Competency Should Ideally be Used**				
1	2	3	4	5	26. Knowledge of learning styles, stages of human growth and development, and cultural influences on learning	1	2	3	4	5
1	2	3	4	5	27. Assess learner needs and design instruction that reflects educational best practice	1	2	3	4	5
1	2	3	4	5	28. Support the learning of all students and other members of the learning community, including those with diverse learning styles, physical and intellectual abilities and needs	1	2	3	4	5
1	2	3	4	5	29. Base twenty-first century skills instruction on student interests and learning needs and link it to the assessment of student achievement	1	2	3	4	5
1	2	3	4	5	30. Implement the principles of effective teaching and learning that contribute to an active, inquiry-based approach to learning	1	2	3	4	5
1	2	3	4	5	31. Acknowledge the importance of participating in curriculum development, of engaging in school improvement processes, and of offering professional development to other educators as it relates to library and information use	1	2	3	4	5
1	2	3	4	5	32. Employ strategies to integrate multiple literacies with content curriculum	1	2	3	4	5
1	2	3	4	5	33. Integrate the use of emerging technologies as a means for effective and creative teaching and to support P-12 students' conceptual understanding, critical thinking and creative processes	1	2	3	4	5
1	2	3	4	5	34. Design and adapt relevant learning experiences that engage students in authentic learning through the use of digital tools and resources	1	2	3	4	5

1	2	3	4	5	35. Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners	1	2	3	4	5
1	2	3	4	5	36. Apply current research on teaching and learning with technology when planning learning environments and experiences	1	2	3	4	5
1	2	3	4	5	37. Plan strategies to manage student learning in a technology-enhanced environment	1	2	3	4	5
1	2	3	4	5	38. Identify and apply instructional design principals associated with the development of technology resources	1	2	3	4	5
1	2	3	4	5	39. Facilitate technology-enhanced experiences that address content standards and student technology standards	1	2	3	4	5
1	2	3	4	5	40. Use technology to support learner-centered strategies that address the diverse needs of students	1	2	3	4	5
1	2	3	4	5	41. Apply technology to demonstrate students' higher-order skills and creativity	1	2	3	4	5
1	2	3	4	5	42. Manage student learning activities in a technology-enhanced environment	1	2	3	4	5
1	2	3	4	5	43. Use current research and district/regional/state/national content and technology standards to build lessons and units of instruction	1	2	3	4	5
1	2	3	4	5	44. Apply technology in assessing student learning of subject matter using a variety of assessment techniques	1	2	3	4	5
1	2	3	4	5	45. Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning	1	2	3	4	5
1	2	3	4	5	46. Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity	1	2	3	4	5
1	2	3	4	5	47. Use the school technology facilities and resources to implement classroom instruction	1	2	3	4	5

Category 5 of 8: Literacy and Reading

Use the following response scale to address each of the following items:

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

- Select the number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.
- Select the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist

Extent Competency Currently Used					**Competencies**	**Extent Competency Should Ideally be Used**				
1	2	3	4	5	48. Familiar with a wide range of children's, young adult, and professional literature in multiple formats and languages to support reading for information, reading for pleasure, and reading for lifelong learning	1	2	3	4	5
1	2	3	4	5	49. Use a variety of strategies to promote leisure reading and model personal enjoyment of reading in order to promote habits of creative expression and lifelong reading	1	2	3	4	5
1	2	3	4	5	50. Develop a collection of reading and information materials in print and digital formats that support the diverse developmental, cultural, social, and linguistic needs of P-12 students and their communities	1	2	3	4	5
1	2	3	4	5	51. Evaluate and select print, non-print, and digital resources using professional selection tools and evaluation criteria to develop and manage a quality collection designed to meet the diverse curricular, personal, and professional needs of students, teachers, and administrators	1	2	3	4	5
1	2	3	4	5	52. Organize school library collections according to current library cataloging and classification principles and standards	1	2	3	4	5

Category 6 of 8: Professional Learning

Use the following response scale to address each of the following items:

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

- Select the number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.
- Select the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist.

