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A Content Analysis to Investigate the Evidence of 21st Century Knowledge and Skills within Elementary Teacher Education Programs in the United States

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by

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A Content Analysis to Investigate the Evidence of 21st Century Knowledge and Skills within Elementary Teacher Education Programs in the United States as measured by the 21st Century Learning Framework

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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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Abstract

Are graduates of teacher preparation programs adequately prepared with the skills and knowledge to teach in the 21st century classroom? This study consisted of a quantitative content analysis to investigate the presence of 21st century knowledge and skills within a stratified random sample of teacher preparation programs in the United States as measured by the 21st Century Learning Framework. Based on the current literature, the researcher identified 21st century competencies: global awareness; digital competencies; critical thinking; collaboration; cross-cultural; communication; and problem solving. For null hypothesis numbers two through eight, the researcher determined how closely the institution's mission statements, course descriptions, syllabi, and other documents corresponded to the quantified 21st century framework. She then calculated the variance and tested the hypotheses using a z-test for a difference in proportion. For null hypothesis number one a z-test for difference in means between the ratings of the public teacher preparation program's sample and the private teacher preparation program's sample was used to determine if there were significant differences. In addition, the data was analyzed to determine if a statistical difference existed between public and private institutions' evidence of 21st century knowledge and skills. The results of the analysis supported the alternate hypothesis, noting evidence of 21st century knowledge and skills within the sample of teacher preparation programs. The analysis also supported the alternate hypotheses; there was evidence of digital literacy and critical thinking competencies in teacher preparation programs. The research did not support the alternate hypotheses related to global awareness, collaborative, cross-cultural, communication, and problem-solving competencies, thus revealing 21st century

knowledge and skills were not evident in teacher preparation programs. Public institutions statistically scored higher on digital literacy skills while private institutions scored higher on critical thinking skills. Teacher preparation programs must make programmatic changes to better prepare graduates with the knowledge and skills necessary to effective lead in the 21st century classroom.

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Chapter One: Introduction

Background of the Problem

Many teacher preparation programs are inadequately preparing their graduates to be effective in the 21st century classroom (American Association of Colleges for Teacher Education, 2011; Duncan, 2009; National Comprehensive Center for Teacher Quality and Public Agenda, 2008). According to Stanford University Professor, Dr. Levine (2006) and his research on the effectiveness of education preparation programs, nearly 60% of education preparation program graduates perceived that their programs inadequately prepared them for the 21st century classroom. As societies change, the knowledge and skills necessary to succeed and compete in those societies change; some skills and knowledge become more valuable while others become obsolete (Zhao, 2009). "Learning is now a life-long process of coping with change…Learning how to learn is the basis of education today" (Rodgers, Runyun, Starrett, & Von Holzan, 2006, p. 3).

There is an abundance of information related to the skills U.S. students need to compete in the 21st century (Mathews, 2009a; Sawchuk, 2009a). "The phrase 21st century skills' is everywhere in education policy discussions . . . from faculty lounges to the highest echelons of the U.S. education system" (Sawchuk, 2009a, para. 1). Many educators believe 21st century schools need to prepare students to compete in a global economy, but ambiguities in defining 21st century skills create confusion (November, 2010). Most educators associate 21st century skills with the Arizona based initiative, P21, which Kay and Golder-Dardis created with the help of the U.S. Department of Education (Partnership for 21st Century Skills, 2004b; Sawchuk, 2009b). Even though there is a wealth of information related to 21st century skills, there seems to be a limited

number of studies on the need for teacher preparation program graduates to possess 21st century skills and knowledge.

Czop, Garza, and Battle (2010) conducted research designed to examine multicultural teacher education, knowledge a 21st century teacher should possess in one teacher preparation program, and found that most teacher preparation program professors valued multicultural education, but were unsure of how to address diversity in their courses, especially the courses that required field experience. Neumann (2010) recently conducted a study of 302 universities "to determine the extent to which university-based teacher preparation programs in the U.S. leading to an initial credential require courses in social foundations and multicultural education" (p. 8). Neumann (2010) found 301 of the 302 elementary teacher preparation programs required training in multicultural education or social foundations while 296 of the 302 secondary programs required either course.

After reviewing the literature, the researcher noted a void in studies related to teacher preparation programs in the U.S. and their ability to embed 21st century knowledge and skills into pre-service programs. The intent of the study was to identify teacher preparation programs within higher education institutions that embed 21st century skills and knowledge into the teacher preparation program and the degree to which the programs embed the skills and knowledge. The results from this study could lead teacher preparation program leaders to evaluate their programs to determine the program's ability to prepare its graduates for the 21st century classroom.

Purpose of the Dissertation

Many teacher preparation programs are inadequately preparing their graduates to be effective in the 21st century classroom (American Association of Colleges for Teacher

Education, 2011; Duncan, 2009; National Comprehensive Center for Teacher Quality and Public Agenda, 2008; The Teaching Commission, 2006). Taking a quantitative perspective the researcher conducted an investigation of teacher preparation programs in 40 states and the District of Columbia. Using information gathered from program documents, this study intended to measure the degree to which 21st century skills are embedded within teacher preparation programs using a 21st Century Learning Framework. The purpose of this study was to add to the current body of knowledge related to U. S. teacher preparation programs and evidence of 21st Century Skills and Knowledge.

Rationale

In order to retain high-quality teachers who will improve student achievement, educator preparation programs must make programmatic changes (Watlington, Shockley, Guglielmino, & Felsher, 2010). Teacher attrition is high among novice teachers; about 50% of novice teachers leave the profession entirely while the other 50% leave a position to pursue a new position in another district (Ingersoll & Smith, 2003). Ingersoll and Smith (2003) acknowledged the nation's desperate need for teachers as a large number of "baby boomers" retire and student enrollment increases. However, Ingersoll and Smith (2003) negated the solution proposed by the federal government, state governments, and school districts as they prepare for these massive changes. Rather than recuiting a large number of professionals to the field of education through the offering of numerous incentives, policymakers and school officials need to address issues related to teacher attrition (Ingersoll & Smith, 2003). Adding additional teachers to the existing education system is not the answer; it needs more effective teachers that remain in the profession

(Ingersoll & Smith, 2003). In order to recruit and retain effective teachers, teacher preparation programs need to better prepare candidates by providing meaningful learning opportunities in low-income, challenging schools (Wise, 2008).

"Every aspect of our education system—preK-12, postsecondary and adult education, after-school and youth development, workforce development and training, and teacher preparation programs—must be aligned to prepare citizens with the 21st century skills they need to compete" (as cited in Mathews, 2009a, para. 5). Mathews (2009a) believed this "all-at-once-syndrome" (para. 5) will lead to the P21 movement becoming an educational fad. Willingham (2009) worried that the P21 movement will take years before the public and government realize the movement is a fad. Sawchuk (2009a) mentioned the fact that Wagner, co-director of the Change Leadership Institute at Harvard University's Graduate School of Education, recognized the importance of improving education, but he [Wagner] also realized drastic changes take time. Senechal (2010) wrote "The problem lies in the reformers' haste and dogmatism. Far too often, the 21st-century-skills argument carries a tone of urgency, even emergency" (p. 4). Wagner acknowledged the need for teacher development, but believed "Teachers will rise to the challenge given the kind of supports they need" (as cited in Sawchuk, 2009a, para. 35). According to Regan (2008) "The key difference is that today we have a new set of tools to apply to the tasks" (para. 1). Skeptics also believe the movement is just another name for quality instruction (Mathews, 2009b). Silva (2009) added, the ability "to think critically, analytically, and creatively are not skills specific or unique to the 21st century" (p. 631). Ravitch (2010) and Regan (2008) reiterated that the skills associated with 21st century are not new; they are old ideologies revisited in modern society. Willingham

(2009) suggested, "It is important that states try to meet the goals set by P21-indeed, they are goals that have been articulated for at least 100 years" (para. 23).

Some believe the push for 21st century skills is in response to the changing workforce (Silva, 2009). An American Management Association survey found that "80% of executives believe[d] that fusing the three Rs and four Cs would ensure students are better prepared to enter the workforce" (Partnership for 21st Century Skills, 2010, para. 14). Basic proficiency in core subjects "is not sufficient if workers are unable to think critically, solve problems, collaborate, or communicate effectively" (Partnership for 21st Century Skills, 2010, para. 14). Schools should prepare students for the workforce; however, "chasing fads and obeying whims of the market" (p. 10) will not prepare students for future employment (Senechal, 2010). The Council on Competitiveness (2009) urged the government to "provide a 21st century education to match the 21st century job opportunities, requirements, and needs" (p. 1). Students must use technology efficiently to produce, collaborate, and solve problems since these skills are necessary in competitive job markets (Regan, 2008; Stevens, 2011).

