HIGH SCHOOL PRINCIPALS' PRACTICES CONCERNING TECHNOLOGICAL COMPETENCIES IN THE SELECTION CRITERIA FOR POTENTIAL TEACHERS

by

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ABSTRACT

Technology is continuously evolving and schools are directly impacted by these changes. As outlined in the National Educational Technology Plan (NETP, 2014), technology is at the core of our daily lives and work and teachers should utilize technology purposefully in all classrooms to provide engaging and powerful learning experiences. The classroom teacher represents the most critical component in implementing technology initiatives and technology standards. Therefore, hiring technologically competent teachers remains an essential focus for school districts (United States Department of Education, 2014). Sciarappa and Blau (2009) believe that the teacher hiring process can serve as a turning point in a school's future. Therefore, the purpose of this multisite case study was to investigate high school principals' practices concerning technological competencies in the selection criteria for potential teachers. The researcher investigated and interpreted the principals' practices concerning technological competencies in the selection criteria for potential teachers at nine different secondary schools in two school systems. Qualitative methodologies were used to triangulate the data in this study. Data revealed secondary school principals identify a potential teacher's knowledge of technology and the ability to integrate technology within the classroom setting as important components for all teachers to possess. Furthermore, the data in this study revealed that principals recognized the importance of providing a comprehensive evaluation to assess a potential teacher's knowledge of technology and ability to integrate technology within the selection criteria.

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CHAPTER 1

INTRODUCTION

Background

Teachers are the single most important factor influencing student achievement (Lasley, Siedentop, & Yinger, 2006). In turn, the knowledge and skills of the classroom teacher directly impact student achievement (Alliance, 2004). Administrators compete for the most effective teachers who have a new a desirable skill set: technological competence (National Educational Technology Plan, 2014). As outlined in the National Educational Technology Plan (NETP,2014) technology is at the core of our daily lives and work. Properly utilizing technology in all classrooms will provide engaging and powerful learning experiences (United States Department of Education, 2014). Nationally there is a renewed focus on better preparing students for a global society in the 21st century. According to the National Educational Technology Plan (NETP 2010), technology is critical to addressing the needs of a changing society. Numerous studies have been conducted that reveal the importance of teachers' technology knowledge and skills and the ability to integrate technology within the classroom setting (Buckenmeyer, 2010; Flanagan & Jacobsen, 2003; Groff & Mouza, 2008; Hayes, 2006).

When hiring teachers capable of educating 21st century learners, administrators must be aware of the need for students to interact with the technology under the guidance of a technologically competent teacher. A teacher capable of teaching 21st century learners is one who has knowledge of technology and the skills needed to integrate technology to facilitate

learning for students. She can tailor learning for individual students, preparing them for lifelong learning in a technological world instead of just trying to improve the way she has always been teaching with paper and pencil (Daggett, 2010). The technologically competent teacher focuses on preparing students for college and a demanding workforce, using technology to provide real world opportunities.

With a continued focus on educational reform, Congress has increased accountability standards for the educational system in America. While many factors contribute to the strength of a nation, a quality education with the integration of technology, remains a critical focus that many believe will keep the United States as the world's economic engine and at the forefront of innovation (NETP, 2010). A teacher properly integrating technology competencies within the curriculum is vital to ensure students are prepared for the 21st century workforce.

National Initiatives

The Department of Education (2014) claims the most important challenge the U. S. education system faces is not preparing students to do well on high-stakes tests, but rather fostering 21st century knowledge and skills in learners so that they are prepared to participate in the global, knowledge-based civilization. Technology is critical to addressing the needs of a changing society (NETP, 2014). Students now have the privilege and opportunity to gain access to information twenty-four hours a day, seven days a week, but the question remains whether students are using technology appropriately. The United States Department of Education (2014) views this debate as the focus of many initiatives regarding teacher and student accountability and the need for teachers to prepare students to use technology effectively.

Technology is rapidly changing, and as it changes so does the need for students to be technically ready for the digital twenty-first century. Technology, which is accelerating changes

in the way work is performed, contributes to students not having the necessary knowledge of and ability to apply technology knowledge in the workplace (National Education Technology Plan, 2014). Therefore, students are not well equipped for the workplace. In order to prepare students for the digital twenty-first century, the U.S. Department of Education has ordered an immediate transformation of current practice and established three key initiatives: the National Education Technology Plan, *Transforming American Education: Learning Powered by Technology* (United States Department of Education, 2014)*;* "Educate to Innovate" Campaign (United States Department of Education Office of Technology, 2010); and National Technology Standards for Teachers (International Society for Technology in Education, 2014).

The National Education Technology Plan, *Transforming American Education: Learning Powered by Technology* (NETP) (United States Department of Education, 2014), is a five year action plan that recognizes the urgency and importance of incorporating advanced technologies, including hardware and software used in the 21st century workplace, into the education system. Technologically competent teachers implementing these technologies have the chance to provide students with engaging and relevant learning experiences and assess and monitor student achievement in more meaningful and authentic ways (United States Department of Education Office of Technology, 2010).

NETP addresses the importance of aligning state, district and school technology plans, using identified goals and recommendations in five areas: learning, assessment, teaching, infrastructure and productivity. Technology is an integral component within each of these areas. The Department of Education's role is to ensure the successful implementation of this plan and hold stakeholders accountable, both in person and online (United States Department of Education Office of Technology, 2010). The NETP presents a model of learning powered by

technology and led by the Department of Education's Office of Educational Technology, along with leading education researchers and practitioners. The plan directs a focus to bring technologically competent teachers and technology into the classroom to give students the best opportunity for teachers to provide engaging and empowering learning experiences through the integration of technology.

In January 2010, President Obama launched an "Educate to Innovate" campaign in order to improve the participation and performance of students and teachers in Science, Technology, Engineering, and Math programs (STEM) ("Educate to Innovate", 2010). This was in response to the findings that only 16% of high school seniors are proficient in mathematics or interested in a STEM career (ed.gov, 2014). President Obama's goal to improve this program is to develop, recruit and retain 100,000 STEM teachers over the next 10 years. Approximately $180 million will be redirected from other programs to implement initiatives in science, technology, engineering, and mathematics. The STEM Teacher Pathways initiative will receive $80 million to recruit and train effective STEM educators (whitehouse.gov, 2013).

A response to these national initiatives is increased accountability regarding both national and state standards for teachers, specifically focusing on technology knowledge and the ability to integrate technology in the classroom as important factors needed when preparing students for the 21st Century. National standards, including the International Society for Technology in Education Standards for Teachers (ISTE Standards •T) (ISTE, 2014), and State Technology Standards for Teachers were developed in response to these initiatives. The International Society for Technology in Education (2014) states that effective teachers model and apply ISTE Standards for Students (Standards•S) as they design, implement, and assess learning experiences to engage students and improve learning across all content areas. The importance of ISTE

Standards for Students (ISTE, 2014) is to outline the expected learning criteria that teachers need to know.

There are five ISTE Standards for Teachers. These standards are in place to evaluate the technology knowledge and skills needed to be a technologically competent teacher in an increasingly global and digital society (ISTE, 2014). Technology integration is more prevalent in our society and it is important that teachers possess the knowledge and skills needed to integrate technology into their curriculum.

The first standard is Facilitate and Inspire Student Learning and Creativity. This standard focuses on teachers' abilities to use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

The second standard is Design and Develop Digital Age Learning Experiences and Assessments. This standard focuses on teachers' abilities to design, develop, and evaluate authentic learning experiences and assessments, incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the Standards•S.

The third standard is Model Digital Age Work and Learning. This standard focuses on teachers' abilities to exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society.

The fourth standard is Promote and Model Digital Citizenship and Responsibility. This standard focuses on teachers' abilities to understand local and global societal issues and responsibilities in an evolving digital culture, and exhibit legal and ethical behavior in their professional practices.

The fifth standard is Engage in Professional Growth and Leadership. This standard focuses on teachers' abilities to improve their professional practice continually, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.

The Alabama Quality Teaching Standards (AQTS) require Alabama teachers to align their practice and professional learning. Standard three of AQTS, "Literacy," specifically states that to improve student learning and achievement, teachers use knowledge of effective technology to facilitate and support direct instruction, active inquiry, collaboration and positive interaction across all content areas. There are 6 target indicators for implementing technology: a) Teachers have knowledge of available and emerging technologies that support the learning of all students; b) teachers have knowledge of the wide range of technologies that support and enhance instruction, including classroom and school resources as well as distance learning and online learning opportunities; c) teachers have the ability to integrate technology into the teaching of all content areas; d) teachers have the ability to facilitate students' individual and collaborative use of technology; e) teachers have the ability to use technology to assess student progress and manage records; and f) teachers have the ability to evaluate students' technology proficiency and students' technology-based products within content areas. Both national and state technology standards provide teachers with research-based technological knowledge and skills that demonstrate mastery of instructional technology and the target indicators for effective integration of technology into instruction across all content areas.

One constituent in implementing technology initiatives and technology standards is the classroom teacher. Hiring teachers is one of the most important responsibilities for which a building administrator is accountable (Baker & Cooper, 2005; Seyfarth, 2008). Sciarappa and

Blau (2009) believe that the teacher hiring process can serve as a turning point in a school's future. Therefore, hiring highly skilled teachers remains an essential focus for school districts (United States Department of Education, 2014).

Statement of the Problem

Research has indicated that teachers have the greatest impact on student learning outcomes (Alliance, 2004; Darling-Hammond, 2000; Hattie, 2009; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Sanders & Horn, 2008; Stronge, 2007). Therefore, administrators are searching to recruit and hire the most effective teachers (NETP, 2014), which in today's technological world means teachers with technological knowledge and skills. Numerous studies have been conducted that reveal the importance of teachers having knowledge of technology and the ability to integrate technology within the classroom setting (Buckenmeyer, 2010; Flanagan & Jacobsen, 2003; Groff & Mouza, 2008; Hayes, 2006). When hiring teachers capable of educating 21st century learners, administrators must be aware of the need for students to interact with technology under the guidance of a technologically competent teacher. Principals may not consider or perceive such competencies to be important for potential teachers to possess. Therefore, students may not be prepared for the 21st century workforce.

Purpose of the Study

Although teacher selection criteria are important variables in building powerful educational reforms (Leithwood & Day, 2007), little research has examined technological competencies in the selection criteria for potential teachers. Hiring effective teachers has become one of the greatest challenges for administrators and one of the greatest demands of society (NETP, 2014). The purpose of this multisite case study is to investigate high school principals' practices concerning technological competencies in the selection criteria for potential teachers.

Significance of the Study

Through a better understanding of the current selection criteria for potential teachers, more informed decisions can be made by local systems, policy makers and administrators regarding the hiring process. This process may lead to hiring technologically competent teachers who positively impact the use of technology by 21st century students.

Research Questions

The following research questions were developed to gain a greater insight into secondary principals' current practices concerning technological competencies in the selection criteria for potential teachers. The overarching research question for this study is, "What are high school principals' practices concerning technological competencies in the selection criteria for potential teachers?"

Sub questions include:

1. What are high school principals' practices concerning potential teachers' knowledge of technology in the selection criteria?
2. What are high school principals' practices concerning potential teachers' ability to integrate technology in the classroom in the selection criteria?
3. How do high school principals determine if potential teachers have the expected knowledge of technology and ability to integrate technology in the classroom?

Framework

The theoretical framework guiding this study is derived from hiring practices of great corporations set forth in the Good to Great Theory (Collins, 2001) and the International Technology Standards for Teachers (NETS-T). Although Collins' framework is based in the corporate world, a search of the literature provided little information on theories guiding K-12

hiring practices, and other studies have shown Collins' framework to be relevant to education (Bowers, 2008; Casellius, 2006; DeMary, 2005; Hargrove, 2005). Fullan (2003) believes Collins' findings about private sector leadership are relevant to today's efforts to transform our public schools from good to great schools.

One of the commonalities Collins (2001) discovered among successful leaders was the focus on the hiring process. Specifically, the researcher will utilize the framework created by Collins concerning the first stage of the Good to Great Theory-Disciplined People: "First Who, Then What." Through this understanding of Collins' research results, the hiring process will be the focus of this study. The International Technology Standards for Teachers will be used as a lens to determine what technology competencies are evident in the hiring criteria for potential teachers.

Collins (2001) and his team of researchers spent five years studying Fortune 500 companies that moved from good to great and how they made their organizations successful. Collins' research focused on how good companies became great companies and how they were able to sustain that success over time. Their research focused on comparing companies that were under the same constraints, yet some made substantial gains and others made little or no gains. The researchers found that the fundamental component to these companies' success was their CEOs. The results revealed that there were specific commonalities present among each of the CEOs of the successful companies that were absent in the leaders of the less successful companies.

Collins (2001) stated that any organization can substantially improve performance if leaders concentrate on the hiring principle of "first who, then what" (p. 38). Collins' "first who, then what" principle of hiring personnel advocates getting the right people in the organization

before focusing on what they will be doing in and for the organization. According to Collins, the "right" people share the core values of the organization, understand responsibility, have commitment to the organization, do not need to be managed, display passion, and have the necessary knowledge and skills. Collins found that hiring the right people is paramount to identifying an effective workforce that shares the overall vision of the organization. Collins and his team discovered that successful leaders first got the right people on the bus, the wrong people off the bus and then figured out where to drive the bus (Collins, 2001). Educational researchers have sought to explore Collins' research in the private sector to seek possible application in school leadership (Bowers, 2008; Grey & Streshly, 2008).

Collins' (2001) business practices from his book *Good to Great* have been applied to education in previous studies to explore leadership (Bowers, 2008; DeMary, 2005), school improvement (Casellius, 2006), and teacher proficiency (Hargrove, 2005). Bowers' (2008) research applied Collins' hiring practices to identify quality teachers and improve student performance. Louis and Miles (1990) researched five urban high schools that were engaged in improvement projects and their results revealed getting the people first and then deciding a plan of action was the smart way to proceed. Researchers in educational leadership have indicated that controlling staff hiring and development of hiring practices is a variable for creating successful schools and linking leadership to strong schools is the administrator autonomy (Coleman et al., 1966; Teske & Schneider, 1999).

Grey and Streshly (2008) examined the application of Collins' (2001) research to determine whether it could apply to school leaders to determine if there were identifiable characteristics of successful school leaders that correlated with long-term educational success. They found that all of the principals interviewed acknowledged the importance of effective

teachers at their schools. The differences between the successful principals and the less successful principals were in the ways they focused on their district's hiring procedures (Grey & Streshly, 2008). Their research corresponded with the hiring practice of "First Who, Then What" as one of the commonalities among successful school principals.

School leaders seeking to hire technologically competent teachers need to be aware of current technology standards. The International Technology Standards for teachers (NETS-T) specify that knowledge of technology and the ability to integrate technology into classroom instruction are integral components for teachers in all content areas. Therefore, these standards will be used as a lens to determine what technology competencies are evident in the hiring criteria for potential teachers.

Assumptions

Several assumptions have been made regarding this study. It is assumed that participants understood the interview questions and provided responses that directly relate to the questions that were asked. It is also assumed that the participants provided honest responses to the researcher when interviewed about their experience and perceptions of their consideration of technological competencies within the selection criteria for potential teachers. Finally, it is assumed that participants answered without bias.

Limitations

The following is a list of limitations of this research study:

1. The study is limited because of the small sample size of nine secondary school principals. However, detailed descriptions from the analyses of in-depth interviews provided insight into the teacher selection criteria for secondary school principals.

2. Limitations are inherent in the interviewing process since principals may not be willing to share information nor provide enough data for analysis by responding in short narratives to questions. However, the researcher used open-ended questions and encouraged elaboration on responses from the principals to elicit and collect detailed, thick data for analysis. To ensure accuracy, the principals' responses were tape-recorded and the researcher took comprehensive notes during the interview.