Extent Competency Currently Used					**Competencies**	**Extent Competency Should Ideally be Used**				
1	2	3	4	5	53. Model a strong commitment to the profession by participating in professional growth and leadership opportunities through membership in library associations, attendance at professional conferences, reading professional publications, and exploring Internet resources	1	2	3	4	5
1	2	3	4	5	54. Plan for ongoing professional growth	1	2	3	4	5
1	2	3	4	5	55. Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies	1	2	3	4	5
1	2	3	4	5	56. Use technology resources to engage in ongoing professional development and lifelong learning	1	2	3	4	5
1	2	3	4	5	57. Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning	1	2	3	4	5
1	2	3	4	5	58. Participate in professional development opportunities related to the management of school facilities, technology resources, and purchases	1	2	3	4	5
1	2	3	4	5	59. Engage in supervised field-based experiences with accomplished technology facilitators and/or directors	1	2	3	4	5

Category 7 of 8: Strategic Planning

Use the following response scale to address each of the following items:

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

- Select the number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.
- Select the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist.

Extent Competency Currently Used					**Competencies**	**Extent Competency Should Ideally be Used**				
1	2	3	4	5	60. Advocate for twenty-first century literacy skills to support the learning needs of the school community	1	2	3	4	5
1	2	3	4	5	61. Articulate the role and relationship of the school library program's impact on student academic achievement within the context of current educational initiatives. Utilizing evidence-based practice and information from education and library research, communicate ways in which the library program can enhance school improvement efforts	1	2	3	4	5
1	2	3	4	5	62. Advocate for school library and information programs, resources, and services	1	2	3	4	5
1	2	3	4	5	63. Apply best practices related to planning, budgeting, and evaluating human, information, and physical resources	1	2	3	4	5
1	2	3	4	5	64. Organize library facilities to enhance the use of information resources and services and to ensure equitable access to all resources for all users	1	2	3	4	5
1	2	3	4	5	65. Develop, implement, and evaluate policies and procedures that support teaching and learning in school libraries	1	2	3	4	5
1	2	3	4	5	66. Communicate and collaborate with students, teachers, administrators, and community members to develop a library program that aligns resources, services, and standards with the school's mission	1	2	3	4	5

1	2	3	4	5	67. Make effective use of data and information to assess how the library program addresses the needs of their diverse communities	1	2	3	4	5
1	2	3	4	5	68. Identify and locate technology resources and evaluate them for accuracy and suitability	1	2	3	4	5
1	2	3	4	5	69. Plan for the management of technology resources within the context of learning activities	1	2	3	4	5
1	2	3	4	5	70. Follow procedures and guidelines used in planning and purchasing technology resources	1	2	3	4	5
1	2	3	4	5	71. Identify and apply educational technology related research, the psychology of learning, and instructional design principles in guiding the use of computers and technology in education	1	2	3	4	5
1	2	3	4	5	72. Apply strategies for and knowledge of issues related to managing the change process in schools	1	2	3	4	5
1	2	3	4	5	73. Apply effective group process skills	1	2	3	4	5
1	2	3	4	5	74. Lead in the development and evaluation of district technology planning and implementation	1	2	3	4	5

Category 8 of 8: Technology Proficiency

Use the following response scale to address each of the following items:

1	2	3	4	5
Not at All	Occasionally	Somewhat	Often	To a Great Extent

- Select the number in the left column to indicate the extent you feel you are currently using the competency as a Media Specialist in your present position.
- Select the number in the right column that reflects the extent you feel the competency should ideally be used by you as a Media Specialist.