These skills are not new; in fact, they are just more important since workers must be able to collect and analyze information from multiple sources, and use the information to make decisions (Silva, 2009). The only difference is the extent to which one must refine these skills to compete and be successful in the workplace (Rotherham & Willingham, 2009). Educator, Cicero acknowledged the importance of helping students develop 21st century skills, "Technology is ever-changing, and we should not leave our children behind" (as cited in Stevens, 2011, p. 59). Wilson, NEA Executive Director, agreed with Cicero, "Learning in the 21st century takes new thinking . . . The 21st

century skills are imperative to implement in our classrooms in order to prepare our students for our globalized workforce" (as cited in Stevens, 2011, p. 59). Ravitch, New York University education research professor and co-chairwoman of Common Core, argued "[T]here is nothing new in the proposals of the 21st century skills movement. The same ideas were iterated and reiterated by pedagogues throughout the 20th century" (2010, p. 12). "Learning is now a life-long process of coping with change . . . Learning how to learn is the basis of education today" (Rodgers et al., 2006, p. 3). Paige (2003) stated "Those [students] who are unprepared will sit on the sidelines, dead-end jobs, and hopelessness. They will find little choice and much despair. The well- educated will live in a world of their own choosing; the poorly educated will wander in the shadows" (para. 39).

Hypotheses

Hypothesis (H_1): There is evidence of 21st century knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Hypothesis (H_2): There is evidence of global awareness knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Hypothesis (H_3): There is evidence of digital competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a

numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Hypothesis (H_4): There is evidence of critical thinking competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scale comparison to characteristics and standards represented in the 21st Century Learning Framework.

Hypothesis (H_5): There is evidence of collaborative competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Hypothesis (H_6): There is evidence of cross-cultural competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Hypothesis (H_7): There is evidence of communication competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Hypothesis (H_8): There is evidence of problem solving competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Overview of the Methodology

The researcher completed a quantitative content analysis to investigate the presence of 21st century knowledge and skills within a stratified random sample of teacher preparation programs in the U.S.as measured by the 21st Century Learning Framework. The researcher selected a quantitative content analysis since this method allowed her to collect descriptive information on the research topic, which could lead to programmatic changes (Fraenkel, Wallen, & Hyun, 2009). This method requires deductive reasoning to identify recurring themes (Berg, 2001). Content analysis can also be used to investigate possible relationships, (p. 480) which allows the researcher to test the hypotheses (Fraenkel et al., 2009) using the numerical data collection (Berg, 2001). Quantitative content analysis also requires the selection of a random sample to guarantee validity within the experiment. Therefore the data collected by using statistical tests can be shared (Berg, 2001). In respect to this study, "content analysis" is defined as a technique used to study written documents, such as mission statements, course titles and descriptions, course objectives and course syllabi (Fraenkel et al., 2009) in the teacher preparation program to determine the presence of 21st century skills and knowledge.

The researcher developed the format of the scoring guide by adapting it from the *Draft Rubric for Ed.D. Program Integration of Global Competency* by Leavitt and Kania-Gosche (2011). The researcher read numerous studies related to 21st century skills and knowledge teachers need to be effective in the 21st century classroom, and found that all studies stated teachers are unprepared to teach in today's classroom since most novice educators lack the necessary skills (American Association of Colleges for Teacher Education, 2011; Duncan, 2009; Levine, 2006; National Comprehensive Center for

Teacher Quality and Public Agenda, 2008). Even though there was a consensus among the current literature, researchers, such as Alger and Kopcha (2009), Senechal (2010), Partnership for 21st Century Skills (2007), and the North Central Regional Educational Library (NCREL), North Central Regional Technology in Education Consortium (NCRTEC), and the Metiri Group identified different skills and knowledge; however, some researchers did not clarify exactly what they meant by 21st century skills (Sawchuk, 2009a). Therefore, the researcher of this study read extensively to obtain a clear definition of 21st century skills. Based on findings within the current literature, a scoring device was created (Appendices A-G), which defined the necessary 21st century skills and knowledge a teacher preparation program should include: global, digital, critical thinking, collaborative, cross-cultural, communication, and problem solving competencies.

Using the National Council for Accreditation of Teacher Education (NCATE) website's list of accredited teacher preparation programs, the researcher identified the 664 teacher preparation programs in the U.S. who were NCATE accredited. For this study, the researcher included the institutions located only in the 50 states and the District of Columbia, thus decreasing the population to 654 institutions (NCATE, 2010c). Then 80 public institutions and 80 private institutions were randomly selected for the sample. Once the sample was determined, the researcher collected information related to the required skills and knowledge graduates must possess from each teacher preparation program using the school's mission statement, the school of education's goals, mission and vision statements, program descriptions, course objectives and descriptions, program course catalogs, websites, or other available resources. The researcher evaluated each

initial teacher preparation program using the 21st Century Skills Framework, a quantifiable scoring device created by the researcher based on the current literature. From the sample, 45 public and 45 private institutions were selected to test the hypotheses as a means to increase the generalizability of the conclusions to the whole population from which the teacher preparation programs were drawn and to reduce the inclusion of anomalies in the data. Also, the statistical tests implemented were designed with the assumption that the population data would be close to normal and the samples would be randomly selected.

Limitations

For the purposes of this study, the researcher selected NCATE accredited initial teacher preparation programs in the U.S. only, the generalizability was limited to NCATE accredited U.S. initial teacher preparation programs. The generalizability of the results of the study were limited because initial elementary teacher preparation programs that were not accredited or accredited through other recognized accrediting institutions were excluded. Since the researcher chose to randomly select from a large population, the researcher was able to generalize the data results. The samples included teacher preparation programs from different sectors with differences within each sector in regards to geographic regions, student enrollment and demographics in teacher preparation programs, as well as initial elementary teacher preparation program curricula. Other limitations may exist relating to the researcher having access to the pertinent information to evaluate the teacher preparation program's ability to provide evidence of 21st century skills into the program. The researcher conducted the entire study using secondary supporting documents that are accessible to the public and thus limited.

Definitions of Terms

21st Century Learners – "[T]hose for whom technology is at the center of their learning and interactions" (Rodgers et al., 2006, p. 1). They are individuals who multi-task, respect diversity, and prefer working collaboratively as they learn through discovery (Rodgers et al., 2006). "They crave interactivity, are good at reading visual images (though weak with reading skills), have strong visual-spatial skills, tend toward parallel processing and inductive discovery, look for fast response times which leads to short attention spans" (Rodgers et al., 2006, p. 2).

21st Century Learning - *"*A combination of a set of discrete 21st century skills (critical thinking, collaboration, information literacy), and academic standards to be implemented through digital innovations in the context of emergent research from the cognitive sciences on how people best learn" (Lemke, 2010, p. 246).

21st Century Learning Framework - For the purposes of this study, a rubric designed by the researcher, adapted from the work of Leavitt and Kania-Gosche (2011) and reviewed by experts in the field of education from Lindenwood University: Leavitt, Emrick, and Hutcheson, to measure evidence of 21st Century skills and knowledge in teacher preparation programs located in the U.S.

21st Century Learning Skills within pre-service teacher preparation programs - Defined by the researcher to include the following components: global awareness (Global Diversity Efforts, 2011; Johnson, 2009; Partnership for 21st Century Skills, 2004a), digital competencies (Alger & Kopcha, 2009; Zhao, 2009; NCREL, NCRTEC, & The Metiri Group, 2003), critical thinking competencies (Chorzempa, 2011; Sawchuk, 2009a; NCREL, NCRTEC, & The Metiri Group, 2003), collaborative competencies (Partnership

for 21st Century Skills, 2004a), cross-cultural competencies (National Heart, Lung, and Blood Institute [NHLBI], n.d.), communication competencies (Partnership for 21st Century Skills, 2004a), problem solving competencies (Johnson, 2009; Murray, Owen, & McGaw, 2005; Partnership for 21st Century Skills, 2004a).

Collaborative Competencies - The "ability to work effectively and respectfully with diverse teams [while] exercise[ing] flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal [and] assume shared responsibility for collaborative work…[while] value[ing] the individual contributions made by each team member" (Partnership for 21st Century Skills, 2009, p. 4).

Communication Competencies - The ability to **"**articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts [in addition to] listening effectively to decipher meaning…[and using] communication for a range of purposes… in diverse environments (including multi-lingual)" (Partnership for 21st Century Skills, 2009, p. 4).

Competency - "The ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context" (Organization for Economic Co-operation and Development, 2003, p. 4).

Critical Thinking Competencies - The ability to use inductive and deductive reasoning in multiple settings to recognize, interpret, and analyze beliefs, claims, arguments, and evidence in addition to evaluating and synthesizing information presented (Partnership for 21st Century Skills, 2009).

Cross-Cultural Competencies - "The understanding of diverse attitudes, beliefs, behaviors, practices, and communication patterns attributable to a variety of factors (such

as race, ethnicity, religion, SES [socio-economic status], historical and social context, physical or mental ability, age, gender, sexual orientation, or generational and acculturation status)" (NHLBI, n.d., para. 1).

Digital Competencies - "The knowledge, skills, attitudes, and ability to live a healthy and successful life in the virtual world" (Zhao, 2009, p. 176).

Global Awareness - "A conceptual understanding based upon an applicable knowledge of global and cultural perspectives. The understanding of concepts that impact the world encompasses, but is not limited to, environmental, social, cultural, political, and economic relations" (Global Diversity Efforts, 2011, para. 1).

Global Competencies - "The abilities to communicate effectively across linguistic and cultural boundaries, to see and understand the world from a perspective other than one's own, and to understand and appreciate the diversity of societies and cultures. Students need to appreciate the interdependence of nations in a global economy and to know how to adapt their work to a variety of cultures" (University of Wisconsin Global Competence Task Force, 2008, p. 3).