3. A limitation of this study is that only principals were interviewed, even though a majority of principals indicated that they use a team to conduct interviews and consider panel member's feedback in making their hiring decision. Gathering information from other staff members in the interview or decision-making process would have made this a more robust study, suggesting further in-depth research regarding hiring practices.

Operational Definition of Terms

The following terms are used in the study.

21st Century Skills: Having the knowledge of technology and ability to use technology to enhance instruction to promote critical thinking, problem solving, collaboration, and communication to solve real world problems (P21 Framework, 2013).

Alabama Quality Standards for Teachers: State standards to which teachers must align their practice and professional learning (ALSDE, 2014).

College- and career-ready standards: Content standards for kindergarten through 12th grade that build towards college- and career-ready graduation requirements by the time of high school graduation. A State's college- and career-ready standards must be either a) standards that are common to a significant number of States; or b) standards that are approved by a State

network of institutions of higher education, which must certify that students who meet the standards will not need remedial course work at the postsecondary level (USDE, 2014).

ISTE Standards for Teachers: The standards for evaluating the knowledge and skills educators need to teach, work, and learn in an increasingly connected global and digital society (ISTE, 2014).

Local educational agency: As defined in the Elementary and Secondary Education Act, a public board of education or other public authority legally constituted within a State for either administrative control or direction of, or to perform a service function for, public elementary schools or secondary schools in a city, county, township, school district, or other political subdivision of a State, or for a combination of school districts or counties that is recognized in a State as an administrative agency for its public elementary schools or secondary schools (USDE, 2014).

Selection Criteria: The knowledge and skills administrators are looking for when deciding who to hire for a teaching position (USDE, 2014)

Student Achievement: The amount of academic content a student learns in a determined amount of time. Each grade level has instructional standards that educators are required to teach (NETP, 2014).

Technology Competencies: Knowledge of technology and the skills needed to integrate technology in the classroom.

Teacher Effectiveness: Effective teachers model and apply ISTE Standards for Students (Standards•S) as they design, implement, and assess learning experiences to engage students and improve learning across all content areas (ISTE, 2014).

Technology Knowledge: Having the knowledge of technology tools, emerging technology, applications, hardware and software programs (ISTE, 2014).

Technology Skills: The ability to use technology as a tool to research, organize, evaluate and communicate information to enhance classroom instruction (P21 Framework, 2013).

Summary

Chapter 1 of this dissertation provides an introduction to the study. It consists of an introduction to the topic, a statement of the problem, research questions, significance, framework, assumptions, limitations and definitions. Chapter 2 presents a review of the literature on topics related to the study and its methodologies. Chapter 3 provides a discussion of the methodology, including setting, participants, instrumentation, positionality of the researcher, data collection and analysis methods and the reasoning behind their selection. Chapter 4 provides the results of the study, which includes excerpts from interviews with participants. Chapter 5 discusses the findings and conclusions of the study and how they relate to the research questions. Implications of the study and recommendations for future research are addressed.

CHAPTER 2

LITERATURE REVIEW

Lasley, Siedentop, and Yinger (2006) report that teachers have been found to be the single most important factor influencing student achievement, while Daggett (2010) states that teacher knowledge and skills represent two of the most important influences on student learning. This includes teachers' knowledge and skills regarding technology. For purposes of organization, the critical review of literature is divided into the following sections: teachers' knowledge of technology, teachers' instructional methods using technology, the principal's role in the hiring process, and selection criteria. Sources in this section included journals, books, professional articles, Google Scholar, Educational Resources Information Center (ERIC), Virtual Learning Resources Center (VLRC), and Archival Research Catalogue.

Teachers' Technological Competencies

Research and professional literature related to instructional effectiveness is focused in two areas: a) what a teacher does prior to instruction and b) what a teacher does during instruction. When selecting instructional strategies, highly skilled teachers know that one size never fits all (McEwan, 2002; Stronge, 2007). They use a variety of research-based techniques to ensure their students eagerly participate in the learning process and retain what is taught (Marzano & Kendall, 2007). Daggett (2010) acknowledged talented, well-prepared, and technologically competent teachers are the key to improved educational outcomes.

States are working to ensure that technologically competent teachers are dispersed equally throughout districts and classrooms (Noell & Kowalski, 2010). As a result of these initiatives, educators, employers, and organizations have concurred that technological competencies are vital to have in order to satisfy employability demands, to integrate and participate successfully in today's society, and to contribute positively to the wellbeing of the United States' economy (NTEP,

Moving into the 21st century, teachers have been the focus of scrutiny for not being technologically competent to provide students with the knowledge and opportunities they need in order to be successful global citizens in the 21st century (Partnership for 21st century skills, 2011). There has been a significant shift in education over the last century, from a focus on industrial and manufacturing skill sets to focusing on factual and procedural knowledge to informational and knowledge based skills set focusing on the development of conceptual and meta-cognitive knowledge (Anderson, 2008).

This shift has been attributed to the changes in society and particularly the rapid development of technology and its impact on the way people live, work and learn. There are a number of politicians, business leaders and educators who are united around the idea that students need technological competencies to be successful in today's global economy. As found in studies that compare different frameworks for 21st century skills (Anderson, 2008; Dede, 2010; Partnership for 21st century skills, 2011), there is agreement on the need for skills in the areas of collaboration, problem solving and communication, while utilizing technology as an essential tool. Students may not master these 21st century skills without support of technologically competent teachers. Research demonstrates that technologically competent

teachers have an influence on student success and achievement (Meinick & Meister, 2008; Stronge, 2007).

Teachers face the dual challenge of acquiring technological knowledge and knowing how to integrate that knowledge in the classroom (Darling-Hammond, 2010). For teachers, the reality is limited funding, lack of training, and insufficient time in the curriculum to incorporate technology (Howley, Wood & Hough, 2011). Many educators become resistant to using computer technology in the classroom with their students because they feel uncomfortable with their personal level of technology ability (Becker, 2001). Unfortunately, many teachers have a limited knowledge of 21st century skills and do not integrate them into the curriculum (Louis, 2012).

The incorporation of technology across disciplines in K-12 education is critical to the integration of 21st century skills in the curriculum. In order for teachers to incorporate technology in the curriculum well, they must possess technological competencies to provide effective instruction for their students (Chorzempa, 2011; Lin et al., 2008). The success of 21st century skills and technology integration depends on the teacher's knowledge of technology and appropriate curriculum design (Kleiman, 2004). Teachers' perceptions of classroom technology and the lack of expertise with computer technology could be the main inhibiting factors to technology integration (Becker, 2001).

Teachers' Knowledge of Technology

Teachers must possess technological competencies to effectively teach students in the digital age (Chorzempa, 2011; Lin et al., 2008). Harris, Mishra, and Khoeler (2009) assert that teachers must know the appropriate pedagogical strategies, including cognitive, social and development theories of learning, for students and content area instruction in order to conduct

and facilitate meaningful integration of technology in K-12 programming. Even with major reports and federal mandates, empirical studies have revealed that students are graduating from high school underprepared for the working world of the 21st century (Achieve, 2010; Partnership for 21st Century Skills, 2006). Several authors (Breivik, 2005; Friedman, 2007; Partnership for 21st Century Skills, 2002; Wagner, 2008) have identified that in a knowledge-based economy, workers need to possess technical (hard) skills. This category includes a worker's facility with language or literacy, numeracy, and technology (i.e., systems and processes). Technical, or hard, skills determine the eventual success of individuals operating in the knowledge based economy (Partnership for 21st Century Skills, 2002; Wagner, 2008).

According to Regan (2008) and Stevens (2011), students must use technology efficiently to produce, collaborate, and solve problems because these skills are necessary in competitive job markets. As Friedman (2007) states, technological advancement, human knowledge, globalization, and constant change require a modification in an education that is relevant where students are able to learn, adapt, and apply their competencies to real-life situations.

Technology has impacted many aspects of our everyday lives, yet when students come to school, they typically have to power down. This generation of students does not know what it is like to be in a world without the Internet. With growing global access to information, 21st century skills must be taught and assessed through the use of real-world problems, using real-world tools to develop potential solutions to those problems (ISTE, 2014, Lemke, 2006; Partnership, 2002). In order to increase accountability and ensure that students have the technology knowledge and skills required for the 21st Century workforce, the ISTE (International Society for Technology in Education) Standards for Students were developed (ISTE, 2014). The

importance of these standards is to outline the expected learning criteria that teachers need to know.

The ISTE Standards for Students (ISTE Standards •S) consist of 6 categories. The first category is Creativity and Innovation. This standard focuses on a student's ability to demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. The second category, Communication and Collaboration, focuses on a student's ability to use digital media environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to learning of others. The third category, Research and Information Fluency, focuses on a student's ability to apply digital tools to gather, evaluate, and use information. The fourth category, Critical thinking, Problem Solving, and Decision Making, focuses on a student's ability to use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The fifth category, Digital Citizenship, focuses on students' understanding of human, cultural, and societal issues related to technology and practice legal and ethical behavior. The 6th category, Technology Operations and Concepts, focuses on a student's ability to demonstrate a sound understanding of technology concepts, systems, and operations (ISTE, 2014).

When considering the technology gap between students and teachers, implementing a 21st century skills based curriculum is a major paradigm change for students and teachers. Implementation of a technology initiative in a school system impacts every aspect of the institution. School districts need to focus on the integration of technology into the classrooms in ways that students interact and create with the tools that they are given, not what is more comfortable for the teacher and passive to the student for data storage and software access. This

will require systemic changes for school systems. It will not be enough to just infuse the system with technology (Partnership for 21st Century Skills, 2002).

Guzey and Roehrig (2009) suggest that using technology in inquiry-based science classrooms encourages students to think and work like scientists: Educational technology tools such as computers, data collection and analysis software, digital microscopes, multimedia, student response systems, and interactive white boards can help students actively engage in the acquisition of science and inquiry. Therefore, in order for students to have the knowledge and ability to work with technology, it is critical that teachers integrate technology effectively into the classroom (Ertmer & Ottenbreit-Leftwich, 2010). Researchers suggest that, for teachers to effectively integrate technology, they need to have knowledge of the relationship between the content they are teaching, the best practices for teaching the content, and the technology they are using (Ertmer & Ottenbreit-Leftwich, 2010). However, research shows that teachers are ill prepared to integrate technology into the subjects they teach (NETP, 2014).

Teachers' Instructional Methods Using Technology

The need for instructional practices to change is imperative for students to achieve the technological competencies needed to be successful in the global economy. Collaboration, problem solving and communication as instructional strategies that integrate technology throughout the processes to support student centered learning are the focus of most 21st century frameworks (AMA, 2010; Dede, 2010; Partnership for 21st century skills, 2011). Teachers must provide meaningful opportunities to utilize technology to develop students' collaborative and communicative skills while solving real world problems since these skills are necessary in the 21st century competitive job markets (Regan, 2008; Stevens, 2011).

The International Society of Technology in Education (ISTE), published the National Educational Technology Standards for Teachers (NETS-T) which are now known as the ISTE Standards for Teachers (ISTE Standards•T) (ISTE, 2014). These standards describe the skills and knowledge educators need to teach, work, and learn in an increasingly connected global and digital society. The International Society for Technology in Education (2014), states that effective teachers model and apply ISTE Standards for Students (Standards•S) as they design, implement, and assess learning experiences to engage students and improve learning across all content areas. There are five ISTE Standards for Teachers. These standards are used to evaluate teachers' skills and knowledge needed to teach and learn in a digital society.

The first standard is Facilitate and Inspire Student Learning and Creativity. This standard focuses on teachers' abilities to use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments. The second standard is Design and Develop Digital Age Learning Experiences and Assessments. This standard focuses on teachers' abilities to design, develop, and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context, and to develop the knowledge, skills, and attitudes identified in the Standards•S.

The third standard is Model Digital Age Work and Learning. This standard focuses on teachers' abilities to exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society. The fourth standard is Promote and Model Digital Citizenship and Responsibility. This standard focuses on teachers' abilities to understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.

The fifth standard is Engage in Professional Growth and Leadership. This standard focuses on teachers' abilities to continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources (ISTE, 2014).

ISTE asserts that effective teachers incorporate the ISTE Standards for Students (ISTE Standards•S) into the fundamentals of their curriculum. These standards support the NETP's goals by providing best practices identified for learning, teaching and leading with technology. Both higher education institutions and school administrators can use these standards to assess and evaluate potential and practicing teachers. The ISTE Standards•S and ISTE Standards•T provide teachers a framework for planning technology-based activities that not only support instruction but also improve students' technology skills.

Many states recognize the importance of curriculum standards to ensure that students have the necessary academic and technological skills to continue to learn and succeed, whether in higher education or careers (United States Department of Education, 2014). As a result across the state of Alabama technology standards were developed to align with the ISTE standards for teachers in order to evaluate technology proficiency. All teachers are evaluated annually and expected to be proficient in the following state technology standards (ALSDE 2014).

The state of Alabama also requires teachers to align their practice and professional learning to the Alabama Quality Teaching Standards. Standard three: Literacy specifically states that to improve student learning and achievement, teachers use knowledge of effective technology to facilitate and support direct instruction, active inquiry, collaboration and positive interaction. There are 6 key indicators that are the following: a) Teachers have knowledge of available and emerging technologies that support the learning of all students; b) teachers have

knowledge of the wide range of technologies that support and enhance instruction, including classroom and school resources as well as distance learning and online learning opportunities; c) teachers have the ability to integrate technology into the teaching of all content areas; d) teachers have the ability to facilitate students' individual and collaborative use of technology; e) teachers have the ability to use technology to assess student progress and manage records; and f) teachers have the ability to evaluate students' technology proficiency and students' technology-based products within content areas. Both national and state technology standards provide teachers with research based technological competencies and skills that demonstrate mastery of instructional technology and the key indicators for effective integration of technology into instruction across all content areas (Alabama State Department of Education, 2014).

While technology standards are important, it is equally important that these standards relate to other academic requirements. Technology alone is simply a piece of hardware or software, but when integrated purposefully by an effective teacher, instruction is brought to life. According to the National Research Council, "the integration of technology content into other subject areas, such as science, mathematics, social studies, English, and art could greatly boost technological literacy" (Pearson & Young, 2002, p. 55). Several studies discuss the implications of technology integration across content areas that increases both student achievement and motivation (Adams, 2008; Bull, Hammond & Ferster, 2008; Cifuentes, Sharp, Bulu, Benz & Stough, 2010; Conole, 2010; Higdon & Topaz, 2009; McLeod & Vasinda, 2008; Olaniran, 2009; Thomas & Li, 2008).

The impact instructional technology has on learners, when purposefully constructed and effectively implemented, is an essential component necessary in order to prepare students to become global competitors in the 21st century. The definition of instructional technology is

continuously being changed in order to respond to emerging technologies and theories in the field. The current definition is “Instructional technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources” (Januszewski & Molenda, 2008, p.2). Partnership for 21st Century Skills (2008a) emphasized that students need skills such as being technologically proficient, globally aware, civically engaged, and financially and economically literate to most effectively use their creativity in the 21st century. Technology allows students to continue learning and collaborating even after class is dismissed (Rodgers et al., 2006).