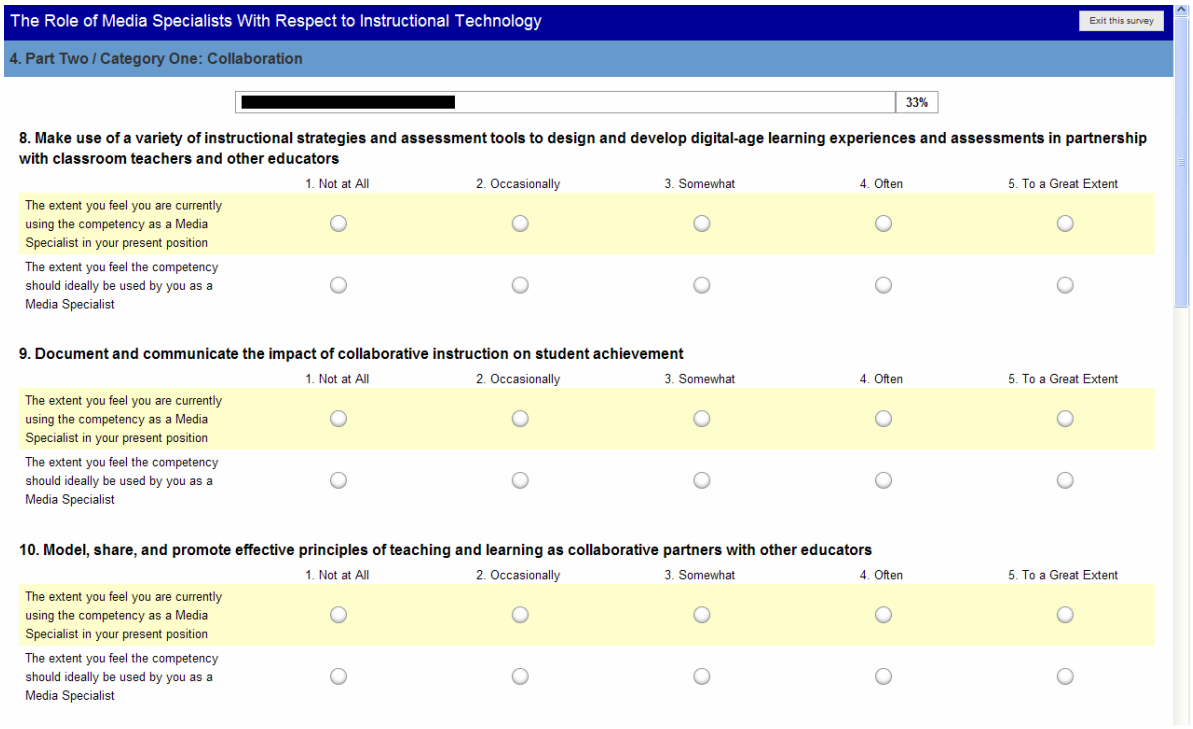
Extent Competency Currently Used					**Competencies**	**Extent Competency Should Ideally be Used**				
1	2	3	4	5	75. Demonstrate knowledge, skills, and understanding of concepts related to technology	1	2	3	4	5
1	2	3	4	5	76. Apply technology to increase productivity	1	2	3	4	5

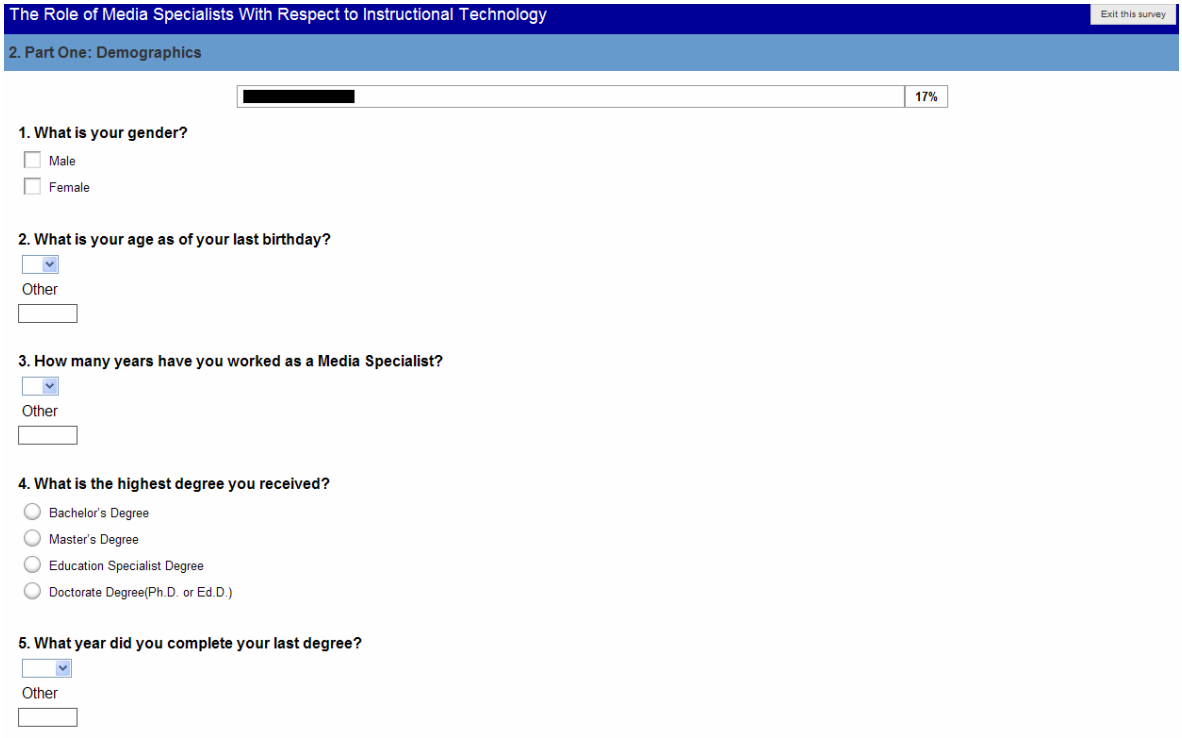
Please feel free to provide any additional information you believe may be beneficial to the study:

Thank you very much for participating in the study.