Global Education - "A curriculum that ensures that all of our students will be able to succeed in a world marked by interdependence, diversity and rapid change…. [It] provides knowledge and understanding of culture, language, geography and global perspectives… [and] trains students to rapidly access and evaluate a wealth of international information resources. Most importantly, … [it] enables students to understand the world through the eyes of others and teaches them how their actions can affect, and be affected by people throughout the world" (Fairleigh Dickinson University, 2011, para. 2).

Initial Teacher Preparation Programs (ITP) - **"**Programs at the baccalaureate or post baccalaureate levels that prepare candidates for the first license to teach. They include 5-year programs, master's programs, and alternate route programs that prepare individuals for their first license in teaching" (NCATE, 2010b, para. 52).

Problem Solving Competencies – "Problem solving involves goal-directed thinking and action in situations for which no routine solution procedure is available. The problem solver has a more or less well-defined goal, but does not immediately know how to reach it. The incongruence of goals and admissible operators constitutes a problem. The understanding of the problem situation and its step-by-step transformation based on planning and reasoning, constitute the process of problem solving" (Murray et al., 2005, p.16).

Teacher Education Program - *"*The sequence of courses and experiences in general and professional studies required by a college/university for the preparation of professional education candidates to teach a specific subject or academic area, to provide professional education services or to administer schools. A program can be a major in education…a major, minor, or endorsement in an academic area with professional education requirements for licensing" (NCATE, 2010a, para. 5).

Teaching Residency Program - also known as a teacher preparation program.

A school-based teacher preparation program in which a pre-service teacher works with a cooperating teacher or mentor for one academic year to acquire the necessary skills to become an effective teacher while receiving educational support and instruction from a teacher preparation program (Westlaw Next, 2011a).

Teaching Skills - Skills that enable a teacher to increase student learning, achievement, and the ability to apply knowledge; effectively convey and explain academic subject matter; effectively teach higher-order analytical, evaluation, problem-solving, and communication skills; employ strategies grounded in the discipline of teaching and learning that are based on empirically-based practice and scientifically valid research. . . ; conduct an ongoing assessment of student learning . . . ; effectively manage a classroom; … communicate and work with parents, and involve parents in their children's education (Westlaw Next, 2011a, 20 U.S.C.A. 1021).

Summary

The intent of this study was to investigate NCATE accredited elementary teacher education programs within U.S. universities to find evidence of 21st century knowledge and skills measured by a comparison to characteristics and standards represented in the 21st Century Learning Framework. The researcher examined program documentation, such as course descriptions, course syllabi, and mission statements for evidence of characteristics associated with the following areas: of global awareness; digital competencies; critical thinking competencies; collaborative competencies; cross-cultural competencies; communication competencies, and problem solving competencies.

Chapter 2 is a review of the framing literature on the following topics: brief history of teacher preparation programs, societal pressures to improve preparation programs, in addition to the identification of 21st century skills. Chapter 3 provides details regarding the methodology, including the research context, the population, and the sample, as well as the method used to select the sample. The researcher identifies the 21st century skills framework that was used to determine the teacher preparation

programs' abilities to prepare graduates for the 21st century classroom and procedures for conducting the research data analysis. The results are presented in Chapter 4, and a discussion of results with implications and recommendations is in Chapter 5.

Chapter Two: The Literature Review

Chapter 2 includes an extensive review of literature, including background of the problem and the American public education; societal pressures to improve teacher quality; current teacher preparation reform; teacher preparation accreditation; and teacher licensing practices. Clinical experience, recruitment and retention of highly effective teachers, and longitudinal data systems are also discussed, in addition to 21st century skills.

Background of the Problem

According to NCATE President, Cibulka (2008), "All young people in America deserve an effective, well prepared teacher who can help them achieve their full potential and prepare them to meet the demands of a competitive global marketplace" (p. 2). In 2002 Secretary of Education, Paige reported to policymakers that teacher preparation program course work does not improve student achievement, thus negating the significance and effectiveness of teacher preparation in the U.S. (as cited in U.S. Department of Education, 2002). Attacks on teacher preparation programs lead to increased scrutiny and accountability for schools of education, thus forcing revision as well as program closures (Andersen, Glenn, & Imig, 2008; Fallon, 2006); however, Fallon (2006) recommended improving university sponsored programs and not using alternative licensure programs. The effectiveness of teacher preparation programs is questionable; therefore, changes must be made (U.S. Department of Education, 2002).

Secretary Paige (2003) created a picture of educational and economic Armageddon, as he addressed the National Press Club in Washington, D.C. stating "Unless improvements are made, American students will not be competitive with

students in other countries, dooming future generations to less opportunity, greater levels of poverty, and further disparities in health status" (para. 33). The U.S. educational system is focused on the skills and knowledge students need for the industrial age rather than focusing on the changing demands of the 21st century; the education system must prepare students to compete in a global society (Long & Holeton, 2009; The Teaching Commission, 2006; Zhao, 2009). If students are unprepared for the 21st century workforce, they will face economic disparity, as will the U.S.' economy (Kirsch, Braun, Yamamoto, & Sum, 2007). University of Pennsylvania Graduate School of Education professor, Boe, criticized such claims of severe disparity and the fear of losing economic ground (as cited in Long, 2007). In order for America to compete globally, educational leaders must revamp the curricula to better prepare students (Long & Holeton, 2009).

Gates (2005), Microsoft Co-founder, proclaimed that until the U.S. revamps its educational system to address the demands of the 21st century, "we [U.S.] will keep limiting-even ruining-the lives of millions of Americans every year" (para. 15) because Americans will be inadequately be prepared to compete globally. The Teaching Commission's report (2006) agreed with Gates' claim noting the strong global competition American's currently face and the competition future generations will face; "America's young people should be well educated. It is not only their potential that hangs in the balance; it is the nation's economic future" (p. 12). America must have effective teachers in the classroom to give students a chance to compete, as well as for the country to compete globally (Darling-Hammond, 2005, 2011a). For example Oberhelman (2011), Caterpillar CEO, found that many applicants do not possess basic skills, skills that should have been learned in high school, to maintain a job in the 21st

Century global economy. Therefore "[W]e [Caterpillar] spend a lot of time training and retraining. It is heartbreaking because our education system has failed all of us… (Oberhelman, 2011). The American workforce must adapt as technological demands and global competition increases (Kirsch et al., 2007).

Furthermore, American Federation of Teachers' President, Weingarten (2010) noted that over 90% of U.S. K12 students received a public school education from a system that "still operates on an Industrial Age model … [I]n too many schools … [the educational system] create[s] the pedagogical equivalent of a factory by reducing the learning experience to a conveyer belt or rote prep sessions and multiple choice tests" (para. 3). In agreement with Weingarten, National Education Association President, Van Roekel (2012) asserted that if improving education is the goal, educational leaders and policymakers must alter their beliefs from punishing schools, teachers, and students for high-stakes test results to focusing on "the core purpose of public education-ensuring students have access to a great education that prepares them for lifelong learning and success" (p. 7). Andersen et al. (2008) acknowledged that policymakers and educational leaders created the laws and sanctions for higher education institutions with minimal confidence in the teacher preparation system. If society wants schools to produce students that possess the necessary skills and knowledge to compete today, educational and political leaders must alter their approach from using punitive measures to rewarding positive results (Van Roekel, 2012; Weingarten, 2010).

Zhao (2009) believed "[W]e need to transform our thinking about education. It may still be locally funded and controlled, but we must think globally in terms of what knowledge and skills our children will need . . . in a globalized world" (p. 113).

Secretary of Education Paige (2003) shared his thoughts on the need to improve public education for all students: "I fear only the well educated will have the necessary skills, insight, and imagination to succeed" (para. 38). The public education system is not changing to meet the technological demands of society (Daggett, 2005). At the 2005 National Education Summit on High Schools conference, Gates (2005) professed "America's high schools are obsolete…our schools are broken, flawed, and underfunded" (para. 11-12) as he addressed governors from across the country about the desperate need to redesign America's schools to meet the demands of the 21st century. Gates denounced the current U.S. high school educational system stating "even when they're [high schools] working exactly as designed- [high schools] cannot teach our kids what they need to know today . . . It's the wrong tool for the times" (Gates, 2005, para. 13-14). Moreover the Public Opinion Strategies and Peter D. Hart Research Associates conducted a poll on behalf of Partnership for 21st Century Skills in 2007 and concluded "that Americans are deeply concerned that the U.S. is not preparing young people with the skills they need to compete in the global economy" (as cited in Partnership for 21st Century Skills, 2007, p. 1). Gates (2005) and Paige (2003) both agreed that changes to the educational system was imperative if America is going to compete globally.