Osorio-O’Dea (2001) suggests that teachers’ ability to utilize technology in their classroom is essential and that there also should be modifications to the curriculum that connect technology with instructional practices. There are several examples of technology integration within Math, Science, and Social Studies content areas. The current math classroom can be enhanced by a multitude of available technologies that allow for implementing data driven curriculum and using virtual manipulatives (Crompton, 2011). Guzey and Roehrig (2009) suggest that using technology in inquiry-based science classrooms encourages students to think and work like scientists: Educational technology tools such as computers, data collection and analysis software, digital microscopes, multimedia, student response systems, and interactive white boards can help students actively engage in the acquisition of science and inquiry. The National Standards for Social Studies (NCSS, 2013), indicates that technology should be woven into the social studies curriculum and that technology should be thought of in terms of its effect on the teaching and learning of social studies.

Because students are technologically advanced in almost every aspect of their lives, teachers must make sure that their education is equally supported by technology. Teachers

should be aware of instructional methods to integrate technology tools in the classroom (ISTE, 2014). There are multiple ways to incorporate devices into the curriculum, and schools must make every effort to keep the classroom technologically connected (ALSDE, 2014). The Smart board is a form of technology that teachers use to engage students.

A smart board is an interactive whiteboard that allows teachers to project and digitally draw on images all with the touch of a finger. Teachers can also manipulate computer functions through the use of a smart board. Teachers can develop interactive lessons providing differentiated learning experiences for all learners using one technology tool. Students can edit text (highlighting, annotating), brainstorm, interact with maps, and present projects.

Smart phones are another technological device that can be integrated into the classroom. Smart phones in conjunction with a strong classroom management system, have the potential to bring collaboration, communication, and creativity into the classroom. Students can use Remind101, a computer app that enables them to stay informed and organized. Students sign up for free and receive a text reminder of an upcoming assignment or test. Teachers can also engage students with digital polling software, such as polleverywhere.com, to assess students' prior knowledge before a lesson, review for a test, or test student's knowledge of their subject material. As students' answers are compiled, the site creates a graph showing their responses.

As textbooks in the classroom become outdated and new textbooks become prohibitively expensive, eReaders have become a viable option for schools. The eReader can be used to read novels, informational texts, and short stories, many which are free for downloading. Teachers can integrate eReader into the classroom to assist with diverse learners or students who have learning disabilities. The eReader can be used to modify sound and visual settings, and provide

text-to-text speech applications. Students are able to listen to chapters and read along to assist with development of fluency and pronunciation of unfamiliar words.

Tablets and laptops are fast and easy ways to give students access to the Internet. Students can research at their desk or watch videos that are relevant to the curriculum. Teachers can use tablets or laptops to promote student interactions and in-class participation. Students can collaborate through interactive programs. An example is Padlet, an online program that allows students the opportunity to collaborate with classmates and share information relevant to the assignment or topic.

Games are another method to teach content. Games may be a reward for students' good behavior, to review content, or used as a formative assessment tool. The important task in creating educational games is to ensure the context and purpose of the game is directly related to the content. Teachers could utilize games in the classroom by having students create and develop their own game. This would give students the opportunity to determine material that is relevant for inclusion in their game.

The advantages of preparing students with knowledge and skills that are adequate for a technologically driven economy do not only benefit the nation's economy, but also society and the individual. In a culture where the information that is relevant today is obsolete tomorrow, students need to learn how to learn, not what to learn. They need to be taught how to think, not what to think. Learning how to learn and learning how to embrace change are the critical skills that will enables individuals to thrive in any situation. The U.S. Department of Education (2014) reports discuss the transformative potential of technology in re-configuring teaching and learning to support the development of skill sets emerging as important for participation in future economies.

In a study completed by the US Department of Education, only 21% of teachers reported feeling “very well” prepared to integrate educational technology into the subjects they taught, while another 37% reported feeling “somewhat” prepared to do so. It is important to discover what barriers may exist, such as a lack of time and a lack of ability to integrate technology effectively in the classroom (Pierson, 2001). These factors could make teachers feel unprepared to utilize educational technology within their classroom instruction. Effective technology use in the K-12 classroom presents an ongoing challenge in education (Courville, 2011). Researchers have found that computers in the classroom have a positive impact on student interest, motivation, achievement, self-concept, and empowerment (Kingsley, 2007; Pollard & Pollard, 2004).

In response to this evolution, solutions continue to be defined based upon the institution’s past rather than the students’ future needs (DuFour & Marzano, 2011). School districts can easily purchase the most modern technology and give the impression that they are innovative while the core of instruction goes unaffected (Fullan, 2009). The Office of Technology Assessment (2014) and the U.S. Department of Education (2014) state that while there is an increase in the availability of technology in the classroom, teachers are not prepared to integrate technology in the classroom. If teachers are not well equipped to purposefully integrate technology into their curriculum, then the technology continues to remain ineffective.

Teachers are faced with the challenge of equipping students with the technological competencies needed to compete in the global economy. Research shows that teachers’ use of instructional technology in the classroom has a strong influence on student outcomes (Kopcha & Sullivan, 2007). Teachers should be proficient in the use of technology in their classrooms

(Chorzempa, 2011). This makes it important to hire teachers who have these technology competencies.

Critical Focus on Hiring

The attention to hiring is critical since teachers are the single most important resource provided to students (Rice, 2008). This emphasizes the critical nature of effective hiring practices to ensure that potential teacher candidates who have the knowledge and skills needed are selected to teach (Strong, 2010). Researchers have concluded that a crucial strategy for school improvement is in recruiting and hiring effective teachers (Harris, 2004; Stronge, 2006).

Collins (2001) states that any organization can substantially improve performance if leaders concentrate on the hiring principle of "first who, then what." Collins' "first who, then what" principle of hiring personnel advocates getting the right people in the organization before focusing on what they will be doing in the organization. The right people are the most important asset a company possesses (Collins, 2001). When it comes to decision-making on hiring new personnel, leadership is critical.

Collins (2001) found that hiring the right people is paramount to identifying an effective workforce that shares the overall vision of the organization. Educational researchers have sought to explore Collins' research in the private sector to seek possible application in school leadership (Bowers, 2008; Grey & Streshly, 2008). School leaders can impact significant change in student performance by hiring technologically competent teachers.

Louis and Miles (1990) researched five urban high schools that were engaged in improvement projects, and their results revealed getting the people first and then deciding a plan of action was the smart way to proceed. Grey and Streshly (2008) examined the application of Collins' (2001) research to determine whether it could apply to school leaders to determine if

there were identifiable characteristics of successful school leaders that correlated with long-term educational success. They found that all of the principals interviewed acknowledged the importance of effective teachers at their schools. The differences between the successful principals and the comparison principals were in the way they focused on their district's hiring procedures (Grey & Streshly, 2008). Their research corresponded with '' identifying the hiring practice of "First Who, Then What" as one of the commonalities among successful school principals.

Recently, there has been an increased interest in the relationship between teacher effectiveness and administrators' hiring practices, with evidence that variation in teacher effectiveness impacts student achievement (Rivkin, Hanushek, & Kain, 2005). The ways in which teachers are screened and selected is of increasing importance, potentially resulting in long-term gains in student outcomes (Rutledge, Harris, Thompson, & Ingle, 2008). Finding effective, mission-and-vision aligned teachers is critical for any school or school system (Lenz, 2010). An important action in education is the selection of teachers. In order to maximize the academic achievement of students, deliberate efforts must be made to select those prospective teachers (Hefele, 1971).

While researchers identified desired knowledge of technology and technology skills and their link to student learning, there does not appear to be a unified path between the knowledge of technology and skills and the selection criteria. Failure to bring the two areas together creates a disconnect in the teacher selection criteria and impedes districts from hiring the teachers who possess the knowledge and skills that research claims are intricately connected to student learning (Danielson, 2007; Marzano, Pickering, & Pollock , 2001; Stronge & Hindman, 2006).

School leaders must identify candidates who possess those qualities in order to improve the quality of instruction in our nation‘s classrooms.

Teacher hiring practices are significant to the future of education in this nation. The hiring of competent, well-trained professionals, who have the knowledge of technology and the ability to integrate technology in the classroom should be the norm rather than a rare exception (Ornstein, 1988). Nevertheless, the teacher hiring process is one of the least researched areas of educational administration (Boyd, Goldhaber, Lankford, Loeb, & Wyckoff, 2007; DeArmond & Goldhaber, 2005; Guarino, Santibañez & Daley, 2006). Therefore, the role of the school administrator is important when evaluating the hiring process for potential teachers.

Role of the Principal

The hiring process is one of the most critical aspects of a principal’s role and responsibilities due to the tremendous impact that one teacher may potentially have on the lives of hundreds of students. Relatively little research exists on principals and their role in the hiring of teachers (Boody, 2008; Liu & Johnson, 2006; Mason & Schroeder, 2010). Hiring teachers should be considered one of the most important duties of an administrator. Principals potentially hold a key position in the teacher hiring process for their schools (Baker & Cooper, 2005; Seyfarth, 2008). When principals hire new teachers, it is essential that the principal understands the importance of each hire as it relates to student achievement (Caldwell, 1993).

Hiring effective teachers to ensure overall school success is one of the most important responsibilities of a principal (Mason & Schroeder, 2010). Student learning must be at the center of all hiring decisions as all students deserve to have the best teacher possible (Behrstock & Coggshall, 2009; Stronge & Hindman, 2006). Principals could promote student achievement by hiring and maintaining effective teachers (Grissom, 2011; Jacob, 2011). When principals have

authority and training in the hiring process, they have a better opportunity to select and hire effective teachers needed for their students and schools (Kersten, 2008; National Council on Teacher Quality, 2010). Principals' hiring decisions make a long-term difference to school district quality.

The extent of principal involvement in hiring is generally limited to interviewing (National Council on Teacher Quality, 2010). The interview is typically used for making the final hiring decision to recommend the candidate to the local school board of education (Mason & Schroeder, 2010). Local schools may conduct team or one-on-one interviews with potential teachers. Borg (2009) researched a committee approach by Providence Schools in Rhode Island, incorporating both administrators and teachers. While some large school districts may utilize a human resource department, former Washington D.C. Chancellor, Michelle Rhee, wants principals to be involved in the selection process because a shared vision cannot exist if the principal is not allowed to be involved in the selection of players on the team (Mathews, 2008).

Bringing the employment decision to the building levels enables schools to identify which teachers are the best match or fit for the position. With increased accountability, principals and teachers in that particular building share the responsibility of that schools' performance and should have input in the selection criteria for that open position (Boyd et al., 2007). In a study of 30 principals in a midsized Florida school district (Harris, Ingle, Rutledge, & Thompson, 2010), a quantitative analysis was conducted and the results indicated a relationship between the principals' goals for their school and the candidates' knowledge of student assessments as they related to the school's goals.

Principals that match their school's goals and philosophy during the interview enable the hiring administrator to have insight into the candidate who will be the most effective teacher in

the classroom (Rutledge et al., 2010). Also, the more experience principals had in the school district, the more effective they were at developing selection criteria to match the school's culture to the potential teacher candidate for hire (Papa & Baxter, 2008). Principals play an important role in determining the quality of their schools because, through the teacher hiring process, they can make a difference in student achievement and bring about improved student learning (Seyfarth, 2005).

Bowers (2008) used Collins' research and applied it to the case study of a single-high performing school district. The purpose of Bowers' study was to examine how the districts used Collins' work and if it could be applicable to other school districts. Bowers used qualitative data from interviews, observations, and document reviews, and focused his study on the leader of the school being the central figure to implement change and improve performance. Bowers also focused on the similarities of the district and Collins' principles of great corporations. According to Bowers, the leadership of the successful school used this process to reduce the risk of hiring people who did not perform or work well within the organization.

If principals are given the opportunity to be involved in the hiring process, they are required to use the local school district's job descriptions as the minimum job criteria, but they have the flexibility to incorporate additional criteria that meet the needs of their individual schools (ALSDE, 2014). A school district's success in attracting, selecting, and retaining technologically competent teachers determines its ability to improve student achievement and prepare students to become responsible and productive citizens in adulthood (Bolz, 2009; Peterson, 2002; Rothman, 2004; Seyfarth, 2005). School districts should review research on the characteristics of technologically competent teachers that principals need to consider when developing the selection criteria. The importance of a principal's hiring not only impacts the

academic achievement of students but also the economic costs of teacher turnover. According to the National Commission on Teaching and America's Future (2003), even 12 years ago, it cost school districts an average of $50,000 to recruit, hire, prepare, and lose a teacher.

Collins (2001) states a leader must first establish who needs to be on the team before deciding who to hire. Principals need to establish what makes an effective teacher in their school and, more importantly, make certain that the hiring process that is in place results in the employment of teachers who meet the established criteria from the available pool of candidates. Prior to hiring potential candidates, clearly identified guidelines and priorities should be used to determine who to hire (Lewis, 1998). It is principal's responsibility to ensure that candidates who demonstrate the identified technology competencies are hired thoughtfully, using effective selection criteria.

Teacher Selection Criteria

Teacher selection criteria are a critical component to the hiring process. The development of teacher selection criteria is varied based on school district. Often administrators determine what the personnel needs are in the district and school by identifying teaching positions that are available due to vacancies. Once the available positions are determined, the selection criteria are communicated to potential teacher candidates through job descriptions posted online (ALSDE, 2014).

In teacher selection in Alabama, the local school system develops the minimum job criteria based on the requirements from the state department and the needs of the local school system (ALSDE, 2014). Selection procedures are an information-gathering and decision-making process. The selection process should create a situation where potential teachers are selected

based on a multitude of factors that ultimately influence student achievement (Stronge & Hindman, 2006).

Research has found that principals generally follow a prescribed approach to teacher selection, as defined by their respective districts; these policies and practices, along with standards to critique teacher candidates, vary from district to district and they may deviate from best practices (Stronge & Hindman, 2006). The review of the literature makes it clear that the interview is the primary tool to assist principals with their decisions on which candidate to recommend for hiring (Rutledge, Harris, Thompson, & Ingle, 2008). The selection criteria used in the interview process may be stated in a district's policy documents or identified in selection criteria and retention supports for newly hired teachers. Occasionally, these criteria appear in the form of key phrases that interviewers are to listen for in responses during the interview (Young, Levin, &Wallin, 2007).

Within some school boards or districts, hiring teams or principals may not have local policies to guide their selection process. In this case, hiring teams may be guided by personal perceptions and assessments (Cranston, 2012). To complicate the selection of hiring new teachers, it may be that individuals or teams have different conceptions of teacher effectiveness (Little, Goe, & Bell, 2009) and little time to establish common conceptions during the processes used in their district. In the absence of time and structure to ensure that hiring administrators share a common vision for those teachers they hire, defining an effective teacher may, in actual hiring practice, be a subjective and interpretive act (Cochran-Smith & Power, 2010; Rabinowicz & Travers, 1953) resulting in less than optimal hiring decisions.

Research is limited on teacher selection criteria and principals' practices concerning technological competencies in the selection criteria for potential teachers (Lankford, Loeb, &

Wyckoff, 2002). The inclusion of these variables on the selection criteria calls for further research. The selection criteria for teachers are important because the criteria enable the principal to identify and evaluate the best possible candidate who will positively impact student outcomes.

Summary

The literature supports that teachers' knowledge of technology and technological skills impact student achievement. Researchers have identified the selection criteria utilized to evaluate potential teachers as an important variable in building powerful educational reforms (Leithwood & Riehl, 2003). However, little research has been conducted on principals' practices concerning technological competencies in the selection criteria of potential teachers.

CHAPTER 3

METHODOLOGY

Introduction

The purpose of this multisite case study is to investigate high school principals' practices concerning technological competencies included in the selection criteria for potential teachers. This study will employ a qualitative approach. Qualitative research is an exploratory process used to investigate natural occurrences, allowing the researcher to understand these events as seen by others within that environment (Creswell, 2007). Nine secondary school principals were interviewed and the interviews were transcribed. Field notes were taken during the interviews, and the following documents were collected: teacher job descriptions and local education hiring policies and procedures for potential teachers. Coding categories were developed and refined on an ongoing basis, guided by the study's framework, including teachers' technological competencies.