APPENDIX H

Online Survey Screen Shots





APPENDIX I

Introduction Email for Survey

Dear Media Specialist:

Due to the absence of state teacher certification (Georgia Educator Certificate) in instructional technology, and the lack of state-wide staffing guidelines or requirements for instructional technology specialists, there is a lack of consistency in the qualifications and staffing of P-12 instructional technology specialists in Georgia public schools. The result is a lack of defined and consistent support for the integration of technology into teaching and learning. In the absence of consistently staffed certified instructional technology specialists, media specialists may be playing an increasingly larger role in instructional technology and focusing less on library media, in Georgia P-12 public schools. Your assistance is needed to help find a solution.

I am currently working on my doctoral dissertation at Georgia State University. My topic is the role of media specialists with respect to instructional technology. As a fellow educator I understand your time is precious, but I would greatly appreciate you taking approximately 45 minutes to complete a survey based on your current experience as a media specialist.

The survey is completely anonymous, confidential, and voluntary. You will not be identified personally. Your name and school name will not be collected. The name of your school district will not be used in the study. The findings was summarized and reported in group form.

Below is a link to the survey. This link is uniquely tied to this survey and your email address. Please do not forward this message. Clicking on the link, or copying and pasting it into the address bar in your web browser, will take you to a "Consent Form" that describes the project in detail and outlines your right as a participant. Please review the form carefully and please contact me at 678-296-3634 or wgoetzel@student.gsu.edu if you have any questions. You may also contact Dr. Mary Shoffner in the Middle-Secondary Education and Instructional Technology Department at (404) 413-8424 or mshoffner@gsu.edu, or Susan Vogtner in the Office of Research Integrity at 404-463-0674 or svogtner@gsu.edu.

Thank you in advance for taking time out of your busy schedule to assist me in my research.

Sincerely,
Warren Goetzel

Here is a link to the survey:
[SurveyLink]

Please note: If you do not wish to receive further emails from us, please click the link below, and you was automatically removed from our mailing list.
[RemoveLink]

APPENDIX J

Georgia State University Institutional Review Board Approval

INSTITUTIONAL REVIEW BOARD
Mail: P.O. Box 3999
Atlanta, Georgia 30302-3999

In Person: Alumni Hall
30 Courtland St, Suite 217

Phone: 404/413-3500
Fax: 404/413-3504

May 3, 2011

Principal Investigator: Shoffner, Mary B

Student PI: Warren R Goetzel

Protocol Department: Middle Sec Educ & Instruc Tech

Protocol Title: The Role of Media Specialists With Respect to Instructional Technology In an Urban School District in Georgia

Submission Type: Protocol H11472
Review Type: Exempt Review

Approval Date: May 3, 2011

The Georgia State University Institutional Review Board (IRB) reviewed and approved your IRB protocol entitled The Role of Media Specialists With Respect to Instructional Technology In an Urban School District in Georgia. The approval date is listed above.

Exempt protocols do not require yearly renewal. However, if any changes occur in the protocol that would change the category of review, you must re-submit the protocol for IRB review. When the protocol is complete, a Study Closure Form must be submitted to the IRB.

Any adverse reactions or problems resulting from this investigation must be reported immediately to the University Institutional Review Board. For more information, please visit our website at www.gsu.edu/irb.

Sincerely,

Laura Fredrick

Laura D. Fredrick, IRB Vice-Chair

Federal Wide Assurance Number: 00000129

APPENDIX K

Georgia State University
Department of Middle-Secondary Education and Instructional Technology
Informed Consent

Title: The Role of Media Specialists With Respect to Instructional Technology In an Urban School District in Georgia

Principal Investigator: Dr. Mary Shoffner
Student Principal Investigator: Mr. Warren Goetzel

I. Purpose:
You are invited to participate in a research study. The purpose of this quantitative survey study is to examine the role of media specialists with respect to instructional technology in an urban school district in Georgia. You are invited to participate because you are Media Specialist in the urban school district in Georgia selected for the study. A total of 93 participants will be recruited for this study. Participation will approximately require 45 minutes of your time.