The Committee for Economic Development's 2006 report, *Education for Global Leadership: The Importance of International Studies and Foreign Language Education for U.S. Economic and National Security* concluded that "many American students lack sufficient knowledge about other world regions, languages, and cultures, and as a result are likely to be unprepared to compete and lead in a global work environment" (p. 1). In the 21st century, schools should promote idealogy related to global citizenship (Zhao,

2009). As societies change the knowledge and skills necessary to succeed and compete in those societies change; some skills, such as using the internet and knowledge become more valuable while others become obsolete (Zhao, 2009). According to Rotherham and Willingham (2009)

> Critical thinking and problem solving . . . have been components of human progress throughout history, from the development of early tools, to agricultural advancements, to the invention of vaccines, to land and sea exploration . . . [S]kills as information literacy and global awareness are not new, at least not among the elites in different societies. The need for mastery of different kinds of knowledge, ranging from facts to complex analysis [is] not new either … What's actually new is the extent to which changes in our economy and the world mean that collective and individual success depends on having such skills. (para. 2-3)

Rodgers et al. (2006) concurred with Rotherham and Willingham (2009) believing that "Learning is now a life-long process of coping with change … Learning how to learn is the basis of education today" (p. 3). Cator, Director, U.S. Department of Education Office of Educational Technology, agreed that "The [students] must develop strong critical thinking and interpersonal communication skills . . . to be successful in an increasingly fluid, interconnected, and complex world" (as cited in *Education Week,* 2010, p. 32). The educational system must change to help students develop skills and knowledge related to critical thinking, problem solving, and global awareness (Rotherham & Willingham, 2009; Zhao, 2009).

Computer technology is a part of the K-12 student culture (Mullen & Weaver, 2008), and if educational leaders want reform, they must educate future generations and

the current generation of teachers how to incorporate 21st technology skills into the curriculum and instructional practices (Mullen & Weaver, 2008; Rodgers et al., 2006). The integration of technology into classrooms can positively affect student learning, but administrators and schools of education must train teachers to operate the devices, as well as how to improve instructional practices by integrating technology in the classroom (Kozma, 1991). Educational leaders should create learning opportunities and cultures that value technology integration in instructional practices for teachers and provide the necessary resources to create "technology-rich learning environments" (Rodgers et al., 2006, p. 4). Mullen & Weaver (2008) supported the integration of technology into the teacher preparation program to serve as an "extension of the environment in which pre-service teachers, live, work, think, and communicate" (p. 28). There is much debate pertaining to the skills and knowledge teachers should possess, in addition to how teacher preparation programs should prepare the next generation of teachers (Levine, 2006; Neumann, 2010).

Nearly three-fourths of voters polled by Public Opinion Strategies and Peter D. Hart Research Associates support teaching students fundamental core subject material, in addition to 21st Century Skills, such as computer technology skills, critical thinking and problem-solving, teamwork and collaboration, creativity, and global awareness among others (Partnership for 21st Century Skills, 2007). Students must have a strong fundamental knowledge base, as well as collaborative and communication skills (Kirsch et al., 2007). Singer, the Laurence McKinley Gould Professor of Natural Sciences at Carleton College, claimed "Integrating core concepts with key skills will prepare students for the workplace and college … [and] Developing skills in the context of core concepts

is simply good practice" (as cited in *Education Week*, 2010, p. 32). Some supported a curricula that included an integration of core subjects with 21st century skills (Partnership for 21st Century Skills, 2007).

President Obama negated the effectiveness of current multiple choice testing associated with NCLB, concluding that assessments should determine whether students 'possess 21st century skills like problem-solving and critical thinking and entrepreneurship and creativity' (as cited in Darling-Hammond, 2011a, p. 17). In agreement with President Obama, Zhao, Michigan State University Professor and director of the U.S.-China Center for Research on Educational Excellence, confirmed that "global competitiveness depends on students' abilities to innovate and invent, not on their test scores" (as cited in Long, 2007, p. 26). Students must inquire, think critically, and demonstrate the skills necessary to "learn on their own" (American Association of School Librarians, 2011, p. 2). The Committee for Economic Development (CED, 2006) concurred, stating "Full participation in this new global economy will require not just competency in reading, mathematics and science, but also proficiency in foreign languages and deeper knowledge of other countries and cultures" (p. vii). Students must be technologically literate as "Technology skills are crucial for future employment needs. Today's students need to develop information skills that will enable them to use technology as an important tool for learning, both now and in the future" (American Association of School Librarians, 2011, p. 2). Zhao (2009) noted the need for the U.S. education system to prepare students to work in fields that require complex knowledge and skills, such as engineering or computer programming. In addition, 21st century students and workers must have the ability to adapt as society changes (National Center

on Education and the Economy, 2007). "In the new era, we need more diverse talents rather than standardized laborers, more creative individuals rather than homogenized test takers, and more entrepreneurs rather than obedient employees" (Zhao, 2009). Students must possess 21st century skills and knowledge to prosper (National Center on Education and the Economy, 2007; Zhao, 2009), not be skilled multiple choice test takers (President Obama as cited in Darling-Hammond, 2011a; Zhao, 2009).

Educators face challenges related to discrepancies in how current students learn and how preparation programs taught current teachers how to teach (Rodgers et al., 2006). For example, current students are multi-taskers while teachers typically focus on one task; students learn through pictures, sound, and video while teachers teach through text; students tend to process and complete tasks without a clear route while teachers recommend completing thoughts and task in linear, logical, and sequential orders (Rodgers, 2006). According to Ravitch (2010) "For the past century, our schools of education have obsessed over critical thinking skills, projects, cooperative learning, experimental learning (p. 13). Chen (as cited in *Education Week*, 2010), author and Senior Fellow and Executive Director or the George Lucas Educational Foundation, acknowledged a need for change in instructional practices incorporating technology, such as the Internet. The Internet provides students information almost immediately and in addition to providing students opportunities to work collaboratively via internet technologies, thus mimicking common practices of the 21st century workplace (as cited in *Education Week*, 2010). Students constantly network and interact with others via technology while teachers require students to work independently to complete a task to learn a skill (Rodgers et al., 2006). "Twenty-first century skills must be an integral part

of teaching and learning of all academic subjects, not add-ons to the curriculum" (Partnership for 21st Century Skills, 2007, p. 6). Teachers must change their instructional practices to incorporate technology and further develop collaborative skills necessary for the 21st century (as cited in *Education Week*, 2010; Ravitch, 2010; Rodgers et al., 2006).

Many schools do not provide students opportunities to develop the knowledge and skills necessary to live in the virtual world (Zhao, 2009). According to the U.S. Census Bureau (2007) the fastest growing industry was Web search portals at approximately 41% growth; Internet service providers grew about 17% while online shopping venues increased by 12%. "[T]echnology erases geographical distances and brings millions of people together" (Zhao, 2009, p. 138). Twenty-first century teachers should be proficient in the use of technology in their classrooms: promethean white boards, social networking sites, blogs, podcasts, tweets, and digital storytelling (Chorzempa, 2011; Lin, Swan, & Van't Hooft, 2008; Rodgers et al., 2006). Technology allows students to continue learning after the teacher dismisses class; students can collaborate with other students using technology to complete assignments (Rodgers et al., 2006). Teachers must be technologically literate to effectively teach their students in the digital age (Chorzempa, 2011; Lin et al., 2008; Rodgers et al., 2006).

Few universities have conducted research to determine the effectiveness of its teacher preparation programs (Cibulka, 2009). During Duncan's (2009) speech to the Teacher's College, Columbia University, he praised Stanford University's Dr. Levine for his 2006 research on the effectiveness of education preparation programs, which reported that nearly 60% of education preparation program graduates perceived their programs

inadequately prepared them for the 21st century classroom. According to Levine (2006) "[W]e lack empirical evidence of what works in preparing teachers for an outcome-based education system. We don't know what, where, how, or when teacher education is most effective" (pp.18-19). More research is needed to determine the effectiveness of teacher preparation programs (Levine, 2006).

According to U.S. Secretary of Education, Duncan "Too many future teachers graduate from prep programs are unprepared for success in the classroom . . . We have to give teachers the support they need to ensure that children get the high quality education they deserve" (as cited in U.S.Department of Education, 2011b). State agencies, school districts, and teacher preparation programs must make improvements in teacher preparation if teachers are going to become more effective in the 21st Century classroom (Rotherham & Willingham, 2009). Duncan reitterated "Our [The U.S. Department of Education] goal is to develop a system that recognizes and rewards good [teacher preparation] programs, and encourages all of them to improve" (as cited in U.S. Department of Education, 2011b). In contrast, Levine (2006) recommended the closure of ineffective teacher preparation programs. The debate continues as to whether ineffective programs should be revamped or closed (Levine, 2006; Rotherham & Willingham, 2009).

While addressing an audience at Teacher's College, Columbia University, Secretary of Education Duncan (2009) congratulated top teacher preparation programs: Stanford, Michigan, and the University of Washington, in addition to Emporia State University, located in Emporia, Kansas; and Alverno College, located in Milwaukee, Wisconsin while also acknowledging the country's desperate need for reform to the

teacher preparation programs. Duncan (2009) stated "Many if not most of the nation's 1,450 schools, colleges, and departments of education are doing a mediocre job of preparing teachers for the realities of the 21st century classroom . . . teacher preparation programs need revolutionary change-not evolutionary tinkering" (para. 3). It is evident that many teacher preparation programs are ineffective; however, some programs are producing knowledgeable, effective graduates (Duncan, 2009).

The U.S. Department of Education predicted that by 2014 approximately one million new teachers will be employed by the nation's schools because one-third of the teachers and administrators will retire or leave the profession (Duncan, 2009). United States' universities and college education departments are extremely profitable, but school administrators often fund other programs rather than fund research related to educational improvement; therefore, Duncan (2009) blames higher education administration for the increase in remedial courses at the collegiate level because they are not willing to fund research aimed at improving teacher preparation programs. Levine (2006) acknowledged the strengths of some teacher preparation programs; he also claimed that many preparation programs are aware of weakness, but are unwilling to make programmatic changes that would greatly improve teacher quality. There is general consensus that changes must be made to teacher preparation programs, as well as public education curricula if U.S. students are going to have the necessary knowledge and skills to compete globally.