Setting

A northern county in Alabama is the third most populated county in the state and is located in the heart of the Tennessee Valley. The county includes 806 square miles and has approximately 343,080 residents. The county has the highest percentage of engineers in the country, more PhDs per capita than any city in the country, and an unemployment rate of 5.9%. There are 59 Fortune 500 companies in the area, numerous Foreign-based companies, and two publicly traded companies. This study will evaluate secondary principals from two school

systems (School System A and School System B) in this northern Alabama County. System A is a county school system and System B is a city school system.

School System A currently has 17 elementary schools; 4 middle schools; and 6 high schools. Additionally there is one alternative school, PACE Academy, and the County Career Technical Center, providing services for 23,965 students. School system A is beginning to integrate pilot classrooms implementing the Bring Your Own Device Technology (BYOT) initiative in high school classrooms.

School system B is one of the premier school districts in the state. The school system provides services to over 23,000 students and offers 64 Pre-K programs, 21 elementary schools, 5 middle schools and 1 junior high, 7 high schools, 5 P-8 schools (2 of which are Magnet Schools). School system B has fully integrated the Digital 1:1 initiative within the whole school system, Kindergarten through 12th grade. Each student is issued a laptop and every teacher is responsible for integrating a digital curriculum with digital textbooks.

Participants

Following the approval of the Institutional Review Board and the local school systems, the researcher investigated and interpreted the principals' practices concerning technological competencies in the selection criteria for potential teachers by interviewing nine principals at nine different secondary schools in two north Alabama school systems. The participants were selected as part of a convenience sample, but had to be involved in the hiring process and agree to be interviewed. No other criteria were used as the principals for every school in the systems who participated in the hiring process were asked to participate. Five principals were interviewed from school system A and four principals were interviewed from school system B. The interviews took place at each principal's local school. The interviews were recorded, and field

notes were taken throughout the interview process. Each principal had the option to review the transcript for clarity of their responses. The interviews were approximately thirty minutes. These participants have all been involved in the hiring process within their school system. Since building principals are primarily involved in interviewing potential teachers and recommending candidates to the local school board, they were the most logical source of information on school district employment practices. The nine principals consisted of one female and eight males. All nine participants held a Master's degree. They averaged 10 years of involvement with the hiring process. The intent of the approach was to investigate principals' practices concerning technological competencies in selection criteria for potential teachers. Table 1 provides basic demographic and educational information about the participants of the study. Pseudonyms have been assigned to all participants in the study because they are referenced throughout this chapter.

Table 1

Demographic Information

	Gender	***Race***	***Years of Administrative Experience***	***Total Years of Experience in Education***	***School District***	***Familiar with Collins' Theory***
Participant 1	M	Caucasian	14 years	18 years	A	Yes
Participant 2	M	Caucasian	20 years	27 years	A	Yes
Participant 3	M	Caucasian	14 years	22 years	A	Yes
Participant 4	M	Caucasian	8 years	15 years	A	Yes
Participant 5	M	Caucasian	11 years	25 years	A	Yes
Participant 6	M	Caucasian	6 years	24 years	B	Yes
Participant 7	F	Caucasian	4 years	21 years	B	Yes
Participant 8	M	Caucasian	4 years	11 years	B	Yes
Participant 9	M	African American	10 years	14 years	B	No

Instrumentation

The goal of this study was to investigate high school principals' practices concerning technological competencies in the selection criteria for potential teachers. The investigation was a multisite case study using qualitative research methods. Data were collected through interviews, field notes and documents. Interviews were the primary method of data collection. The information obtained through the interviews formed the basis for the overall findings of this study. The interviews utilized open ended questions and focused upon Collins' (2001) "Good to Great Theory-Disciplined People: First Who…Then What," and the knowledge and skills outlined in the International Technology Standards for Teachers (ITSE, 2014) to determine what technology competencies are evident in the hiring criteria for potential teachers and the practices of principals. Interview questions 1 and 2 relate to Collins' framework because they pertain to the hiring process for potential teachers focusing on the "First Who…Then What" concept. Interview questions 3-11 focus on teachers' knowledge of technology and ability to integrate technology in the classroom as outlined in The International Technology Standards for Teachers. The information obtained through the interviews formed the basis for the overall findings of this study.

Researcher Positionality

Researcher Background

Throughout my twelve years of teaching at both the elementary and secondary level, I made it my personal mission to purposefully integrate technology into the curriculum. I have also served on numerous school and district technology planning teams. Part of the planning team's responsibility was to evaluate both local school and district technology data. We identified areas of improvement and let that be the guide for the development of technology

goals and objectives. Having a unique inside perspective helped me to realize the urgency of teachers across all content areas needing to be technologically competent.

Researcher Bias

Having worked in higher education as a research assistant, I am passionate about my research. In working with the research and data, I felt that something was missing. I have studied, presented and written papers on the impact of technology on student achievement. I had a desire to integrate theories I had learned in graduate school into the classroom. With the knowledge of how technology could positively impact students, it has created a view of how I would like to approach integrating technology throughout my classroom and now for the entire school. Much of what has shaped me as a teacher in belief and practice has come from practically applying my research. Change is inevitable. Daggett (2010) states what while education is a reflection of society as a whole, when society goes through a change then education must also go through the change in order to remain viable (2008). It is in this view of change that I have developed as a teacher leader. In the research that I have conducted and the experience inside the classroom, I have seen as DuFour and Marzano (2011) referenced the evolution of solutions that use the institution's past rather than the future needs of students as its foundation. This has motivated my need for the current research and shaped my perspective. As a qualitative researcher, I am interested in the story behind the research. I will protect against personal bias in this study by engaging in ongoing critical self-reflection by way of dialogue with professional colleagues. Triangulation of data sources and triangulation of methods were implemented to strengthen the credibility of the research.

Research Questions

What are high school principals' practices concerning technological competencies in the selection criteria for potential teachers?

Sub Questions

1. What are high school principals' practices concerning potential teachers knowledge of technology in the selection criteria?

2. What are high school principals' practices concerning potential teacher's ability to integrate technology in the classroom within the selection criteria?

3. How do high school principals determine if potential teachers have the expected knowledge of technology and ability to integrate technology in the classroom?

Data Collection

The framework assisted in developing research questions, informed how the data were collected and analyzed, and created an orienting lens for both the researcher and readers (Creswell, 2007). It also served to connect the purpose and significance of the findings to the hiring process for potential teachers. Triangulation was used in order to increase the validity of the qualitative research results. This method relies on finding multiple methods of collecting data so that data are supplied from three or more sources of information. These multiple sources then provide corroborating evidence of the participant's perspectives (Creswell, 2007). The three data sources that were used to triangulate information in this study were the use of interviews, field notes and documents. The data from these three sources provided a more complete picture of the consideration of technology in the selection criteria, as well as data from one source verifying data from another source.

Open-ended questions were used in the current study's interviews to encourage extensive answers utilizing participant knowledge and feelings (Hendricks, 2009). The purpose is to gain a broader perspective on high school principals' practices concerning technological competencies in the selection criteria for potential teachers. Each interviewee was identified by a pseudonym to ensure confidentiality. The interviews were conducted face to face at the principal's local school building and lasted approximately thirty minutes. Interview questions can be found in Appendix A.

Field notes were taken during the interviews. These notes assisted the researcher in developing a word picture of the setting and conversation during the interview process. The documents collected and reviewed were the teacher job descriptions and local education hiring policies and procedures for potential teachers. Table 2 visually illustrates the documentation collected from both school systems.

Table 2

School System Documentation

School District A Documents	**School District B Documents**
Teacher Job Description Teacher Policy Manual Local Policy Manual Local Hiring Procedures	Teacher Job Description Teacher Policy Manual Local Policy Manual Local Hiring Procedures

Data Analysis

Data were collected in the form of interviews, field notes, and documents to investigate high school principals' practices concerning technological competencies in the selection criteria for potential teachers. Interview transcripts, field notes and documents were typed and digitally organized according to the date on which they were collected. During data collection and analysis, the researcher looked for evidence of indicators outlined in The International

Technology Standards for Teachers and Collins' framework (Collins' 2001 & ISTE, 2014). Data analysis occurred concurrently with data collection (Creswell, 2007). As the researcher completed the interviews, she personally transcribed the audio recordings for each interview. Immediately following the transcription of each interview the transcripts were organized into folders on her computer. She printed multiple hard copies of each interview and placed them in a binder. The researcher manually coded all data. Beginning the coding process the researcher created a chart on a white board with three columns (initial codes, categories, and themes) and nine rows (one for each participant). The first row had the identified participant and the first column was the initial identified codes.

During the coding process, the International Technology Standards for Teachers and Collins' framework guided code development (Collins, 2001 & ISTE, 2014). Beginning with the interview transcripts, the first participant's transcript was read and examined for initial codes. The researcher used a highlighter to mark initial codes throughout the first transcript. Immediately following the review of the first transcript the initial codes were written on a white board next to the participant's name. The second interview transcript was then evaluated for initial codes found in the first participant's interview transcript, as well as for new codes. If new codes were found, then the first participant's interview transcript was reread. Both similar codes and new codes were noted on the white board next to the participant's names. This process was continued until all transcripts were evaluated for initial codes and similar codes.

This analysis and reanalysis process continued over and over until a cohesive body of codes had been discovered (Creswell, 2007). The initial round of coding provided codes such as "technology knowledge," "technology integration," "inconsistent evaluation of technology," "technology skills," "technology use," "technology instructional strategies," "technology

planning," "no evaluation of technology," "teachers providing demonstration," "occasional evaluation of technology," "evaluate ability to integrate technology," and "evaluate knowledge of technology." Following the identification of the initial codes the researcher grouped codes into conceptual categories that reflect commonalities among codes. This process is known as axial coding. The codes were then sorted and arranged to create four categories of relationships between and among the themes: technological competencies, technology pedagogy, inconsistent evaluation and addressing the disparity.

Likewise, as she completed field notes and collected pertinent school district documents, she began analyzing and coding the documents and field notes, looking for similarities in, philosophies, policies, mission statements, hiring procedures, technology use and other relative points of comparison. Similarly, once these documents for the study were gathered, she read, reviewed, and coded the documents, noting the evidence of the International Technology Standards for Teachers and Collins' framework (Collins 2001 & ISTE, 2014). Merriam (1998) also explains that "devising categories is largely an intuitive process, but it is also systematic and informed by the study's purpose, the investigator's orientation and knowledge, and the meanings made explicit by the participants" (p. 179). Repeated readings and coding not only allowed the researcher to reduce and organize the data, but also led her to establish connections between the data collected and the research questions (Creswell, 2007).

Multiple readings of interview transcripts and constant coding allowed the researcher to "make sense out of the data" (Merriam, 1998, p. 178) and determine the recurring ideas and themes present in the raw data. The researcher eventually cross-referenced the data to develop the final themes and descriptions (Creswell, 2007) based on the in-depth understanding that arose from analysis. Therefore, using the study's framework as a basis for coding the data, the

researcher was able to establish connections between the collected data and the research questions. Four themes emerged from data analysis: (a) Basic Knowledge of Technology; (b) Integrate Technology Daily; (c) Inconsistency of Selection Criteria; and (d) Changing Selection Criteria. As proposed by Creswell (2007), after these themes were established, the researcher used them in order to interpret the data with the goal of answering the established research questions. Figure 2 displays the coding process and final themes that emerged from the data. The researcher used the emerging themes and descriptions as a basis for interpretation and reported her findings in Chapter 4.

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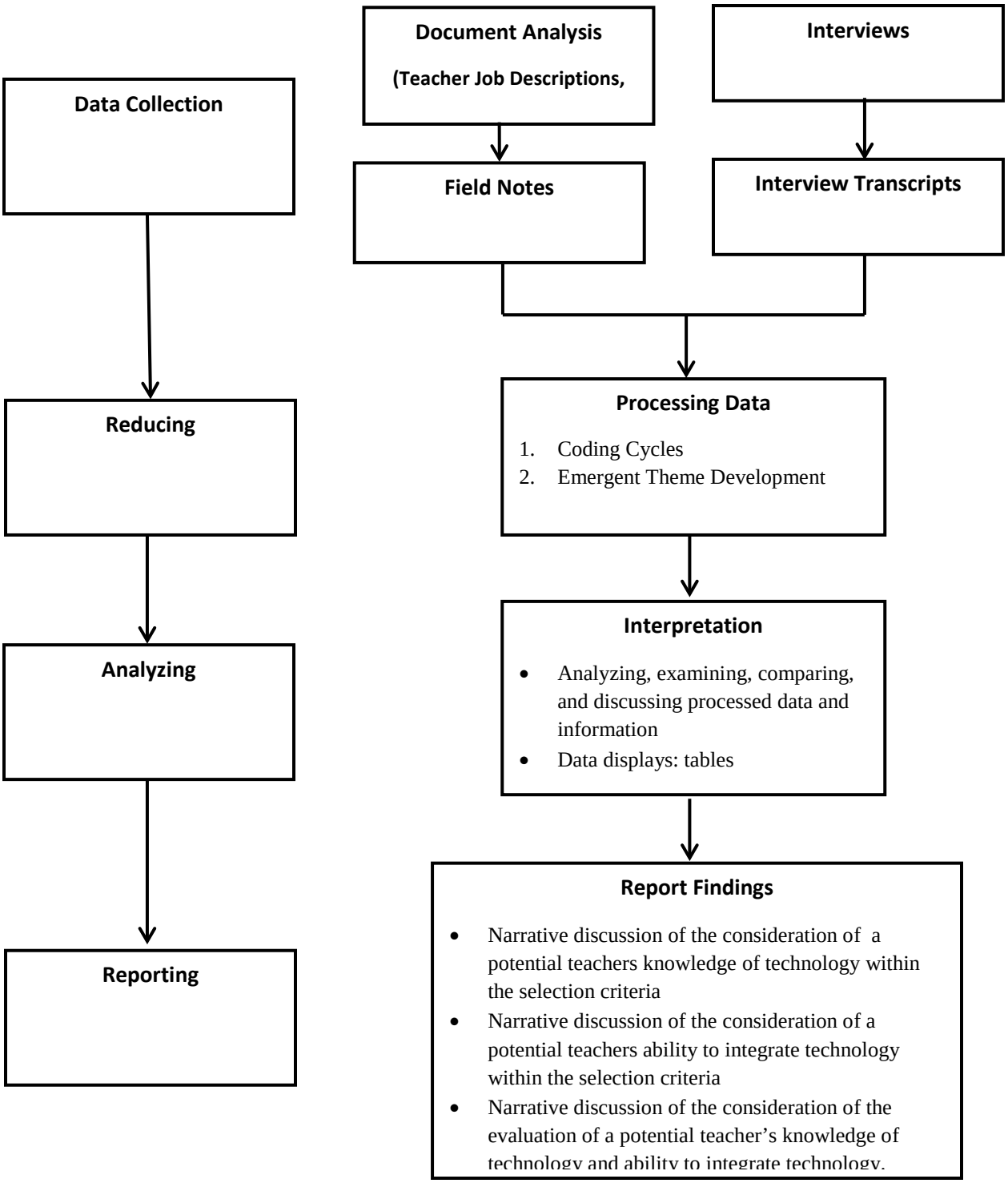

Figure 1. Chart Illustrating Data Collection and Analysis Processes.

The diagram used for this study was adapted from the work of Miles and Huberman (1994) and Van Do, Dorner, and Gorman (2010).