II. Procedures:
If you decide to participate, you will complete an Internet survey. The survey is divided into two parts. Part one consists of seven demographic questions and will take approximately five minutes to complete. Part two consist of 76 questions divided into eight categories and will take approximately 40 minutes to complete. The survey can be accessed by clicking the Next button at the bottom of this page. After selecting the answers that best match your opinion please click submit.

III. Risks:
In this study, you will not have any more risks than you would in a normal day of life.

IV. Benefits:
Participation in this study may not benefit you personally. Overall, we hope to gain information about the role of media specialists with respect to instructional technology.

V. Voluntary Participation and Withdrawal:
Participation in research is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. You may stop participating at any time.

Consent Form Approved by Georgia State University IRB May 03, 2011 - Indefinite

VI. Confidentiality:
We will keep your records private to the extent allowed by law. The principal investigator, Dr. Mary Shoffner, and student principal investigator, Mr. Warren Goetzel will have access to the information you provide. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board, the Office for Human Research Protection (OHRP). Names will not be collected or used on study records. Other facts that might point to you will not appear when we present this study or publish its results. The findings will be summarized and reported in group form. You will not be identified personally. Only the investigators will have access to the information you provide. It will be stored on a password and firewall-protected computers.

VII. Contact Persons:
If you have questions about this study contact Dr. Mary Shoffner at (404) 413-8424 or mbshoffner@gsu.edu and/or Warren Goetzel at 678-296-3634 or wgoetzel@student.gsu.edu. If you have questions or concerns about your rights as a participant in this research study, you may contact Susan Vogtner in the Office of Research Integrity at 404-413-3513 or svogtner1@gsu.edu.

VIII. Consent Form to Subject:
This message serves as your copy of the consent form. If you are willing to volunteer for this research, please click the Next button below. To opt-out close your web browser.

Consent Form Approved by Georgia State University IRB May 03, 2011 - Indefinite

APPENDIX L

Descriptive Statistics for Media Specialist Competency Items

Item	Scale	n	Min.	Max.	M	SD
Make use of a variety of instructional strategies and assessment tools to design and develop digital-age learning experiences and assessments in partnership with classroom teachers and other educators	Current Use	61	1.00	5.00	3.49	1.03
	Ideal Use	61	2.00	5.00	4.48	0.70
Document and communicate the impact of collaborative instruction on student achievement	Current Use	61	1.00	5.00	3.18	1.04
	Ideal Use	61	2.00	5.00	4.46	0.74
Model, share, and promote effective principles of teaching and learning as collaborative partners with other educators	Current Use	61	1.00	5.00	3.21	1.08
	Ideal Use	61	2.00	5.00	4.49	0.70
Collaborate with other teachers to plan and implement instruction of the AASL Standards for the 21st-Century Learner and state student curriculum standards	Current Use	61	1.00	5.00	3.21	1.25
	Ideal Use	61	3.00	5.00	4.66	0.54
Collaborate with classroom teachers to reinforce a wide variety of reading instructional strategies to ensure P-12 students are able to create meaning from text	Current Use	61	1.00	5.00	3.15	1.22
	Ideal Use	61	1.00	5.00	4.39	0.84
Establish connections with other libraries and to strengthen cooperation among library colleagues for resource sharing, networking, and facilitating access to information	Current Use	61	1.00	5.00	3.33	1.21
	Ideal Use	61	3.00	5.00	4.39	0.67
Participate and collaborate as a member of a social and intellectual network of learners	Current Use	61	1.00	5.00	3.26	1.15
	Ideal Use	61	2.00	5.00	4.31	0.72