American Public Education Background

The American public education system and classrooms have undergone substantial change from the private one-room school house to the 21st century classroom

of today (Bureau of International Information Programs: U.S. Department of State, n.d.). Prior to the creation of public funded common schools in the mid 1800's, all schools were private or 'subscription schools' (Bureau of International Information Programs: U.S. Department of State, n.d, p. 11) and only the elite had access to these schools because most could not afford to pay the subscription fees associated with attending these learning institutions (Bureau of International Information Programs: U.S. Department of State, n.d.; 19th century education; n.d.). Educational activists, Mann and Barnard, created the common schools to provide free educational opportunities for all children and to prevent crime while fostering positive relationships among the newly diverse population due to tremendous increases in immigration (Bureau of International Information Programs: U.S. Department of State, n.d.; 19th century education, n.d.). The 21st century classroom has evolved drastically from the one-room school house for the elite to technologically advanced classrooms with diverse student populations of today (Bureau of International Information Programs: U.S. Department of State, n.d.).

During the 1800's America was an agrarian society; many Americans lived in rural settings and were self-employed or worked on local farms (Daggett, 2005; Kirsch et al., 2007). Children of the agrarian era received a basic education until their early teens when most entered the workforce full time (Daggett, 2005). Teachers used the McGuffey Readers, created by William McGuffey, to teach students valuable lessons of character, such as honesty, truthfulness, kindness, and other character traits associated with being a person of good moral character according to the White, Anglo-Saxon, Protestants of the times (19th century education, n.d.). Agrarian societies not only focused on learning

basic concepts, but they also focused on creating students of character (19th century education, n.d.; Daggett, 2005).

In 1893 the Committee of Ten was formed to identify society's educational needs in the creation of the future workforce (Daggett, 2005; Weidner, n.d.). To meet the demands of the Industrial Age, the Committee of Ten recommended the implementation of higher educational standards, in addition to increasing the number of years of formal education to eight years of elementary education and four years of secondary education for a selected 20% of students attending public institutions (Daggett, 2005; Weidner, n.d.). According to Weidner (n.d.) "the goal of high school was to prepare all students to do well in life, contributing to their own well-being and society's good, and to prepare some students for college" (para. 3). With the creation of many factories during the Industrial Revolution, Americans moved to cities for employment opportunities, which caused schools to focus on skills necessary for factory work (Daggett, 2005; Kirsch et al., 2007; Leland & Kasten, 2002). As economic demands shifted, so did educational goals (Weidner, n.d.).

In 1911, Cubberley, Stanford Dean of the School of Education, recommended to other pedagogues the implementation of a curriculum that focused on real life skills, rather than academic curriculum (Ravitch, 2010). A few years later, the federal government released an educational report by Thomas Jesse Jones that encouraged the implementation of hands-on learning to help black children develop skills necessary to function in society; the skills valued all related to farming and gardening (Ravitch, 2010). The Smith-Hughes Act in 1917 established a formal agricultural education system in the U.S.to help students develop the skills needed to work in an agrarian society (Anderson,

2008). In 1918 William Heard Kilpatrick, a Teacher's College professor, caused a stir in the education community with his recommendation to implement the Project Method, a method in which students worked collaboratively with other students as they learned by participating in hands-on lessons (Ravitch, 2010). Societal changes caused a shift in educational focus from basic education to collaborative learning (Ravitch, 2010).

During the early 1900's, effective teachers were those that practiced the ideologies associated with John Dewey and William; later, effective teachers were identified to have specific personality characteristics (Rebore, 2011). Dewey encouraged educational reform to give teachers more autonomy, eliminate rote memorization and promote critical thinking (Bureau of International Information Programs: U.S. Department of State, n.d.). Schools focused on learning through real-life activities; as a result, academic subject knowledge became less important; however, critical thinking, collaboration, and skills related to making decisions were extremely important (Ravitch, 2010). Teachers taught students basic life skills, such as how to prepare meals and basic math skills sufficient to ensure accurate calculation of regular bills (Leland & Kasten, 2002; Ravitch, 2010). In addition, teachers taught basic literacy skills necessary for average workers such as farmers, shopkeepers, and factory workers (Leland & Kasten, 2002; National Center on Education and the Economy, 2007); whereas, teachers taught children of the elite critical thinking and mathematical reasoning skills (National Center on Education and the Economy, 2007). Educational reformer, Dewey, lead educational reform, recommending curricula rich in life skills (Bureau of International Information Programs: U.S. Department of State, n.d.; Leland & Kasten, 2002).

In the mid 1900's the education profession identified effective teachers as those that demonstrated "generic teaching behaviors that would be effective in all instructional settings" (Rebore, 2011, p. 202). The Life Adjustment Movement of the 1950s focused on incorporating real-life skills into public education as a means to prepare students for the real world (Ravitch, 2010). The launch of the Soviet Sputnik in 1957 ignited educational controversy amongst the public: Was the American public education system adequately preparing its students for the future? (Bureau of International Information Programs: U.S. Department of State, n.d.; Long, 2007; Peralta-Nash, 2008; Whyfiles.org, n.d.). As a result the public became more concerned with the quality of public education with a focus on student achievement, school efficacy, and continued education access at the post-secondary level (Polirstok & Digby, 2008) as well as student proficiency in mathematics, science, and foreign language (Kirsch et al., 2007; Whyfiles.org, n.d.). Prior to Sputnik states assumed all responsibility for educating the youth, but the public distress from Sputnik initiated federal involvement in education for the first time; in 1958 President Eisenhower and the U.S. Congress passed the National Defense Education Act to improve education by funding scientific equipment for schools providing financial support to college students (Whyfiles.org, n.d.). The launch of the Soviet Sputnik in 1957 created mass panic in the educational arena as the public questioned whether teachers were effectively preparing students for the future, especially in the areas of mathematics and science (Bureau of International Information Programs: U.S. Department of State, n.d.; Long, 2007; Peralta-Nash, 2008; Whyfiles.org, n.d.).

Process-product research became pivotal in the 1960's and 1970's as educational leaders determined teacher effectiveness by specific teacher behaviors in relationship to

student achievement (Peralta-Nash, 2008). As the American economy became a manufacturing society, some viewed the Committee of Ten as extremely effective especially since the U.S. lead the manufacturing economy for most of the 20th century (Daggett, 2005). However the U.S. no longer competed in a manufacturing economy in the late 1900's; instead, it was in the midst of an information revolution (Daggett, 2005). Americans worked for large companies, which required employees to use new technologies as part of their jobs, thus forcing the public education sector to adapt to societal changes (Daggett, 2005). As a result of the societal pressure, educational leaders and politicians redefined teacher effectiveness and acceptable student achievement (Daggett, 2005).

With the release of *A Nation At Risk* in 1983, American educators faced strong criticism from the public, as well as from politicians for inadequately preparing students to compete in the Information Age (20th Century Public Education, n.d.; Bureau of International Information Programs: U.S. Department of State, n.d.; Daggett, 2005; Long, 2007), yet the "at risk" students of the 1980's were the same students that lead the U.S. to become the powerhouse in the Information Age of the 1990's (Long, 2007). With pressure from society, educational leaders once again raised core academic standards for all students to meet the increasing demands of the Information Age (Bureau of International Information Programs: U.S. Department of State, n.d.; Committee for Economic Development, 2006; Daggett, 2005; Peralta-Nash, 2008) while implementing additional mandatory curricular changes and state testing to determine student achievement (20th Century Public Education, n.d.).

As a result of public outcry, The Holmes Group and about 100 other higher education institutions set out to improve teacher quality by improving teacher preparation programs and creating a collaborative relationship between graduate schools of education and K-12 education systems, also known as professional development schools (PDS) (Levine, 2006; Peralta-Nash, 2008). According to Neumann (2010) "…a downturn in the economy resurrected educational crisis rhetoric of the early 1980s and an economic rationale for reforming teacher preparation programs began to appear in government reports and other policy documents [in the 1990s]" (p. 4). For example, the Secretary's Commission on Achieving Necessary Skills (SCANS) report recommended in 1991 that students possess functional skills resembling those associated with 21st Century Skills (Ravitch, 2010). Once again public outcry ignited educational reform, especially in teacher preparation (Neumann, 2010).

The educational reform of the 1980s and 1990s focused on raising standards in the core curriculum, as well as school accountability, but lacked a focus on areas of globalization (Committee for Economic Development [CED], 2006). During his presidency, President George H.W. Bush and other political leaders clearly stated the need for America's graduation rate to improve from the current 90%, in addition to ranking number one in both mathematics and science; however, the exact opposite occurred (Darling-Hammond, 2011a). The high school graduation rates have since decreased by 20% and the U.S.' students now rank lower on Programme in International Student Assessments (PISA) than when the policymakers created the goals. Darling-Hammond (2011a) believed the reason for the U.S. downturn is that students lack the skills to think critically and solve complex problems (Darling-Hammond, 2011a). The

Organization for Economic Co-operation and Development (OECD) agreed "Individuals need a wide range of competencies in order to face the complex challenges today" (OECD, 2003, p. 4). On the contrary, Professor Boe refuted the international survey results, asserting that the U.S.' scores resemble those of other developed Western countries (as cited in Long, 2007). Students must possess a wide range of skills and knowledge; however, the degree to which U.S. students possess those skills and knowledge in relation to other industrialized nations is quesitonable (as cited in Long, 2007; OECD, 2003).