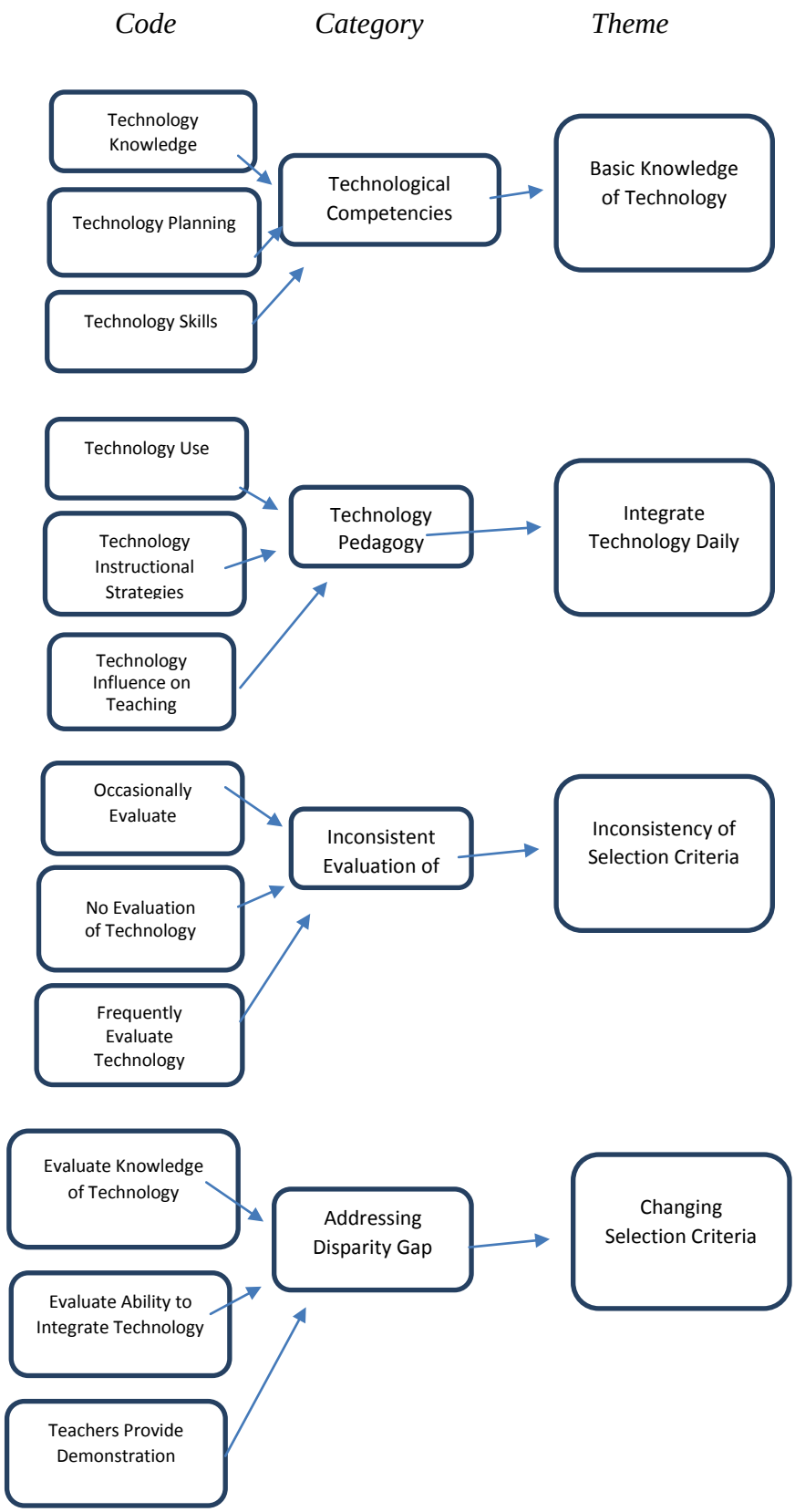

Figure 2: Code to Theme Model

CHAPTER 4

RESULTS

Introduction

The purpose of this multisite case study was to investigate high school principals' practices concerning technological competencies in the selection criteria for potential teachers. It is anticipated that, through a better understanding of the current selection criteria for potential teachers, more informed decisions can be made by local systems, policy makers and administrators regarding the hiring process. This may lead to the hiring of highly effective teachers who positively impact the use of technology by 21st century students. This chapter presents the key findings obtained from nine in-depth interviews, field notes, and district documentation. Four major themes emerged from this study:

1. The importance of potential teachers' possessing a basic working knowledge of technology.
2. Expectation that all teachers should integrate technology daily within the classroom.
3. A lack of consistency in the selection criteria for determining a teachers' knowledge of technology and their ability to integrate technology within the classroom.
4. Changing current selection criteria.

Following is a discussion of the themes with details that support and explain each theme. The researcher set out to document and capture a variety of experiences, and provide an opportunity for the reader to gain a better understanding of the research participants' experiences and practices. The themes are organized according to the research questions. Data from

individual interviews, field notes and school district documents revealed principals' practices and their experiences. By using participants' own words, the researcher aimed to allow readers to gain insight to the participants' practices and experiences with the hiring process. The researcher's aimed to deconstruct the data collected by chunking data to tell the "story of the research."

Analysis of Themes

Theme 1

The first theme that emerged was the importance for potential teachers to possess a basic working knowledge of technology, and all of the participants indicated its importance. Participants expressed the importance in the following ways. Participant 8 reiterated the importance of teachers having a basic understanding of technology tools and teachers having the knowledge of those tools in order to effectively integrate technology into their classroom instruction. He stated:

> There are some basics things that all teachers should be able to do. Basics of managing Office Suite, sending and receiving emails, using an active board, but then it goes a little deeper once the hiring process happens; a lot of technology and other types of skills associated with teaching. We not only train our new hires because not a lot of districts are one to one and not a lot of colleges are training teachers how to use the one to one tools, we are finding we have to train new teachers how to use technology appropriately in the classroom.

Participant 9 pointed out the negative impact of hiring teachers that lack knowledge of technology tools, stating

> You have to have a working knowledge of how technology works and how to troubleshoot because inevitably it will stop working, and if teachers are not at least familiar with their devices, they don't know how to troubleshoot. A lot of time learning stalls occur as the teacher is fumbling around 15-20 minutes trying to call a tech person; if you don't know how to troubleshoot it really becomes a classroom management issue in regard to technology because now the kids are sitting there as well not able to use their devices. They are waiting on you because you are not familiar with your device.

Participant 8 also surmised that "The biggest piece with technology is not learning a particular hard skill; it's having the skill of being a lifelong learner and constantly evolving. There are some basic things that any teacher should be exposed to. They should be using social media, they should know how to use it appropriately and how to teach students how to use it appropriately."

Participant 1 stated it is important for teachers to have a working knowledge of technology in order to immerse their classroom in technology. "We think it is very important for potential teachers to have a working knowledge of technology in order to manage and immerse the classroom with technology."

Participant 2 agreed that all potential teachers should have a working knowledge of technology by stating the following: "I would say having a working knowledge of mobis and projectors and being able to integrate short videos into PowerPoints as attention grabbers or as part of a lesson. Having the knowledge to integrate technology into your classroom."

Participant 3 stated the following: "I want potential teachers to know how to use student learning management systems and smart boards. I need to know if they truly have the knowledge

of how to integrate technology into instruction or just give examples but not fully understand how to integrate technology." Participant 4 agreed with other participants by stating "I think it is important for all potential teachers to have a working knowledge of technology to build a connection with their students and to stay on an even level with them."

All principals from both districts agreed that it is important that potential teachers have knowledge of composing emails and communicating with all stakeholders electronically. Also, principals emphasized the knowledge and skills of using smartboards, presentation software, smartphones, word processors, tutorials, and webinars, indicating that skills in these areas are very important for potential teachers to possess. Theme 1 reiterates the perception of all participants' value of potential teachers' knowledge of technology, however participants stated there is a discrepancy in their evaluation of potentially teachers' knowledge of technology within their local selection criteria.

Theme 2

The second theme that emerged was a majority of participants indicating their expectation of all teachers' integration of technology daily within the classroom.

Participant 9 supported this theme, stating "We expect it to be done every day. Not so much the teacher utilizing it but teaching students how to utilize it to show their learning." Participant 1 was more specific in his expectation of all teachers integrating technology within their content area. He stated, "Well I think they need to immerse technology through their curriculum and their content standards."

One of the participants, Participant 5, had a more open expectation of teachers having a basic knowledge of technology, but a willingness to learn and expand that knowledge. He stated,

> We are not looking for anything specific other than we are looking for effort to employ technology. Because first of all kids are attached to it to them if you are not using technology with them today you are boring them to death, and it doesn't always have to be something high level just and effort on the part of the teacher to implement the use of technology in some way, and a willingness to try to expand their knowledge of the use of technology.

Participant 7 maintained "I do expect them to somehow some way use technology daily. It is part of our life," while Participant 2 stated, "You need to be able to know how to integrate technology in the classroom, especially since we have wifi and BYOT. A teacher needs to be able to integrate technology into the classroom." Participant 6 stated the following: "I want all teachers to integrate technology; first thing you have to establish a relationship with students to identify their strengths and weaknesses. By understanding personalities, strengths and weaknesses then you can use technology to meet student needs."

Each participant indicated they expect all teachers to use technology to engage today's learners. Participants reported the ability to integrate technology in the classroom is important for all teachers. However, each principal indicated that, throughout all subject areas, it is important for teachers to integrate technology within their curriculum depending on their individual comfort level. Participant 4 stated that "I truly believe that the connection from teacher to students is through technology" and Participant 5 agreed: "For new teachers I expect them to integrate technology daily." Participant 2 concurs by stating "I don't have the expectation of technology being utilized a certain number of times a day, but I do stress that it needs to be a part of the classroom daily. I don't look for it in their lesson plans to see that it is occurring but it is

important." Theme 2 reveals the consensus among all participants of finding daily integration of technology essential.

Theme 3

The third theme referenced the lack of consistency in the selection criteria for determining a teacher's knowledge of technology and their ability to integrate technology within the classroom. Throughout the analysis of their responses it was evident that there was a lack of clarity and consistency with evaluating those components. Different respondents used different methods for determining what potential teachers knew and could do technologically. Participant 5 maintained that by asking the correct questions, the technology knowledge and skills could be determined. Participant 5 stated,

> "You can tell by asking the right questions. For instance, instead of asking, do you know how to use technology, you ask, how do you use technology in the classroom? You can tell by someone's responses whether they are comfortable with technology or not. If you ask the right questions in the right way you can get a window to peer into their knowledge base of technology."

Participant 3 stated that he could determine knowledge and skill levels though questions and talking to references. He responded,

> Based on what they tell you in the interview process, their knowledge of technology is evident. For example, I interviewed a potential teaching candidate and you would think based on her answers that she was the top technology person in the state. She had great examples of technology integration. When school started she had no clue how to implement technology into the classroom and I

> would have considered her having a very low level of technology knowledge and ability to integrate technology."

Participant 2 maintained that having the potential teacher discuss an actual lesson could help in the determination of technological knowledge and skills. He stated:

> "A lot of interviewees know the verbiage, but when you say take me through a lesson where you might use that, this has them think about it a little more and demonstrate how they would apply it. They can read that document cameras are great, but how do they actually use one in the classroom?"

Participant 7 responded, "When I call them to the school interview I ask them if are they comfortable with technology; can you tell me anything you used in your internship? Participant 6 reported that he determines if a potential teacher has the expected technology knowledge and ability to integrate technology through their past experiences and classroom work samples. He stated, "I think it's a lot of experience and the confidence they voice. You can also look at projects in which they may have participated in the past. So many come in today with websites, and as a principal you are able to look up actual classroom assignments the potential candidate has conducted including unit exams, and lesson plans and as a principal evaluating for technology competencies that nails it pretty quickly to me."

Participant 5 surmised that determination of technological knowledge and skills may be gained by hearing between the lines of what the potential candidate is saying.

> Again it is based on the answers that they give. You basically have to trust your gut when they are giving you an answer. You get a feel of whether they know what they are talking about. As you go through the interview questions, that is not going to be their only reference to technology. They are going to talk about it and

> about specific technology and how they use it in the classroom. You are going to pick up on it if they know what they are talking about."

Participant 8 said,

> Similarly I ask them how they have applied it [technology] in the past. What would I see when I walk into the classroom? What we end up doing is we will go back and see if what we saw in the interview is applied in the classroom. In the state of Alabama and in a lot of other states, teachers will receive tenure after three years, but until then they are probationary. We can see if what they told us matches up to the classroom, but more importantly we will see whether the results are there. To me there are a lot of different ways to go about solving the same problem, that's another great point of technology, there are a lot of different ways to do things."

Participant 4 responded that although there is no hands on observation of a potential teacher, the depth of the conversation can help identify technological skills and knowledge: "Unfortunately through the interview process, the conversation, is not hands on but then again conversations get into depth about their use of technology or one particular method of using technology more than another. You can just tell by where the conversation goes." As a result all participants identified inconsistencies in their selection criteria.

Theme 4

A fourth theme that emerged concerned the need to change current selection criteria. All participants had suggestions on how they would like to see the hiring process revised. Participant 9 stated, "I almost think they should be able to do a demonstration. You tell them

beforehand we would like to see a 10-15 minute lesson with the use of technology and I think you would get a very good idea about what they are able to do."

Participant 4 agreed and stated, "They would have a room set up with all the technology that is in their building as well as some of the newer things we may use and have them lead by example or go through a lesson. I think that is about the only way you can assess their ability to apply their technology knowledge and skills." Participant 8 has sometimes had potential teachers demonstrate a lesson: "One thing I have done in the past, I have had a teacher come and teach a lesson one thing I would like to do if I had more time to bring in a group of students and ask the teacher in advance to prepare a lesson and then to teach that lesson using integrating technology in front of that class."

Participant 1 felt he needed more time because interviews were rushed: "I would say a lot of time it is so rushed when you are going through this process. If we had more time to go through the interview process with each person to really exhaust what we are looking for and to see what they know through using a technology device." Participant 5 thinks that measuring student engagement would be helpful to the interview process:

> Knowing about technology and knowing how to use it to engage kids is two different things. If you could somehow measure student engagement based on the teachers' technology knowledge. Some people can take clickers, just a lousy clicker response system, and get more out of it with kids than somebody who has a big elaborate set up. So if we could gauge how much a teacher can draw students into a lesson with technology, it would be valuable to know.

Participant 2 stated, "I think giving them an exercise to do pre interview. I don't think you can give it to them and have them bring it with them because they could have other people

help them do it. I think a small exercise to do a PowerPoint or something would probably be beneficial." Leo responded that "A program that would test for teachers' knowledge of technology and their ability to integrate technology; a program that would assess teacher's proficiency similar to a personality test." These findings reveal the participants acknowledge the disparity in the selection criteria and recommend changes to address the identified discrepancies.

Findings from School District Documents

School System A

An analysis of School System A's documents, including policy and procedures and teacher handbooks, described the mission for School System A as to create and support high quality public schools that maximize student achievement, expand student opportunities, and prepare graduates for success in a globally-competitive world. One of four guiding principles for the school district is to recruit highly qualified, technically proficient, skilled teachers who are engaged in continuing professional development and provide rigorous, relevant and engaging instruction.

Technology is a focus in School System A. They have worked to update the district and school websites, increased hardware at the schools and provide training for teachers. The district's annual technology report indicated they are struggling to continue to update technology due to fiscal restraints. However, technology integration is reported to be a key focus for the school system according to the Technology Plan which states:

> Technology has been a tremendous focus in our system as we have worked to update the district and school websites, implemented the School Messenger calling system throughout the district, increased hardware at the schools, provided training for teachers, and rolled-out the INow system recently

adopted in Alabama. We are now struggling to update technology due to fiscal restraints. School leaders are working with local PTA/PTO and/or business partners to continue funding and upgrading technology in schools.