Identify stakeholders within and outside the school community who impact the school library program	Current Use	61	1.00	5.00	3.20	1.19
	Ideal Use	61	2.00	5.00	4.28	0.78
Model and communicate the legal and ethical codes of the profession	Current Use	61	2.00	5.00	3.67	1.12
	Ideal Use	61	2.00	5.00	4.33	0.81
Practice the ethical principles of the profession, advocate for intellectual freedom and privacy, and promote and model digital citizenship and responsibility	Current Use	61	1.00	5.00	3.98	1.10
	Ideal Use	61	2.00	5.00	4.56	0.72
Educate the school community on the ethical use of information and ideas	Current Use	61	2.00	5.00	3.48	1.09
	Ideal Use	61	2.00	5.00	4.36	0.75
Identify and provide support for diverse student information needs	Current Use	60	1.00	5.00	3.87	0.96
	Ideal Use	60	2.00	5.00	4.63	0.61
Model multiple strategies for students, other teachers, and administrators to locate, evaluate, and ethically use information for specific purposes	Current Use	60	2.00	5.00	3.73	0.86
	Ideal Use	60	2.00	5.00	4.57	0.72
Collaborate with students, other teachers, and administrators to efficiently access, interpret, and communicate information	Current Use	60	2.00	5.00	3.87	0.93
	Ideal Use	60	3.00	5.00	4.72	0.52
Support flexible, open access for library services and demonstrate their ability to develop solutions for addressing physical, social and intellectual barriers to equitable access to resources and services	Current Use	60	1.00	5.00	4.10	1.05
	Ideal Use	60	1.00	5.00	4.63	0.76
Facilitate access to information in print, non-print, and digital formats	Current Use	60	2.00	5.00	4.25	0.84
	Ideal Use	60	4.00	5.00	4.77	0.43

Model and facilitate the effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research, learning, creating, and communicating in a digital society	Current Use	60	1.00	5.00	3.62	0.99
	Ideal Use	60	3.00	5.00	4.63	0.52
Use evidence-based, action research to collect data	Current Use	60	1.00	5.00	3.12	1.12
	Ideal Use	60	1.00	5.00	4.18	1.02
Interpret and use data to create and share new knowledge to improve practice in school libraries	Current Use	60	1.00	5.00	3.25	1.19
	Ideal Use	60	1.00	5.00	4.43	0.83
Knowledge of learning styles, stages of human growth and development, and cultural influences on learning	Current Use	59	1.00	5.00	3.59	1.08
	Ideal Use	59	1.00	5.00	4.42	0.77
Assess learner needs and design instruction that reflects educational best practice	Current Use	59	1.00	5.00	3.66	1.03
	Ideal Use	59	2.00	5.00	4.44	0.73
Support the learning of all students and other members of the learning community, including those with diverse learning styles, physical and intellectual abilities and needs	Current Use	59	2.00	5.00	3.98	0.82
	Ideal Use	59	3.00	5.00	4.71	0.49
Base twenty-first century skills instruction on student interests and learning needs and link it to the assessment of student achievement	Current Use	59	1.00	5.00	3.54	1.02
	Ideal Use	59	3.00	5.00	4.56	0.60
Implement the principles of effective teaching and learning that contribute to an active, inquiry-based approach to learning	Current Use	59	1.00	5.00	3.58	0.95
	Ideal Use	59	3.00	5.00	4.56	0.60
Acknowledge the importance of participating in curriculum development, of engaging in school improvement processes, and of offering professional development to other educators as it relates to library and information use	Current Use	59	1.00	5.00	3.71	1.08
	Ideal Use	59	2.00	5.00	4.61	0.67

Employ strategies to integrate multiple literacies with content curriculum	Current Use	59	1.00	5.00	3.39	1.05
	Ideal Use	59	2.00	5.00	4.46	0.77
Integrate the use of emerging technologies as a means for effective and creative teaching and to support P-12 students' conceptual understanding, critical thinking and creative processes	Current Use	59	1.00	5.00	3.53	1.06
	Ideal Use	59	2.00	5.00	4.51	0.70
Design and adapt relevant learning experiences that engage students in authentic learning through the use of digital tools and resources	Current Use	59	1.00	5.00	3.46	1.09
	Ideal Use	59	3.00	5.00	4.51	0.60
Familiar with a wide range of children's, young adult, and professional literature in multiple formats and languages to support reading for information, reading for pleasure, and reading for lifelong learning	Current Use	57	2.00	5.00	4.14	0.83
	Ideal Use	57	3.00	5.00	4.74	0.48
Use a variety of strategies to promote leisure reading and model personal enjoyment of reading in order to promote habits of creative expression and lifelong reading	Current Use	57	2.00	5.00	4.25	0.85
	Ideal Use	57	3.00	5.00	4.81	0.44
Develop a collection of reading and information materials in print and digital formats that support the diverse developmental, cultural, social, and linguistic needs of P-12 students and their communities	Current Use	57	1.00	5.00	4.16	1.03
	Ideal Use	57	2.00	5.00	4.77	0.54
Evaluate and select print, non-print, and digital resources using professional selection tools and evaluation criteria to develop and manage a quality collection designed to meet the diverse curricular, personal, and professional needs of students, teachers, and administrators	Current Use	57	3.00	5.00	4.46	0.68
	Ideal Use	57	3.00	5.00	4.67	0.61
Organize school library collections according to current library cataloging and classification principles and standards	Current Use	57	3.00	5.00	4.68	0.60
	Ideal Use	57	2.00	5.00	4.77	0.57
Model a strong commitment to the profession by participating in professional growth and leadership opportunities through membership in library associations, attendance at professional conferences, reading professional publications, and exploring Internet resources	Current Use	56	2.00	5.00	4.09	0.88
	Ideal Use	56	3.00	5.00	4.64	0.59