In response, educational leaders utilized NCATE's standards, which "incorporated into the curriculum the professional knowledge base for teaching and learning" to determine program effectiveness (Peralta-Nash, 2008, p. 61). These changes led to new research pertaining to "the kinds of knowledge, skills, and dispositions needed to teach; and how they interpreted the experiences provided in the teacher preparation courses and field experiences" (Peralta-Nash, 2008, p. 61). As a result of public scrutiny throughout the years, preparation programs have made alterations to preparation programs via improved undergraduate programs, which included "extended programs, requiring a subject matter major, offering more theoretical or social foundations . . . , more time in schools . . . , situating teacher education as a post-baccalaureate program" (p. 229), focusing on diverse student cultures, and integrating technologies in the instructional practices and student learning process (Andersen et al., 2008). Yet, every university had different teacher preparation program requirements, and every state has different licensure requirements, thus creating a wide range of programs with varying degrees of effectiveness (Darling-Hammond, 2011b).

President George W. Bush proclaimed at Ohio's Hamilton High School on January 8, 2002 as he signed No Child Left Behind (NCLB) into law, "Today begins a new era, a new time in public education in our country. As of this hour, America's schools will be on a new path of reform and a new path of results" (as cited in Zhao, 2009, p. 31). NCLB focused on improving teacher quality and student achievement in mathematics, reading, and science; the high stakes testing of these subjects forced schools to focus on the core subjects while making cuts to many electives, such as foreign languages (CED, 2006; Jacob, 2007; Kirsch et al., 2007; Van Roekel, 2012), yet no investments were made to increase teacher effectiveness (Darling-Hammond, 2011a). NCLB is one of the biggest educational reform movements since the Elementary and Secondary Education Act of 1965, as it reshaped the federal government's role in public education in an attempt to close the achievement gap between the advantaged and disadvantaged and minority students throughout the country (Darling-Hammond, 2005; Essex, 2005).

With the federal legislation of No Child Left Behind, the policy forced educators to raise standards and improve academic achievement annually as it tied teacher quality and student achievement as measured by standardized test scores (Bureau of International Information Programs: U.S. Department of State, n.d.; Daggett, 2005; Darling-Hammond, 2005; Neumann, 2010; Kirsch et al., 2007). NCLB and the Elementary and Secondary Education Act of 2001 clearly emphasized the need for highly qualified educators in the classrooms if the U.S. was going to be able to compete in the 21st century (Bennett, 2004; Darling-Hammond, 2005; Jacob, 2007; Levine, 2006). The U.S. Department of Education (2002) suggested that states "streamline certification

requirements" by making student teaching or clinical experience optional and eliminating "any other bureaucratic hurdles" (p. 28). Research had continuously illustrated that teachers who were trained in traditional university preparation programs were more effective, and their students achieved at a higher level of academic achievement (Andersen et al., 2008; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005; Fallon, 2006). NCLB forced educators to make instructional and curricular improvements, as a means to raise student achievement (Bureau of International Information Programs: U.S. Department of State, n.d.; Daggett, 2005; Darling-Hammond, 2005; Neumann, 2010; Kirsch et al., 2007).

President George W. Bush declared the necessity of increasing the number of math and science teachers by 70,000 as a means to providing qualified professionals who can increase student math and science competencies (The White House: George W. Bush, 2006). NCLB also expressed the need for students to be technologically literate (NCREL, NCRTEC, & The Metiri Group, 2003). NCLB required teachers to have subject content knowledge and be highly qualified, but it did not require a course focus on pedagogical knowledge, which teaching candidates study in traditional teacher preparation programs (Darling-Hammond, 2005; Levine, 2006). Expressing disapproval of NCLB, Jacob (2007) contested that "the response to teacher quality provisions in NCLB illustrates that it is easier to relabel the problem rather than address it directly" (p. 147). President George W. Bush believed increasing the number of highly qualified math and science teachers would improve student achievement (The White House: George W. Bush, 2006); however, educational leaders, such as Darling-Hammond (2005), Levine (2006) and Jacob (2007) questioned the effectiveness of his proposal.

The Teaching Commission's report (2006) claimed "A fiercely competitive global information economy, powered as never before by innovation and intellect, demands that America's young people be well educated. It is not only their potential that hangs in the balance; it is the nation's economic future" (p.12). Neumann (2010) questioned the purpose of policy reports on education since the Commission's report focused on "an ideology that subordinates democratic values to market values and prioritizes economic purposes of schooling; an ideology that has pervaded discourse on public K-12 education for decades" (p. 5). National Center on Education and the Economy (2007) concurred with the The Teaching Commission's report citing that digital technologies allowed groups of individuals to work collaboratively without being in close physical proximity; therefore, "a rising number of American workers at every skill level are in direct competition with workers in every corner of the globe" (p. xvii). The CED believed"it is crucial to ensure that all students become globally competent citizens who will lead our country in the twenty-first century" (CED, 2006, p. vii). President George W. Bush claimed in the 2006 televised State of the Union address "Preparing our nation to compete in the world is a goal that all of us can share" (The White House: George W. Bush, 2006). Americans can agree that students must be well educated and have the ability to work collaboratively if the U.S. is going to compete with other nations for work (The Teaching Commission, 2006).

The Secretary's Fourth Annual Report on Teacher Quality also addressed the dire need for educational reform stating "[t]he international economy of the 21st century is competitive and , as our children become young adults, they must have the skills developed through a strong education to keep our nation competitive" (U.S. Department

of Education, 2005, p.xii). Kirsch et al. (2007) agreed that employees must possess a fundamental knowledge base and skills to compete in the 21st century. Company leaders want to hire the "most competent, most creative, and the most innovative people. . . and [the companies] will be willing to pay them top dollar for their services. This will be true not just for the top professionals and managers," but for all levels of employment (National Center on Education and the Economy, 2007, p. xviii). Therefore, the public education system must produce students who not only possess a strong fundmental knowledge base, but are also competent, creative, and innovative (National Center on Education and the Economy, 2007).

Like the Fourth Annual Report, *The Secretary's Fifth Annual Report on Teacher Quality* reitterated the desperate need for educational reform; however, the fifth report focused on improving teacher preparation to ensure that students will "succeed in the modern workforce and a global economy. In this era of global competitiveness, what teachers know and how they affect student achievement are of critical importance to the future of America" (U.S.Department of Education, 2006, p. 48). National Center on Education and the Economy (2007) urged educational reform since "the core problem is that our education and training systems were built for another era, an era in which most workers needed only a rudimentary education" (p. xix). CED (2006) also encouraged educational reform stating "to have citizenry that is knowledgeable of world regions, global issues, and foreign cultures . . . [and] conversant in other languages, we will need to strengthen the curriculum of the K-12 education system . . . [and] our colleges, universities, and professional schools" (p. 25). Munson, Common Core President and Executive Director, acknowledged the necessity of 21st Century skills; however, she

supported a fundamental knowledge base of understanding, such as the Common Core, while 21st century proponents often negated the necessity of the fundamental knowledge base, as long as students had the skills necessary to locate the information (as cited in *Education Week*, 2010). Teacher effectiveness affects student achievement; therefore, teachers must be better trained for the 21st century classroom while attending teacher preparation programs (U.S. Department of Education, 2006).

Societal Pressures to Improve Teacher Quality

"Teacher quality is the most crucial component in promoting student learning" (O'Donovan, 2010, para. 1). Educational institutions that have teacher preparation programs are currently facing scrutiny (Cibulka, 2008; Fallon, 2006; Levine, 2006). Educational leaders should evaluate teacher effectiveness based on student achievement or student learning (Hanushek & Rivkin, 2007) since teacher effectiveness is the greatest indicator of student achievement (Duncan, 2009; Fallon, 2006; Peralta-Nash, 2008). Moreover, critics of the U.S. teacher preparation programs blame the lack of student success on ineffective or poorly trained educators (Cibulka, 2008; Levine, 2006; Neumann, 2010). However, according to the U.S. Department of Education (2012) "The United States has no . . . centralized authority exercising single national control over postsecondary educational institutions . . . [so] the states assume varying degrees of control over education . . .[and as a result] American educational institutions can vary widely in the character and quality of their programs" (para 6). Levine (2006) noted the varying degree of preparation program quality, in addition to curriculum and clinical experiences, which affects teacher preparation program quality, as well as teacher effectiveness.