According to School System A's online documentation and principals' responses, the following is their process and criteria for potential teacher applicants. A potential teacher must first complete the online certified employment application through the Alabama State Department of Education applicant tracking system website. Then it is the responsibility of each principal to review the online applications and determine eligible candidates to interview. The principal will review the application for the following documentation: proof of state certification or eligibility for certification, documentation of Alabama Highly Qualified status, and college transcripts.

The principal, assistant principal or office staff member contacts potential candidates to set up an interview. The principal is responsible for conducting the interviews, documenting the interviews, and completing reference checks prior to making an employment recommendation. The school system has a teacher job description that lists the essential functions for a teacher within the school system. Principals may use the job description as part of their selection criteria or develop their own criteria based on the needs of their school.

The current job description was last updated in 2002 and each principal interviewed within the school system for this study reported that they do not use the job description because it is generic and the minimum criteria for all teachers. Also, all principals indicated they do not have a formulated list of questions to guide the interview process for all potential teachers. They prefer to have a conversation with potential candidates and allow each person time to talk about their strengths and what they could contribute to the school system. Finally, the principal makes

a recommendation by submitting a personnel action form with appropriate documentation. Figure 3 displays School System A's Teacher Application and Selection process retrieved from School System Policy Manual.

TEACHER APPLICATION / SELECTION PROCESS

All vacancies are announced by the Personnel Office. Vacancies will be announced by the Personnel Office upon receipt of **REQUEST TO ANNOUNCE POSITION**.

APPLICATION PROCESS

1. Online **CERTIFIED EMPLOYMENT APPLICATION** completed through TeachInAlabama Applicant Tracking System
2. Principal reviews online applications to determine eligible candidates for interview
3. Application reviewed for inclusion of required documents:
   - Proof of Alabama certification or eligibility for certification
   - Documentation of Alabama Highly Qualified status
   - College transcripts
4. Principal conducts interviews, documents interviews, and completes reference checks prior to making an employment recommendation.
5. Principal makes recommendation by submitting a **PERSONNEL ACTION** with appropriate documentation. See SUBMITTING PERSONNEL ACTIONS.
6. See CRIMINAL BACKGROUND SEARCH PRIOR TO EMPLOYMENT.
7. Personnel Office reviews for proper certifications, etc. Recommendations are not processed for applicants who have not met the requirements for employment (**Board Policy 5.2**).
8. Recommended Applicants may not begin work before the Superintendent signs the **PERSONNEL ACTION.**

Figure 3. School System A: Teacher Application/Selection Process

School System B

According to documents including policy and procedures and teacher handbooks, the mission statement of the School System B is to inspire, develop, and engage all students to become career and college ready; creative problem-solvers; active citizens; and life-long learners in a globally connected society. One of the guiding principles is the use of technology and other resources to create personalized learning environments and support varied learning needs of all students. The following is the teacher application process according to School System B hiring policies outlined in their district handbook and data collected during principals' interviews. All potential candidates must submit their application to the Alabama State Department of Education's website. All applicants must submit the following documentation in order to be considered for a position: completed application, official transcript, a copy of a valid Teacher's

Certificate from an accredited college or university, and resume. (Figure 3 displays Teacher Application Information retrieved from the Local Policy Manual).

School System B has a talent management department at their central office. The talent management department is in charge of searching for potential teacher candidates. One person on staff in the talent management department is assigned to a certain principal within the school system to assist in finding potential applicants for that school vacancy. The local principal will work directly with their contact at the talent management department.

The talent management department identifies a potential candidate, contacts the candidate and sets up an interview with the screening committee. The screening committee is comprised of one local principal or assistant principal that serves as the facilitator during the interview process. There are two other employees that may consist of teacher leaders in the building, reading coaches or counselor. Once the district assembles a screening committee, the same three individuals interview potential candidates during spring and summer. The screening committees are provided training by the district regarding the selection process.

Each potential candidate is provided a laptop and a flash drive along with two writing prompts. The candidates are allotted 30 minutes to type a response for each writing prompt. One prompt addresses 21st century learning and in the other they are asked to evaluate a set of data. The potential candidate must complete and save his or her writing prompts onto the flash drive at the central office prior to the face to face interview.

After 30 minutes, the screening committee begins the face-to-face interview. There is a set of 10 questions that are rotated in each interview by the individuals on the screening committee. The 10 questions request information about classroom management, discipline, formative assessment and thought provoking questions. For example, one question is “What is

an event in your life that made you realize you have the power of change?" During the selection process, the screening committee takes individual notes where they scribe the potential candidate's responses. They do not write their opinion, they only write the candidate's responses as they apply to the question. At the end of the interview the screening committee rates the candidate's responses using a rubric ranging from 1-4. Four is the highest score a committee member may rate a potential candidate. The rating of four is competent, 3 is very good, 2 is good, and 1 is fair.

The screening committee then discusses the results and on another piece of paper they write whether they recommend that candidate for hire. They are able to make a special recommendation if they believe that candidate is a good fit for the high school or a particular magnet school and they would write that recommendation down as well. The screening committee's recommendation is then sent to the talent management department. The talent management department then generates a pool of four potential candidates that meet the requirements needed to fill the opening at a local school through the online program SearchSoft. On the Department of Education's website, SearchSoft is an online program that lists statewide job openings. A potential or current employee would create an account and apply for job openings. The four selected candidates have all been prescreened, have completed background checks and have different ethnic backgrounds and gender in order to adhere to the Department of Justice (DOJ) guidelines. The candidates are also highly qualified. Then a local school principal may determine the right personality or fit for their school.

The local school principal is then able to go on SearchSoft and view the four potential candidates for their local school opening. The principal or an appointed representative at the local school contacts the four possible candidates for a local school interview. All principals

from School System B reported they do not have a permanent set of questions that guide their local school interview. Each principal also stated they do not have any input on the job description for potential teachers and they do not use the existing job description as part of their selection criteria.

Most principals indicated they do review potential a candidate's transcripts to review grades for local school openings. An example is all math scores for a potential math teacher. One principal indicated he screens potential candidates' social media activity and evaluates potential inappropriate activity or pictures and professionalism. Once the local school principal makes a recommendation for hire from the four candidates, the recommendation goes to the superintendent and before the school board. The remaining three candidates are cycled back into the pool of potential candidates within the school system.

The principals from both school systems indicated that the hiring process plays an important role in their job description. Each principal interviewed reported they are involved in the interview process for potential candidates at their local school. A majority of the principals indicated they revise their selection criteria yearly in order to meet the changing needs of their student body and their local school. Figure 4 displays the Teacher Application Process retrieved from School System B policy manual. Both school systems' descriptions of hiring policies and procedures found in their local policy manuals are reported in Table 3.

5.2.4 Teacher Application Process –

a. *Submitting Application* –

1. All external applicants (those not employed by the system or persons who work less than 20 hours per week) must apply on the State's website. Employees seeking a transfer or promotion must apply (abbreviated application version) on the State's website (refer to Section 5.2.6, Voluntary Transfers and Promotions).

2. Applications to be considered must include the following items (unless items for employees seeking a transfer or promotion are already on file in HR):

   i. Completed application,

   ii. Copy of Official Transcript,

   iii. Copy of valid Alabama Teacher's Certificate or a letter from an accredited Alabama College or University Certification Officer

   iv. Copy of Out-of-State Teacher's Certificate or a letter from an accredited college or university certification officer in another state (Must obtain a valid Alabama Teaching Certificate before June 30 of the school year for which the teacher is hired), and

   v. Resume.

Figure 4. School System B: Teacher Application Process

Table 3

Comparison of School Systems' Hiring Policies and Procedures

School System	***Mission of District***	***Selection Procedures Noted in Policy Manual***	***Selection Procedures Described by Principals***	***District Screening Process***	***Hiring Authority***	***Digital 1:1 Initiative***
School System A	To create and support high quality public schools that maximize student achievement, expand student opportunities, and prepare graduates for success in a globally-competitive world (District Policy Manual).	1 Principal reviews online applications to determine eligible candidates for interview 2. Principal conducts interviews, documents interviews, and completes reference checks prior to making an employment recommendation. 3 Principal makes recommendation	1.Principal Reviews State Website for potential candidates 2.Principal Reviews Teacher Application 3.Principal Interviews Potential Candidates 4.Principal Recommends Candidate to Local School Board	No	The Board is responsible for making all final hiring decisions, and no hiring decision is official, final, or effective unless and until it is approved by a vote of the Board. No principal, administrator, supervisor, or other employee has authority to hire an applicant without Board approval or to commit the Board to specific action regarding employment	No
School System B	Inspire, develop and engage all students in becoming career and college ready; creative problem solvers; active citizens; and life-long learners in a globally connected society. (HR-P1-R3)	When a vacancy occurs, Committees and/or Principals/Supervisors will screen, interview, and select applicants from the State website	1. Talent Management Team reviews State Website for Potential Candidates 2. Talent Management Team reviews and screens potential candidates' application. 3. Talent Management Team Interviews Potential Candidate with a Screening Committee. 4. Talent Management Team selects 4 candidates for job opening and sends information to Local Principal. 5. Local Principal will interview 4 candidates 6. Local Principal recommends candidate to Local School Board.	Yes	The Board shall make the final decisions to employ, transfer, promote or demote personnel based upon the Superintendent's recommendations. The Board recognizes the Superintendent as the Chief Executive Officer of the Board who has the responsibility for recommending the appointment of personnel and authorizes the Superintendent to review the district's personnel and staffing needs. The Board may pre-approve the Superintendent's recommended high quality candidates (teachers and administrators) through recruiting efforts contained in this policy	Yes

Analysis of Research Questions

Research Question 1

What are high school principals' practices concerning potential teachers knowledge of technology in the selection criteria? The first theme that emerged was the importance for potential teachers to possess a basic working knowledge of technology and was directly aligned with Research Question One. Analyzing the participants' quotes supporting the first theme, it was evident that all of the participants indicated the importance for potential teachers to possess a basic working knowledge of technology. Throughout the interview process all participants from both school districts considered a basic working knowledge of technology important for all potential teachers across all content areas. Each participant considered general questions regarding a potential teachers' basic working knowledge of technology as part of their selection criteria. Document analysis showed that both districts identified technology to be an important focus within their school district. Theme 1 supports the overall framework, by revealing the importance of a potential teacher's knowledge of technology across all content areas. Specifically, aligning with the performance indicators in the Technology Standards for Teachers reporting teachers possess a working knowledge of technology in order to facilitate experiences that advance student learning (ISTE, 2014).

Research Question 2

What are high school principals' practices concerning a potential teacher's ability to integrate technology in the classroom within the selection criteria? The second theme that emerged was that a majority of participants indicated their expectation of all teachers' integration of technology daily within the classroom and was aligned with Research Question Two. Analyzing the participants' quotes supporting the second theme, it was found that all participants

stated the importance of technology integration within all classrooms. Participants indicated they believe it is important to ask questions to inquire about a potential teachers' ability to integrate technology into classroom instruction. Document analysis revealed both districts and all participants emphasized technology integration within all classrooms. This was noted in their current focus of practice and the focus of technology initiatives for both school districts. Theme 2 supports the current framework identifying technology integration within the classroom as an important focus of practice across all content areas also indicated in the International Technology Standards for Teachers (2014).

Research Question 3

How do high school principals determine if potential teachers have the expected knowledge of technology and ability to integrate technology in the classroom? The third theme referenced the lack of consistency in the selection criteria for determining a teacher's knowledge of technology and their ability to integrate technology within the classroom. It was apparent that each participant considered a potential teacher's knowledge of technology and their ability to integrate technology within the classroom important components that would support students in mastering 21st century skills. This aligns with the International Technology Standards for Teachers performance indicators reporting that all teachers will have knowledge of technology and model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support classroom instruction (ISTE, 2014). However, throughout the analysis of participant responses, it was evident that there was a lack of clarity and consistency with evaluating those components. Respondents used a variety of inconsistent methods for determining what potential teachers' knowledge of technology and ability to integrate technology within the classroom. Document analysis supported participant's claims

through vague descriptions listed in both school districts' documentation and limited evaluation on technology within their selection process. Theme 3 corresponds with the study's framework focusing on the first stage of Collins' "Good to Great Theory- Disciplined People: First Who…Then What." This indicator focuses on the importance of selection criteria and devoting time to hiring the right person. All participants aligned with this focus of practice in Collins' theory by placing great emphasis on their selection process and noting their continuous revisions made to the selection criteria in order to meet the needs of the school.

CHAPTER 5

DISCUSSION, IMPLICATIONS, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this multisite case study was to investigate high school principals' practices concerning technological competencies in the selection criteria for potential teachers. It is anticipated, through a better understanding of the current selection criteria for potential teachers, more informed decisions can be made by local systems, policy makers and administrators regarding the hiring process. This process may lead to the hiring of highly effective teachers that positively impact the use of technology by 21st century students. This study employed a qualitative approach. The researcher investigated and interpreted the principals' practices concerning technological competencies in the selection criteria for potential teachers at nine different secondary schools in two north Alabama school systems.

Discussion

There were four major themes that emerged from this study. The first theme was the importance for potential teachers to possess a basic working knowledge of technology. This theme was important in that all participants found knowledge of technology important for all teachers. This theme corresponds with what other researchers have reported. Kleiman (2004) stated that the success of 21st century skills and technology integration depends on the teacher's knowledge of technology and appropriate curriculum design. Teachers must possess technological competencies to effectively teach students in the digital age (Chorzempa, 2011; Lin et al., 2008). The success of 21st century skills and technology integration depends on the teacher's knowledge of technology and appropriate curriculum design (Kleiman, 2004).

According to the National Educational Technology Plan (NETP 2010), technology is critical to addressing the needs of a changing society. Numerous studies have been conducted that reveal the importance of teacher knowledge concerning technology and the ability to integrate technology within the classroom setting (Buckenmeyer, 2010; Flanagan & Jacobsen, 2003; Groff & Mouza, 2008; Hayes, 2006). This theme corresponds with current research results concluding that, for teachers to effectively integrate technology, they need to have knowledge of the relationship between the content they are teaching, the best practices for teaching the content, and the technology they are using (Gronseth, Brush, & Ottenbreit-Leftwich, 2010). However, research shows that teachers are ill prepared to integrate technology into the subjects they teach (NETP, 2014).

The second theme that emerged from this study was the expectation that all teachers should integrate technology daily within the classroom. The incorporation of technology across disciplines in K-12 education is critical to the integration of 21st century skills in the curriculum. In order for teachers to effectively incorporate technology in the curriculum, they must possess technological competencies to provide effective instruction for their students (Chorzempa, 2011; Lin et al., 2008). With growing global access to information, the 21st century skills must be taught and assessed through the use of real-world problems, using real-world tools to develop potential solutions to those problems (ISTE, 2014, Lemke, 2006; Partnership, 2002). The International Society for Technology in Education (2014), states that effective teachers model and apply ISTE Standards for Students (Standards•S) as they design, implement, and assess learning experiences to engage students and improve learning across all content areas.

The third theme that emerged from the study was the lack of consistency of selection criteria for determining a teacher's knowledge of technology and ability to integrate technology

within the classroom. It was apparent that each participant considered a potential teacher's knowledge of technology and ability to integrate technology within the classroom important components that would support students in mastering 21st century skills. However, throughout the analysis of their responses, it was evident that there was a lack of clarity and consistency with evaluating those components. Collins (2001) identifies a key commonality among great leaders as their focus on the hiring process. Great leaders relentlessly refined their selection criteria in order to find the right person for their position. Therefore, it is critical for principals and school leaders to spend time clearly defining and evaluating important technological competencies within the selection criteria. Including technology competencies in the selection criteria would decrease subjectivity and ensure technology competencies are present for all teachers that are hired. This was an apparent focus among all participants through their emphasis on their selection criteria and their persistent effort to revise and strengthen their hiring process for potential teachers.