Plan for ongoing professional growth	Current Use	56	2.00	5.00	4.23	0.81
	Ideal Use	56	3.00	5.00	4.79	0.46
Advocate for twenty-first century literacy skills to support the learning needs of the school community	Current Use	56	1.00	5.00	3.88	1.18
	Ideal Use	56	2.00	5.00	4.55	0.66
Articulate the role and relationship of the school library program's impact on student academic achievement within the context of current educational initiatives. Utilizing evidence-based practice and information from education and library research, communicate ways in which the library program can enhance school improvement efforts	Current Use	56	1.00	5.00	3.75	1.18
	Ideal Use	56	1.00	5.00	4.50	0.81
Advocate for school library and information programs, resources, and services	Current Use	56	2.00	5.00	4.23	0.76
	Ideal Use	56	4.00	5.00	4.66	0.48
Apply best practices related to planning, budgeting, and evaluating human, information, and physical resources	Current Use	56	2.00	5.00	4.21	0.82
	Ideal Use	56	2.00	5.00	4.52	0.74
Organize library facilities to enhance the use of information resources and services and to ensure equitable access to all resources for all users	Current Use	56	3.00	5.00	4.50	0.63
	Ideal Use	56	3.00	5.00	4.68	0.58
Develop, implement, and evaluate policies and procedures that support teaching and learning in school libraries	Current Use	56	2.00	5.00	4.18	0.83
	Ideal Use	56	1.00	5.00	4.59	0.73
Communicate and collaborate with students, teachers, administrators, and community members to develop a library program that aligns resources, services, and standards with the school's mission	Current Use	56	2.00	5.00	4.04	0.89
	Ideal Use	56	2.00	5.00	4.57	0.71
Make effective use of data and information to assess how the library program addresses the needs of their diverse communities	Current Use	56	1.00	5.00	3.70	1.09
	Ideal Use	56	1.00	5.00	4.45	0.85

APPENDIX M

Descriptive Statistics for Instructional Technology Competency Items

Item	Scale	n	Min.	Max.	M	SD
Use technology to communicate and collaborate with peers, parents, and the larger community to nurture student learning	Current Use	61	2.00	5.00	4.10	0.85
	Ideal Use	61	3.00	5.00	4.64	0.61
Model and teach legal and ethical practice related to technology use	Current Use	61	1.00	5.00	3.39	1.16
	Ideal Use	61	3.00	5.00	4.44	0.65
Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities	Current Use	61	1.00	5.00	3.70	1.02
	Ideal Use	61	2.00	5.00	4.54	0.67
Identify and use technology resources that affirm diversity	Current Use	61	1.00	5.00	3.67	0.93
	Ideal Use	61	1.00	5.00	4.49	0.79
Promote safe and healthy use of technology resources	Current Use	61	1.00	5.00	4.11	0.91
	Ideal Use	61	1.00	5.00	4.70	0.67
Facilitate equitable access to technology resources for all students	Current Use	61	2.00	5.00	4.34	0.87
	Ideal Use	61	2.00	5.00	4.69	0.56
Design developmentally appropriate learning opportunities that apply technology enhanced instructional strategies to support the diverse needs of learners	Current Use	59	1.00	5.00	3.24	1.18
	Ideal Use	59	2.00	5.00	4.41	0.83
Apply current research on teaching and learning with technology when planning learning environments and experiences	Current Use	59	1.00	5.00	3.39	1.14
	Ideal Use	59	3.00	5.00	4.56	0.68
Plan strategies to manage student learning in a technology-enhanced environment	Current Use	59	1.00	5.00	3.63	1.02
	Ideal Use	59	1.00	5.00	4.42	0.88
Identify and apply instructional design principals associated with the development of technology resources	Current Use	59	1.00	5.00	3.37	1.14
	Ideal Use	59	2.00	5.00	4.34	0.82