San Diego State University and Chula Vista Elementary School District/Clearview Elementary School Charter liason, Pohan (2003) acknowledged the strong criticism facing Colleges of Education, "Politicians and the general public have lost confidence in the entire educational system. While some critics argue that too many credential courses are required, the majority seem to criticize Colleges of Education for simply failing to produce quality teachers" (p. 3). The National Center on Education and the Economy (2007) acknowledged the poor state of the current educational system, but it adamantly argued, "The problem is not with our educators. It is with the system in which they work" (p. xxi); thus, urging immediate reform. "We [the U.S.] have built a bureaucracy in our schools in which…the people who have the responsibility do not have the power, and the people who have the power do not have the responsibility" (National Center on Education and the Economy, 2007, p. xx). Results from national and state studies identified multiple components of education preparation programs that need improvement; areas mentioned include teacher preparation experiences, entry, and continued professional development (Cibulka, 2009). Educators, educational leaders, and teacher preparation programs all acknowledged the need to revitalize the educational system, but differed on who or what is to blame for the problem (Cibulka, 2009; National Center on Education and the Economy, 2007; Pohan, 2003).

Therefore, policymakers are holding higher education institutions more accountable (Cibulka, 2008; Levine, 2006). Reformers are currently evaluating all aspects of teacher preparation programs, as well as means to recruit, retain, compensate, and reward teachers (Andersen et al., 2008) since the U.S. does not have a policy solving the national concern (Darling-Hammond, 2011b). If the U.S. wants its students to

compete globally, political leaders and educational leaders must make drastic changes to the current educational system (Daggett, 2005); however, educational leaders and policymakers cannot agree on a vision or plan to improve teacher preparation programs (Levine, 2006). U.S. Department of Education Secretary, Duncan (2009) stated "[T]he education that millions of Americans got in the past simply won't do anymore" (para. 4). The educational system must make changes to improve the educational system (Daggett, 2005; Duncan, 2009).

Public Opinion Strategies, a national political and public affairs research group, and Peter D. Hart Research Associates found "an overwhelming 80% of voters say that the kind of skills students need[ed] to learn to be prepared for the jobs of the 21st century is different from what they needed 20 years ago" (Partnershipfor 21st Century Skills, 2007, p.1). High-school dropouts or those who do not earn a college degree will face financial hardship since it will prove extremely difficult to compete globally (Duncan, 2009). According to Regan (2008) "To succeed in schools and on the job today…students need to learn how to assemble data in a meaningful way that expresses the possibilities, interpretations, and implications that arise from the facts" (para. 28). According to the National Center on Education and the Economy (2007) "This is a world in which a very high level of preparation in reading, writing, speaking, mathematics, science, literature, history and the arts will be an indispensable foundation for everything that comes after for most members of the workforce" (p. xix). In addition to these fundamental basics, National Center on Education and the Economy (2007) believed Americans must have the ability to deal with abstract thoughts, analyze, synthesize, be creative, innovative, flexible, and self-motivated, as well as have the ability to collaborate

with others and adapt to the constantly changing global economy. Students must have a complex skill set to compete in the workforce upon graduation (National Center on Education and the Economy, 2007).

Public Opinion Strategies and Peter D. Hart Research Associates found that 99% of voters polled believed that "teaching students a wide range of 21st century skills-including critical thinking and problem-solving skills, computer and technology skills, and communication and self-direction skills is important to our country's future economic success" (as cited in Partnership for 21st Century Skills, 2007, p. 1). Teachers must help students develop the critical thinking and performance skills necessary to compete in the global economy (Darling-Hammond, 2011a). EDUCAUSE (2008), a non-for-profit organization, focused on improving informational technology in higher-education, outlined the "Top Teaching and Learning Challenges" for 2009 which included multiple components:

> Creating learning environments that promote active learning, critical thinking, collaborative learning, and knowledge creation; developing 21st-century literacies (information, digital, and visual) among students and faculty; reaching and engaging today's learner; encouraging faculty adoption and innovation in teaching and learning with IT [information technology]; [and] advancing teaching and learning (with technology). (para. 1)

The public and policymakers expect teachers to help students further develop these 21st century skills without providing adequate preparation opportunities or resources (Levine, 2006).

Due to changes in the U.S. economy and pressure from society to improve education, society and policymakers hold teachers to higher standards (Cibulka, 2008). "Americans are clearly concerned that the U.S. education system is not preparing young people with the skills they need to thrive in an internationally competitive environment" (Partnership for 21st Century Skills, 2007, p. 4). The CED (2006) acknowledged the demands placed on the American public education system, but believed reading, science, and mathematics skills, in addition to cultural knowledge and foreign language skills were vital for student success in the global economy. Hanvey (2004) also believed American students should acquire skills and knowledge relating to cross-cultural awareness. The National Center on Education and the Economy (2007) noted

> It is simply not possible for our students to graduate from our schools by the millions with very strong mathematical reasoning skills, a sound conceptual grasp of science, strong writing skills, world-beating capacity for creativity and innovation, and everything else . . . unless their teachers have the knowledge and skills we want our children to have. (p. xxiii)

Both teachers and students must possess 21st century skills and knowledge as they are held to higher standards in the workplace (National Center on Education and the Economy, 2007).

"Teachers are held responsible for elevating student achievement levels, ensuring that all students master a broad array of 21st century learning skills, closing the achievement gap, and accomplishing other laudable goals expected by our public schools" (Cibulka, 2008, p. 2). Duncan (2009) and Levine (2006) noted the demands placed on teachers, but Levine (2006) argued that teachers were unprepared to meet the

expectations of "educate[ing] every child in the class to achieve the same learning outcomes at a time in which the student body has changed economically, racially, geographically, linguistically, and academically" (p. 12). Duncan (2009) acknowledged the ever-increasing pressure placed on teachers to increase student achievement; therefore, he supported efforts to "recruit, reward, train, learn from, and honor a new generation of talented teachers" (para. 13). Cibulka (2008) and Duncan (2009) both acknowledged the ever increasing demands placed on educaotrs to prepare students ro compete globally.

According to the National Center on Education and the Economy (2007) the educational system should have abandoned its practice of hiring teachers who were average or below average and should be focused on the recruitment of top scholars into the profession by offering competitive compensation related to skills and effectiveness, rather than education and years of service. Hanushek and Rivkin (2007) supported compensating teachers based on their performance rather than based on years of service and levels of education. Many states have raised licensure standards in yet another attempt to ensure teacher quality and experience in diverse and high-needs classrooms while meeting new more rigorous curricular standards (Darling-Hammond, 2005), but critics, such as Haunshek and Rivkin (2007) suggested lowering the qualifications necessary to encourage more individuals to pursue the teaching profession (Darling-Hammond, 2005). Furthermore, Levine (2006) shared concern with teacher credentials since elementary teaching candidates are "less academically qualified than our children need or deserve" (p. 56) based on standardardized testing results. Fulton, National Commission on Teaching and America's Future director, not only acknowledged the

need to recruit top scholars, but she also noted the necessity of retaining effective teachers by providing opportunities for advancement (Heitin, 2010). Scholars, such as Haunshek and Rivkin (2007) recommended lowering qualifications for becoming a teacher while Heitin (2010), Levine (2006) and the National Center on Education and the Economy (2007) adamantly supported raising standards.

According to Cibulka (2008) "It is widely recognized that teachers have taken on a more critical role than ever before in our knowledge-based, technologically sophisticated, global economy, where educational dropouts and underachievers are assigned to secondary status" (p. 2). Society and policymakers have identified the significance of effective teachers, as well as the role teachers assume in preparing future generations for success (Cibulka, 2008; Rotherham & Willingham, 2009). As the U.S. searched for financial stability in a competitive global economy, Americans believed the quality of public education was to blame for the nation's turmoil while others believed public education was the avenue to solve the nation's problems (Daggett, 2005; Fallon, 2006). Policymakers blamed poor teacher quality on a lack of meaningful practice opportunities (Zimpher, 2010). Likewise, Andersen et al. (2008) and Levine (2006) concurred that teacher preparation programs were not providing preservice teachers adequate preparation for the 21st century classroom. Polirstok and Digby (2008) acknowledged the public criticism, but noted "If teacher performance is going to be scrutinized so closely through assessments of pupil achievement mandated by NCLB, then schools of education that prepare those teachers cannot escape that same scrutiny and accountability" (p. 124). Increased accountability has led to continued

"dissatisfaction with public-schools and teacher education" (Andersen et al., 2008, p. 227).

In response to public scrutiny, policymakers increased requirements for teacher preparation programs through the reauthorization of the Higher Education Act in hopes of better preparing future teachers (Cibulka, 2008; Neumann, 2010; Polirstok & Digby, 2008). Both the federal and state government are holding teacher preparation programs more accountable for providing evidence of the program's effectiveness and producing effective graduates, which later become educators in the 21st century classroom (Andersen et al., 2008). With the approval of Title II of the Higher Education Act legislation, policymakers continued to hold teacher preparation programs to higher standards (Polirstok & Digby, 2008; U.S. Department of Education, 2002).

In the past, the U.S. government offered teacher quality partnership grants designed to increase student achievement and improve teacher effectiveness by holding teacher preparation programs accountable for better preparing its graduates for the classroom, as well as recruiting individuals, especially minorities to the teaching profession (Westlaw Next, 2011b). Currently every teacher preparation program must submit their students' scores on the exam as outlined by Title II to the U.S. Department of Education, even though each state determines its own cut score for earning state licensure and the schools of education from being closed (Polirstok & Digby, 2008; U.S. Department of Education, 2002). Due to public outcry, teachers, educational leaders, and preparation programs were scrutinized for the educational system's inability to produce graduates that can compete in the 21st century workforce (Polirstok & Digby, 2008), which created increased accountability (Westlaw Next, 2011b).