The fourth theme that emerged concerned changing current selection criteria. Participants commented that they would like to incorporate an opportunity for potential teachers to demonstrate their knowledge of technology and their ability to integrate technology in the classroom. The majority of the participants indicated that there was a gap in identifying the important components regarding a potential teacher's knowledge of technology and ability to integrate technology into the classroom. The participants recommended changes they would like to implement to help fill the gap. Refining selection criteria increases consistency and a better chance to transform our schools from good to great with technology.

Discussion of Research Questions

Research Question 1

What are high school principals' practices concerning potential teachers knowledge of technology in the selection criteria? The first theme that emerged was the importance for potential teachers to possess a basic working knowledge of technology and was directly aligned with Research Question One. Throughout the interview process, it was evident that all participants considered technology competencies an important piece to effective integration of technology within all content areas. Analyzing the participants' quotes it was apparent that a potential teacher needed to possess a basic working knowledge of technology. Participants are currently inquiring about a potential teacher's knowledge of technology through general questions within the selection criteria. However, these questions are not aligned with technology indicators documented in the International Technology Standards for Teachers (ISTE, 2014). Prior to hiring potential candidates, clearly identified guidelines and priorities should be used to determine who to hire (Lewis, 1998). Principals could use current ISTE standards as the indicators utilized in the selection criteria.

Research Question 2

What are high school principals' practices concerning potential teacher's ability to integrate technology in the classroom within the selection criteria? The second theme that emerged was that a majority of participants indicated their expectation of all teachers' integration technology daily within the classroom and was aligned with Research Question Two. Analyzing the participants' quotes supporting the second theme, it was found that all participants stated the importance of technology integration within all classrooms.

Participants indicated they believe it is important to ask questions to inquire about a potential teachers' ability to integrate technology within the classroom. Throughout the interview process all participants discussed their expectation of teachers integrating technology daily. However, participants indicated they did not have a consistent way to evaluate potential candidate responses. Most stated they did not evaluate a teachers' ability to integrate technology other than generalized questions and they would use their best judgment and wait until they were hired and in a classroom setting.

Research Question 3

How do high school principals determine if potential teachers have the expected knowledge of technology and ability to integrate technology in the classroom? The third theme referenced the lack of consistency in the selection criteria for determining a teacher's knowledge of technology and their ability to integrate technology within the classroom. It was apparent that each participant considered a potential teacher's knowledge of technology and their ability to integrate technology within the classroom important components that would support students in mastering 21st century skills. However, participants provided a variety of methods for evaluating these components including the following: listening for technology tools, technology pedagogy, and gut feelings. Immediately after their response each candidate identified the disparity gap between the identified importance of a potential teachers technology competencies and the absence of those competencies within their selection criteria.

Discussion of School Systems

Both school systems identified technology as an important focus as identified in their current guiding principles of practice. The selection process investigated within both school systems yield similarities and differences when selecting potential teachers. School System A

places a lot of responsibility on the local school principal. The principal is responsible for creating a plan of action with their administrators to conduct a thorough search on the State website in order to identify potential candidates for the job opening. Once the principal develops a plan of action, the search through hundreds of possible applicants begins. It is the local school administrator's responsibility to identify potential candidates and personally call to set up an interview. The interview is conducted at the local school using selection criteria developed by the local administrator. The criteria are frequently revised among school principals but do not align with specific standards. Finally, the principal selects a viable candidate and they submit the selected name to the local school board for recommendation for hire. Most participants from School System A indicated the current district hiring process is very time consuming and they could possibly overlook qualified candidates because of the volume of potential candidates.

School System B conducts a screening process at the central office through their Talent and Management Team. A member of the Talent and Management Team is responsible for researching possible candidates on the State website and identifying candidates through their applications. Once a candidate is identified, the team member contacts the candidate to set up an interview. The first interview takes place at the central office with a screening committee. The candidate is provided with a laptop and given a writing prompt. The candidate has 30 minutes type a response to the writing prompt and then the screening committee begins the interview.

The committee has a set of 10 questions and one of those questions pertains to technology. Immediately following the interview, the candidate is evaluated by a rubric and the selection committee makes a recommendation to the Talent and Management team. The local principal with the job opening works with a designated member from the Talent and Management team and is provided 4 candidate names that are all viable candidates for the job

opening. The school principal interviews all four candidates using their locally created selection criteria. The participants indicated they frequently revise their selection criteria, however, they are currently not aligned with specific standards. Finally, the candidate is selected and recommended to local school board for hire.

Participants from School System B identified the district's current selection process as a positive approach to the hiring of potential teachers. All participants stated they would not change the current process and it alleviates a lot of stress on the principal trying to research hundreds of applicants. The current process also narrows down the interviews to only 4 potential candidates for each job opening. Also, it was noted that if the 4 candidates did not meet local school criteria, the Talent and Management Team would send a new set of 4 candidates and the remaining candidates go back into the hiring pool for the district.

Participants from both School Systems identified inconsistencies within their selection criteria evaluating technology competencies and their willingness to address this disparity and make changes to the current criteria. All participants from both School Systems recommended a demonstration component during the selection process to evaluate a potential teacher's knowledge of technology and ability to integrate technology within the classroom. It is critical for school system leaders and principals to spend time clearly defining and evaluating important technological competencies within the selection criteria. Including technology competencies within the selection criteria would decrease subjectivity and ensure technology competencies are present for all teachers that are hired.

The findings in this study revealed that principals considered potential teachers' knowledge of technology and their ability to integrate technology within the classroom to be important within the selection criteria. However, principals did not have a clear or consistent

method for evaluating those competencies within the selection criteria. Therefore, a unified approach to ensure technology competencies are considered in the selection criteria is important and may result in consistent technology implementation in classrooms, thereby moving schools from good to great.

Limitations

The challenge throughout the data collection and data analysis was to make sense of large amounts of data, identify significant patterns and construct a framework for communicating what the data revealed given the purpose of the study. Presenting an analysis of the findings is limited due to a small research sample comprising interview data from nine interviews with secondary school principals. Remembering the human factor within qualitative analysis, the researcher recognizes the subjective nature of claims she made regarding the meaning of the data.

Implications for Administrators

Given that there are multiple factors that impact the hiring process in school systems, the researcher identified the selection criteria for potential teachers as an opportunity for growth. Administrators should consider revising the current selection criteria for potential teachers to align with technology standards to better identify and evaluate potential teachers' technological knowledge and skills. During the interview process, potential teachers should also be provided an opportunity to demonstrate and apply their knowledge of technology in a classroom setting. This would assist principals in determining whether a potential teacher can actually teach what they contend they know. Teacher hiring practices are significant to the future of education in this nation. The hiring of competent, well-trained professionals, who have the knowledge of technology and the ability to integrate technology in the classroom should be the norm rather than a rare exception (Ornstein, 1988).

An emphasis on technology within the selection criteria might help increase the success of schools in teaching students 21st century skills. While researchers identified desired knowledge of technology and technology skills and their link to student learning, there does not appear to be a unified path between the knowledge of technology and skills and the selection criteria. Combining these two areas will increase the opportunity for hiring teachers possessing knowledge and skills which research has shown are intricately connected to student learning (Danielson, 2007; Marzano et al., 2001; Stronge & Hindman, 2006).

Conclusions

Results from this study indicate that the respondents believe selection criteria for hiring potential teachers should be revised to include opportunities for potential teachers to demonstrate their knowledge and skills. Technology is a key component to moving forward and making future progress within our schools and the hiring of teachers should include a way to determine potential teachers' technological knowledge and skills. The respondents also indicated that they believe all teachers should have technological knowledge and skills and should be able to integrate technology in the classroom on a daily basis.

Teachers are faced with the challenge to prepare students to compete globally within the 21st century job market. In response to this evolution, solutions continue to be defined based upon the institution's past rather than the students' future needs (DuFour & Marzano, 2011). Finally, when hiring teachers capable of educating the 21st Century Learner, administrators must be aware of the need for students to interact with the technology under the guidance of a teacher who is technologically competent. This should be a teacher who has knowledge of technology and the ability to integrate it within the classroom to help students master the skills needed in the 21st century workforce, and who will prepare them for lifelong learning in a technological world.

Teacher hiring practices are significant to the future of education in this nation. While secondary school principals identified the importance of hiring a technologically competent teacher and their link to student learning, there does not appear to be a unified path between the knowledge of technology and skills and the selection criteria. Failure to bring the two areas together creates a disconnect in the teacher selection criteria and impedes districts from hiring the teachers who possess the knowledge and skills that research claims are intricately connected to student learning (Danielson, 2007; Marzano et al., 2001; Stronge & Hindman, 2006). It is critical for principals and school leaders to spend time clearly defining important technological competencies. Including technology competencies within the selection criteria may decrease subjectivity and ensure technology competencies are present for all teachers that are hired. Therefore, a unified approach to ensure technology competencies are considered in the selection criteria would result in consistent technology implementation within all classrooms moving schools from good to great.

Recommendations for Future Research

The researcher offers recommendations for future research based on the findings, analysis and conclusions of this study. The researcher recommends further studies be conducted to develop a larger database of information to gain comprehensive understanding of technology components within the selection criteria for potential teachers.

Studies include:

1. A similar study should be undertaken examining the hiring practices and selection criteria of elementary and middle school principals.
2. A comparison and analysis of research should be undertaken to assess elementary, middle and high school principals. This research should be undertaken to uncover similarities and/or

differences in perspectives and experiences integrating technological components in their selection criteria.

3. A larger, quantitative study could examine hiring selection criteria from schools nationwide.

4. A study should be conducted that examines whether principals are competent to measure potential teachers' technology competencies.

REFERENCES

Achieve. (2010). *Achieving the possible: What Americans think about the college- and career-ready agenda.* http://www.achieve.org/achieving-possible-survey-results.

Alliance for Childhood. (2004). *Tech tonic: Towards a new literacy of technology*. College Park, MD: Author.

Alabama State Department of Education Home. (n.d.). Retrieved August 3, 2014, from http://www.alsde.edu/

Anderson R. (2008). Implications of the information and knowledge society for education. In *International Handbook of Information Technology in Primary and Secondary Education* (pp. 5-22). Springer, New York.

American Management Association and Partnership for 21st Century Skills (2010). *AMA 2010 Critical Skills Survey*.http://www.amanet.org/news/AMA-2010-critcal-skills-survey.aspx

Baker, B. D., & Cooper, B. S. (2005). Do principals with stronger academic backgrounds hire better teachers? Policy implications for improving high-poverty schools. *Educational Administration Quarterly, 41*(3), 449-479.

Becker, H. J. (2001, April). *How are teachers using computers in instruction?* Paper presented at the 2001 Meeting of the American Educational Research Association, Seattle, WA. Retrieved April 2, 2014, from http://www.crito.uci.edu/tlc/FINDINGS/special3/ .

Bolz, A. J. (2009). *Screening teacher candidates: Luck of the draw or objective selection?* Ph.D. diss., University of Wisconsin, Madison

Boody, R. M. (2008). Teacher reflection as teacher change, and teacher change as moral response. *Education, 128*(3), 498-506.

Bowers, A. J. (2008). Promoting excellence: Good to great, NYC's District 2, and the case of a high-performing district. *Leadership and Policy in School, 2*(7), 154-157.

Breivik, P. S. (2005). 21st century learning and information literacy. *Change. 37*, 20–27.

Buckenmeyer, J. (2010). Beyond computers in the classroom: Factors related to technology adoption to enhance teaching and learning. *Contemporary Issues In Education Research, 3*(4), 23-36.

Bull, G., Hammond, T., & Ferster, B. (2008). Developing Web 2.0 tools for support of historical inquiry in social studies. *Computers in the Schools, 25*(3/4), 275-287.

Caldwell, B.J. (1993). *Liberating leaders in schools of the future*. Paper presented at the conference of the Victorian Primary Principals Association, Melbourne, February 15, 1993.

Chorzempa, B, F. (2011). Don't get left behind! Improve your experiences as a new teacher. *Kappa Delta Pi Record*, *47*(2), 72 – 75.

Cifuentes, L., Sharp, A., Bulu, S., Benz, M., & Stough, L.M. (2010). Developing a Web 2.0-based system with user-authored content for community use and teacher education. *Educational Technology Research and Development, 58*(4), 377-398.

Coleman, J., Campbell, E., Bobson, C., McPartland, J., Mood, A., & Weinfeld, F. (1966). *Equality of educational opportunity.* Washington, DC: U.S. Government Printing Office.

Collins, J. (2001). *Good to great: Why some companies make the leap--and others don't*. New York, NY: HarperBusiness.

Conole, G. (2010). Facilitating new forms of discourse for learning and teaching: Harnessing the power of Web 2.0 practices. *Open Learning, 25*(2), 141–151.

Courville, K. (2011). *Technology and its use in education: Present roles and future prospects.* Paper presented at the Recovery School District Technology Summit. Baton Rouge, LA.

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Daggett, W. (2010). Preparing students for their technological future. *International Center for Leadership in Education.*

Danielson, C. (2007) *Enhancing professional practice: A framework for teaching* (2nd ed.) Alexandria, VA Association for Supervision and Curriculum Development.

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives, 8*(1).

Darling-Hammond, L. (2010). *The flat world and education*. New York: Teachers College Press.

Dede, C. (2010). Comparing frameworks for 21st century skills. In Bellanca, J. and Brandt, R. *21st Century Skills: Rethinking How Students Learn* (pp. 51 – 75). Bloomington, IN: Solution Tree Press.

DuFour, R. & Marzano, R. (2011). *Leaders of learning: How district, school, and classroom leaders improve student achievement*. Bloomington, IN: Solution Tree Press.

Ertmer, P, & Ottenbreit-Leftwich, A. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education*, *42*(3), 255-284.

Flanagan, L., & Jacobsen, M. (2003). Technology leadership for the twenty-first century principal. *Journal of Educational Administration, 41*(2), 124-142.

Friedman, T. (2007). *The world is flat*. New York, NY: Picador.

Fullan, M. (2003). *The moral imperative of school leadership.* Thousand Oaks, CA: Ontario Principals' Council/Corwin Press.

Fullan, M. (2009). *Using change knowledge to implement technology for learning: An online survey* (Unpublished manuscript).

Grey, S., & Streshly, W. (2008). *From good schools to great schools: What their principals do well*. Thousand Oaks, CA: Corwin Press.

Grissom, J. A. (2011). Can good principals keep teachers in disadvantaged schools? Linking principal effectiveness to teacher satisfaction and turnover in hard-to-staff environments. *Teachers College Record*, *113*(11), 2552-2585.

Groff, J., & Mouza, C. (2008). A framework for addressing challenges to classroom technology use. *Association for the Advancement of Computing in Education (AACE) Journal, 16*(1), 21-46.

Guzey, S. S., & Roehrig, G. H. (2009). Teaching science with technology: Case studies of science teachers' development of technology, pedagogy, and content knowledge. *Contemporary Issues in Technology and Teacher Education*, *9*(1). Retrieved from http://www.citejournal.org/vol9/iss1/science/article1.cfm

Hattie, J. A. C. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London,UK: Routledge.

Harris, J., Mishra, P., & Koehler, M.J. (2009). Teachers' technological pedagogical content knowledge and learning activity types: Curriculum-based technology integration reframed. *Journal of Research on Technology in Education, 41*(4), 393-416

Harris, D., Ingle, W., Rutledge, S., & Thompson, C. (2010, Spring). Mix and match: What principals really look for when hiring teachers. *Education Finance and Policy*, *5*(2), 228-246.