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Facilitate technology-enhanced experiences that address content standards and student technology standards	Current Use	59	1.00	5.00	3.59	0.98
	Ideal Use	59	2.00	5.00	4.51	0.75
Use technology to support learner-centered strategies that address the diverse needs of students	Current Use	59	1.00	5.00	3.63	0.98
	Ideal Use	59	2.00	5.00	4.42	0.79
Apply technology to demonstrate students' higher-order skills and creativity	Current Use	59	1.00	5.00	3.42	1.10
	Ideal Use	59	2.00	5.00	4.46	0.73
Manage student learning activities in a technology-enhanced environment	Current Use	59	1.00	5.00	3.68	0.97
	Ideal Use	59	2.00	5.00	4.39	0.83
Use current research and district/regional/state/national content and technology standards to build lessons and units of instruction	Current Use	59	1.00	5.00	3.59	0.98
	Ideal Use	59	3.00	5.00	4.49	0.57
Apply technology in assessing student learning of subject matter using a variety of assessment techniques	Current Use	59	1.00	5.00	3.29	1.13
	Ideal Use	59	2.00	5.00	4.20	0.98
Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning	Current Use	59	1.00	5.00	3.25	1.17
	Ideal Use	59	1.00	5.00	4.17	1.00
Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity	Current Use	59	1.00	5.00	2.93	1.24
	Ideal Use	59	2.00	5.00	4.12	0.95
Use the school technology facilities and resources to implement classroom instruction	Current Use	59	1.00	5.00	3.75	1.04
	Ideal Use	59	1.00	5.00	4.46	0.90
Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies	Current Use	56	2.00	5.00	4.11	0.93
	Ideal Use	56	3.00	5.00	4.71	0.49
Use technology resources to engage in ongoing professional development and lifelong learning	Current Use	56	2.00	5.00	4.13	0.94
	Ideal Use	56	3.00	5.00	4.71	0.49
Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning	Current Use	56	2.00	5.00	4.16	0.85
	Ideal Use	56	3.00	5.00	4.64	0.52

Participate in professional development opportunities related to the management of school facilities, technology resources, and purchases	Current Use	56	1.00	5.00	4.09	0.94
	Ideal Use	56	3.00	5.00	4.57	0.63
Engage in supervised field-based experiences with accomplished technology facilitators and/or directors	Current Use	56	1.00	5.00	3.04	1.33
	Ideal Use	56	1.00	5.00	4.13	0.95
Identify and locate technology resources and evaluate them for accuracy and suitability	Current Use	56	1.00	5.00	3.98	1.05
	Ideal Use	56	1.00	5.00	4.52	0.81
Plan for the management of technology resources within the context of learning activities	Current Use	56	2.00	5.00	3.95	0.88
	Ideal Use	56	2.00	5.00	4.54	0.71
Follow procedures and guidelines used in planning and purchasing technology resources	Current Use	56	2.00	5.00	4.43	0.78
	Ideal Use	56	2.00	5.00	4.64	0.64
Identify and apply educational technology related research, the psychology of learning, and instructional design principles in guiding the use of computers and technology in education	Current Use	56	2.00	5.00	3.70	1.04
	Ideal Use	56	2.00	5.00	4.45	0.69
Apply strategies for and knowledge of issues related to managing the change process in schools	Current Use	56	1.00	5.00	3.25	1.22
	Ideal Use	56	1.00	5.00	4.05	1.12
Apply effective group process skills	Current Use	56	1.00	5.00	3.39	1.09
	Ideal Use	56	1.00	5.00	4.18	0.97
Lead in the development and evaluation of district technology planning and implementation	Current Use	56	1.00	5.00	2.55	1.52
	Ideal Use	56	1.00	5.00	3.91	1.24
Demonstrate knowledge, skills, and understanding of concepts related to technology	Current Use	56	2.00	5.00	4.13	0.81
	Ideal Use	56	2.00	5.00	4.52	0.76
Apply technology to increase productivity	Current Use	56	1.00	5.00	4.30	0.89
	Ideal Use	56	1.00	5.00	4.59	0.78