Hefele, T.J. (1971) The effects of systematic human relations training upon student achievement. *Journal of Research and Development in Education, 4*, 52-69.

Higdon, J & Topaz, C. (2009). Blogs and wikis as instructional tools: A social software adaptation of just-in-time teaching. *College Teaching, 57* (2) 105 - 109.

Howley, A., Wood, L. & Hough, B. (2011). Rural elementary school teachers' technology integration. *Journal of Research in Rural Education*, *26*(9), 1-13.

International Society for Technology in Education. (2010). *Standards: Global reach of the NETS*. Retrieved from http://www.iste.org/standards/global-reach.aspx

International Society for Technology in Education. (2011). *About us*. Retrieved http://www.iste.org/standards/global-reach.aspx.

International Technology Education Association. (2000). *Standards for technological literacy: content for the study of technology.* Reston, VA: Author.

Jacob, B. (2011). Do principals fire the worst teachers? *Educational Evaluation and Policy Analysis. 33* (4), 403-404.

Januszewski, A., & Molenda, M. (Eds.). (2008). *Educational technology: A definition with commentary*. New York: Lawrence Erlbaum Associates.

Kingsley, K. (2007). Empower diverse learners with educational technology and digital media. *Intervention in School and Clinic, 43*(1), 52.

Kersten, T. (2008). Teacher hiring practices: Illinois principals' perspectives. *The Educational Forum, 72*, 355-368.

Kopcha, T. J., & Sullivan, H. J. (2007). Self-presentation bias in surveys of teachers' educational technology practices. *Educational Technology Research and Development, 56*(3), 265–286.

Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teaching sorting and the plight of urban schools. *Educational Evaluation and Policy Analysis*, *24*(1), 37-62.

Lasley, T. J., Siedentop, D., & Yinger, R. (2006). A systemic approach to enhancing teacher quality. *Journal of Teacher Education, 57*(1), 13-21.

Liu, E. & Johnson, S. (2006). New teachers' experiences of hiring: Late, rushed, and information-poor. *Educational Administration Quarte*rly, *42*(3), 324-360.

Leithwood, K., & Day, C. (2007). What we learned: A broad view. In K. Leithwood & C. Day (Eds.), *Successful school leadership in times of change* (pp. 189–203). Toronto: Springer

Leithwood, K. & Riehl, C. (2003). What we know about successful school leadership. *American Educational Research Association.*

Leithwood, K., Louis, K. S., Anderson, S. & Wahlstrom, K. (2004). *How leadership influences student learning*. The Wallace Foundation. Retrieved on December 21, 2012, from http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/Pages/How-Leadership-Influences-Student-Learning.aspx

Lemke, J. (2006).Towards critical multimedia literacy: Technology research and politics. In M. McKenna, L. Labbo, R. Kieffer, & D. Reinking (Eds.), *International Handbook of Literacy & Technology, 2*, 3–14. Mahwah, NJ: Erlbaum.

Louis, K., & Miles, M. (1990). *Improving the urban high school.* New York: Teachers College Press.

Louis, R. C. (2012*). A case study exploring technology integration and incorporation of 21st century skills in elementary classrooms*. (Order No. 3554119, Northeastern University). 119 ProQuest Dissertations and Theses. Retrieved from http://search.proquest.com/docview/1316620093?accountid=14472. (1316620093).

Marzano, R. J., & Kendall, J. S. (2007*). The new taxonomy of educational objectives* (2nd ed.). Thousand Oaks, CA: Corwin

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Alexandria, VA Association for Supervision and Cumculum Development

Mason, R. W., & Schroeder, M. P. (2010). *Principal hiring practices: Toward a reduction of uncertainty*. Clearing House, 83(5), 186-193.

McEwan, E. K. (2002). *Ten traits of highly effective teachers: How to hire, coach, and mentor successful teachers: How to hire, coach, and mentor successful teacher*. Thousand Oaks, CA: Corwin Press, Inc.

McLeod, J., & Vasinda, S. (2008). Electronic portfolios: Perspectives of students, teacher, and parents. *Educational and Informational Technologies, 14*, 29-38.

Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

National Commission on Teaching and America's Future. (2003*). Unraveling the "teacher shortage" problem: Teacher retention is the key*. Washington, D.C.

National Board for Professional Teaching Standards. (1989). *Toward high and rigorous standards for the teaching profession.* Detroit, MI: Author.

National Council for the Social Studies, Guidelines for teaching science-related social issues 11. (April 2014). *Social Education*, 258-261.

No Child Left Behind Act of 2001, PUBLIC LAW 107–110—JAN. 8, 2002, Retrieved January, 2009, from http://www.ed.gov/policy/elsec/leg/esea02/107-110.pdf.

Noell, G., & Kowalski, P. (2010*). Using longitudinal data systems inform state teacher quality efforts.* American Association of Colleges for Teacher Education (AACTE) Policy Brief.

Olaniran, B.A. (2009). Culture and language learning in computer-enhanced or assisted language learning. *International Journal of Information Communication Technologies and Human Development, 1(3)*, 49-67.

Osorio-O'Dea, P. (2001). *Bilingual education: An overview*. CRS Report for Congress. Retrieved February 24, 2013 from http://www.policyalmanac.org/education/archive/bilingual.pdf.

Partnership for 21st Century Skills. (2009a). *Framework for 21st century learning*. Retrieved from http://www.p21.org/documents/P21_Framework.pdf Partnership for 21st Century Skills.

Partnership for 21st Century Skills. (2007). *Beyond the three Rs: Voter attitudes toward 21st century skills*. http://www.p21.org/documents/P21_pollreport_singlepg.pdf.

Papa, F., & Baxter, I. (2008).Hiring teachers in New York's public schools: Can the principal make a difference? *Leadership and Policy in Schools, 7*(1), 87–117.

Rivkin, S.G., Hanushek, E.A., & Kain, J.F. (2005). Teachers, schools, and academic achievement. *Econometrica, 73*(2), 417–458.

Rothman, R. (2004). Landing the "highly qualified teacher." *Harvard Educational Letter Research Online*. Retrieved March 13, 2013 from http://www.edletter.org/past/issues/2004-jf/hiring.shtml

Rutledge, S., Harris, D., Thompson, C., & Ingle, W. (2008). Certify, blink, hire: An examination of the process and tools of teacher screening and selection. *Leadership and Policy in Schools, 7*, 237-263.

Sanders, W. L., & Horn, S. P. (1998). Research findings from the Tennessee Value Added Assessment System (TVAAS) Database: Implications for educational evaluation and research. *Journal of Personnel Evaluation in Education, 12*(3), 247-256.

Sciarappa, K & Blau, B. (2009). Involving staff in teacher hiring. *Principal- To- Principal*, 44-44.

Seyfarth, J. T. (2005). *Human resources management for effective schools*. Boston, MA: Pearson.

Seyfarth, J. (2008). *Human resource leadership for effective schools* (5th ed.). Boston: Allyn & Bacon.

Stronge, J. H., & Hindman, J. L. (2006). *The Teacher Quality Index: A protocol for teacher selection.* Alexandria, VA: Association for Supervision and Curriculum Development

Stronge, J. H. (2006). Teacher evaluation and school improvement: Improving the educational landscape. In J. H. Stronge (Ed.), *Evaluating teaching: A guide to current thinking and best practice*. (2nd ed., pp. 1-23). Thousand Oaks, CA: Corwin Press

Stronge, J. (2007). *Qualities of effective teachers* (2nd ed.). Alexandria, Va.: Association for Supervision and Curriculum Development.

Teske, P., & Schneider, M. (1999). *The importance of leadership: The role of school principals.* New York: The Pricewaterhouse Coopers Endowment for the Business of Government.

Thomas, D. A., & Li, Q. (2008). From Web 2.0 to Teacher 2.0. *Computers in the Schools, 25*(3-4), 199-210.

U.S. Department of Education. (n.d.). Retrieved August 13, 2014, from http://www.ed.gov/.

U.S. Department of Education. (2012). Negotiated rulemaking for higher education 2012. Retrieved from http://www2.ed.gov/policy/highered/reg/hearulemaking/2012/index.html.

Van Do, H., Dorner, D. G., & Gorman, G. E. (2010). A contextual model for the development of digital library education. *Bulletin of IEEE Technical Committee on Digital Libraries, 6*(2), Retrieved from http://www.ieee-tcdl.org/Bulletin/v6n2/Hung/hung.html

Wagner, T. (2008). *The global achievement gap: Why even our best schools don't teach the new survival skills our children need and what we can do about it.* New York, NY: Basic Books.

APPENDIX A

PROTOCOL FOR INTERVIEW QUESTIONS

Interview Questions

1. Do you have input into the selection criteria for potential teachers?

2. Does the selection criteria for potential teachers vary among different grade levels and content areas?

3. What technology competencies are included in the selection criteria for potential teachers?

4. What technological knowledge do think is important for potential teachers and how important is it to you? Examples might include hardware, software, etc.

5. What technological skills do you think are important for potential teachers and how important are they to you?

6. Does the knowledge of technology vary for different content areas in the selection criteria for potential teachers? If yes, explain. If no, (follow up questions)

7. Do the technology skills vary for different content areas in the selection criteria for potential teachers? If yes, explain. If no, (follow up questions)

8. Does the ability to integrate technology vary for different content areas and grade levels for potential teachers? Explain (follow up questions)

6. How do you expect potential teachers to utilize technology in the classroom?

8. How do you determine if potential teachers possess the knowledge of technology that you expect?

9. How do you determine if potential teachers possess the expected technology skills that you expect?

10. How do you determine a potential teacher' ability to apply their knowledge of technology?

11. If you could make one change regarding identifying potential teachers' knowledge of technology and the ability to integrate technology in the classroom in your selection criteria, what would you change and why?

APPENDIX B

INFORMED CONSENT

THE UNIVERSITY OF ALABAMA
Consent Form

As the principal at your school you are being asked to take part in a research project. This research project is called *High School Principals' Practice Concerning Technological Competencies in the Selection Criteria for Potential Teachers*. The research is being done by *a Doctoral Candidate, Sarah Acker* at the University of Alabama.

What is this research about?

This research is being done to find out principals' practices concerning technological competencies in the selection criteria for potential teachers. Specifically, I want to know the answers to the following questions: a) What are high school principals' practice concerning potential teachers knowledge of technology in the selection criteria? b) What are high school principals' practice concerning potential teacher's ability to integrate technology in the classroom within the selection criteria? c) How do high school principals determine if potential teachers have the expected knowledge of technology and ability to integrate technology in the classroom? Ms. Acker is being supervised by Dr. Margaret Rice, a faculty member in the College of Education at UA.

Why is this research important--What good will the results do?

It is anticipated that, through a better understanding of the current selection criteria for potential teachers, more informed decisions can be made by local systems, policy makers and administrators regarding the hiring process. This may lead to the hiring of effective teachers that positively impact student achievement in every classroom.

How will this research be conducted?

To answer the research questions, I will conduct interviews and study existing school data and documents. I will conduct interviews and the interviews will be audio recorded to be transcribed. The interviews will last approximately 60 minutes. The recordings will be erased after the researcher transcribes each recording. The researcher will collect job descriptions, selection criteria, local school systems hiring policies and procedures. I will be certain these data will be collected in such a manner that participating principal and the school buildings/districts cannot be identified, directly or through identifiers linked to them to ensure confidentiality.

Thus, I will be certain to save the audio recordings versions only on the hard drive of the researcher's computer, which is housed in a locked office. The audio file containing the interview will be heard only by the researcher. I will keep the files and all other building data under lock and key for five to seven years, then I will destroy the files. Again, I will be certain no participating principals, school buildings or school districts will be revealed in any description or publication of this research.

UNIVERSITY OF ALABAMA IRB
CONSENT FORM APPROVED: 5/22/2015
EXPIRATION DATE: 5/21/2016

What are the risks to me if I participate in this study?
By providing consent to participate in this study little or no risk is foreseen as when interviews are used.

What are the benefits to science or society?
The benefits of the research are that through a better understanding of the current selection criteria for potential teachers, more informed decisions can be made by administrators and policy makers regarding the hiring process. This may lead to the hiring of highly effective teachers that positively impact student achievement in every classroom.

How will privacy be protected?

Your privacy will be protected by conducting the interview in private and within your office or another location of your choice. The interviewee will be informed orally that all participants will be given a pseudonym and all identifiable references will be changed to protect the anonymity of the participants.

How will confidentiality be protected?

I will be certain all data will be collected in such a manner that the teacher, the principal, and the school buildings/districts cannot be identified, directly or through identifiers linked to them. To do this, no district, building, principal will be identified; instead I will use coded ID numbers on all project related research data I collect. As a result, no one's identity or school building/district will be revealed in any description or publication of this research. I will only allow the researcher to see the data.

What are my rights as a participant in this study?

Taking part in this study is voluntary. It is your free choice. You can refuse to be in it at all. If you start the study, you can stop at any time. There will be no effect on your relations with the University of Alabama.

The University of Alabama Institutional Review Board ("the IRB") is the committee that protects the rights of people in research studies. The IRB may review study records from time to time to be sure that people in research studies are being treated fairly and that the study is being carried out as planned.

Who do I call if I have questions or problems?

If you have questions about the research right now, please ask them. If you have questions about the study later on, please call the primary investigator Sarah Acker at (205) 535-0043 or my faculty supervisor, Dr. Rice at (205)381-1165. If you have any questions, concerns, or complaints about your rights a research participant, you may contact Ms. Tanta Myles, The University of Alabama Research Compliance Officer, at (205)-348-5152 or toll free at 1-877-820-3066.

UNIVERSITY OF ALABAMA IRB
CONSENT FORM APPROVED: 5/22/2015
EXPIRATION DATE: 5/21/2016

You may also ask questions, make suggestions, or file complaints and concerns through the IRB Outreach website at http://osp.ua.edu/site/PRCO_Welcome.html or email the Research Compliance office at participantoutreach@bama.ua.edu.

After you participate, you are encouraged to complete the survey for research participants that is online at the outreach website or you may ask the investigator for a copy of it and mail it to the University Office for Research Compliance, Box 870127, 358 Rose Administration Building, Tuscaloosa, AL 35487-0127.

I have read this consent form. I have had a chance to ask questions. I agree to take part in it. I will receive a copy of this consent form to keep.

For my study, I am requesting your permission to audio record the interview. Please indicate your preference for audio recording below:

___ You may record my interview. ___ Please do not record my interview.

_____ _____

Signature of Research Participant Date

_____ _____

Signature of Investigator Date

UNIVERSITY OF ALABAMA IRB
CONSENT FORM APPROVED: 5/22/2015
EXPIRATION DATE: 5/21/2016

APPENDIX C

IRB APPROVAL

May 22, 2015

Office for Research

Institutional Review Board for the Protection of Human Subjects

THE UNIVERSITY OF ALABAMA RESEARCH

Sarah Acker
Department of ELPTS
College of Education
Box 870302

Re: IRB # 15-OR-164: "High School Principals' Practices Concerning Technological Competencies in the Selection Criteria for Potential Teachers"

Dear Ms. Acker,

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your approval will expire on May 21, 2016. If the study continues beyond that date, you must complete the IRB Renewal Form within e-Protocol. If you modify the application, please complete the Revision Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, please complete the Final Report Form.

Please use reproductions of the IRB-stamped consent form.

Should you need to submit any further correspondence regarding this application, please include the assigned IRB approval number.

Good luck with your research.

Sincerely,

Carpantato T. Myles, MSM, CIM
Director & Research Compliance Officer
Office for Research Compliance

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