Current Teacher Preparation Reform

As part of President Obama's educational reform, Race to the Top (U.S.Department of Education, 2011b) the U.S. Department of Education announced a plan based on provisions outlined in the Higher Education Opportunity Act of 2008 to improve teacher preparation programs, so teachers would be prepared to teach in the 21st century classroom. The funding allowed states to create plans to collect data and use it to determine the best ways to "prepare, identify, evaluate, and compensate effective teachers and principals" (Noell & Kowalski, 2010, p. 2). Levine (2006) also noted the need to improve teacher preparation programs since most programs were ineffective and "the products of poor programs undermine the quality of the teacher force and rob our children of opportunity" (p. 111). The proposal consisted of several initiatives to "reward the best teacher preparation programs, improve the quality at schools of education, and remove burdensome regulations" (U.S. Department of Education, 2011b, para. 1). States need stronger data identifying the most effective and ineffective programs if they truly want to improve teacher effectiveness (Noell & Kowalski, 2010).

The Race to the Top Initiative decreased required coursework for teaching candidates in addition to increasing alternative routes to certification (Darling-Hammond, 2011a), even though knowledge of core subjects, such as reading, math, and science along with pedagogical knowledge would improve teacher effectiveness (Duncan, 2009). National Education President Van Roekel supported the Department of Education's proposal since the NEA supports high standards for candidates wanting to enter the field of education; in addition, the proposal would be beneficial to the educational system since it would require all candidates to meet the criterion outlined by the Department of

Education (as cited in U.S. Department of Education, 2011b, para. 4). The collection of data for the longitudinal data system could be effective in leading educational reform, but teachers should have complete access to data results, so they can utilize the results to lead instructional practices based on student needs (Noell & Kowalski, 2010). Race to the Top provided additional means to teaching licensure, as well as increasing educational data (Darling-Hammond, 2011a; Noell & Kowalski, 2010).

The National Center on Education for the Economy (2007) found the highest achieving and most intelligent college students would not consider entering the field of education based on the number of required courses, as well as the courses being "irrelevant at best and intellectually vapid at worst" (p. 60); instead, those students would select a field of study that was perceived as more challenging and stimulating. Top performing countries, such as Finland, Australia, and Canada among others recruited students to enter the teaching profession by offering benefits and on-going support; therefore, the American education system and society must provide teachers the same respect, salary, and support to recruit and retain top teachers (Darling-Hammond, 2011a; Darling-Hammond, 2011b; Walker, 2012). A large percentage of top American college scholars were interested in teaching, but most changed their minds, citing poor compensation in relation to equal qualifications in other professions (Hanushek & Rivkin, 2007; Levine, 2006; Peter D. Hart and Associates, Inc., 2008; U.S. Department of Education, 2002), poor working conditions, and the inferior quality of teacher preparation programs (Hanushek & Rivkin, 2007; National Center on Education and the Economy, 2007). Other factors that deterred scholars from entering the teaching profession were the lack of respect for the teaching profession or how others viewed the teaching

profession (Peter D. Hart and Associates, Inc., 2008). The educational field must remove barriers that keep top scholars from entering the profession (National Center on Education and the Economy (2007).

In Levine's (2006) report: *Educating School Teachers*, he shared concern pertaining to the lack of continuity in teacher preparation programs; for example "[t]he content of the curriculum is too often a grab bag of courses, ranging across the various subfields of teacher education from methods to the philosophy and history of education, rather than the focused preparation needed for real classrooms" (p. 107). Mullen and Weaver (2008) concurred with Levine's report acknowledging that "teaching…is basic to the development of a design for a program of teacher education and is shaped by social, cultural, and political milieu of the times . . . An effective teacher education curriculum is more than a collection of courses" (p. 31). Teacher preparation program leaders must evaluate the required curriculum in teacher preparation programs to better prepare graduates (Andersen et al., 2008).

Even though NCATE and TEAC are widely respected accrediting bodies in the profession, some states allowed individuals to earn teacher licensure through an alternate accreditation route, such as Teach for America (Darling-Hammond, 2005; Polirstok & Digby, 2008). Over the last 20 years, there has been an increase in the number of alternative certification providers due to a shortage of qualfied teachers in the areas of math, science, and special education among other areas (Andersen et al., 2008; Cibulka, 2009; Levine, 2006; Rebore, 2011). Alternative education providers graduate about 10,000 certified teachers annually while college and university sponsored teacher preparation programs graduate approximately 220,000 certified teachers annually

(Duncan, 2009). Some policymakers and Jacob (2007) argued that there was no difference in student achievement based on whether the teacher earned licensure from a traditional or alternative route, but Andersen et al. (2008) and Fallon (2006) contested those findings, noting that university teacher preparation programs better prepare teachers.

Darling-Hammond (2005, 2011b) acknowledged the increase in alternate providers, but noted that teachers who entered the teaching profession through an alternate provider tended to lack the knowledge and clinical experience students from university or college based teacher preparation program graduates possess and the experience gained during their formal training. Yet, these teachers are most often employed in the highest-needs districts, affecting disadvanted students the most (Darling-Hammond, 2005). Approximately only one-fifth of Teach for America graduates remained in the classroom after four years of teaching; therefore, novice teachers were constantly in and out of the most demanding schools, leaving students with the greatest needs to be taught by the most inexperienced teachers year after year (Darling-Hammond, 2011b). Levine (2006) believed the increase in alternative routes and providers was a direct result of policymakers and the public having unreasonable expectations for traditional teacher preparation programs: teacher preparation programs should improve teacher effectiveness, close the achievement gap, and create novice teachers who have experience equivalent to a veteran teacher. According to Cibulka (2008) many NCATE approved institutions offer multiple options to earn a teaching certficate; however, he believed all licensed teachers must be held to the same high standards, no matter the path one takes. Some negated alternate providers' ability to

produce effective instructional leaders (Cibulka, 2008), while others noted that those teachers often work in the most challenging schools (Levine, 2006).

Kopp, founder and CEO of Teach for America, an alternate provider, supported President Obama's proposal since it would identify top programs and include analyses of student learning. Kopp noted "It is critically important to regularly analyze the effectiveness of our teacher-preparation pathways" (as cited in U.S. Department of Education, 2011b, para. 5). In agreement with Kopp, Loewenberg Ball, Dean of the University of Michigan School of Education, also supported the reform since the proposal would hold preparation programs accountable for teaching curricula that would better prepare the next generation of teachers (as cited in U.S.Department of Education, 2011b). Loewenberg Ball stated her support: "Setting performance requirements for responsible teaching is one of the most important improvements that the U.S. could make to ensure learning by all students" (as cited in U.S.Department of Education, 2011b, para. 6).

The teacher preparation program curricula varies greatly within university education preparation program and alternate non-university providers, as does the quality of the graduates (Cibulka, 2009; Levine, 2006; Rebore, 2011); however, "accreditation requires data collection on an ongoing basis and analysis of this data then drives program development and program quality" (Polirstok & Digby, 2008, p. 127), which is why many consider accredited teacher preparation programs superior to unaccredited programs. On the contrary, Levine (2006) considered teacher preparation programs, even those that are accredited nationally and within states, ineffective. Cibulka (2009) noted the need for improvement in preparation programs: "NCATE wants to work

collaboratively with states to improve policy that supports high quality educator preparation . . . NCATE calls all educator preparation providers-university and non-university, to attain high standards and be measured against them" (p. 4). Levine (2006) contested the validity of the accreditation since standards are consistently low and enforement of those standards is minimal; teacher preparation programs could better serve its students by setting high expectations and relevant standards for staff and students while also working to constantly improve the program. Both Levine (2006) and Cibulka (2009) acknowledged the need to improve both accredited and nonaccredited teacher preparation programs.

Technological advancements in education have initiated reform in the curriculum, as well as in how teachers instruct in the 21st century classroom (Andersen et al., 2008). According to the U.S. Department of Education (2011b) "[T]hese initiatives [Race to the Top]will reward and support the best programs, remove burdens from institutions and help programs improve so education schools can better prepare future teachers for classroom realities" (para. 9). Teacher preparation programs that receive federal partnership grants must implement reforms to ensure program graduates are highly qualified, in addition to possessing pedagogical knowledge relating to research based practices, such as universal design, behavioral interventions, and research relating to instructional practices and the implementation of technology into instruction, as well as other strategies to improve student achievement (Westlaw Next, 2011b). Reforms included altering the teacher preparation program curriculum to better assess the pre-service teachers' instructional skills, using research-based best practices and strategies to make instructional decisions (Westlaw Next, 2011b). The U.S. Department of Education

(2011b) supported curricular and instructional changes in teacher preparation programs, as well as public schools as yet another means to improve student achievement

Teacher Preparation Accreditation

The U.S. Department of Education (2012) stated "The goal of accreditation is to ensure that education provided by institutions of higher education meets acceptable levels of quality" (para. 1). Currently the U.S. Department of Education does not require schools of education to be accredited (Duncan, 2009); however, some states require teacher preparation programs be accredited to ensure the program's graduates' eligibility for state licensure (Polirstok & Digby, 2008). The U.S. Department of Education is not an accrediting body (Polirstok & Digby, 2008; The U.S. Department of Education, 2012), but the Secretary of Education compiles and publishes a report listing "nationally recognized accrediting agencies that the Secretary determines to be reliable authorities as to the quality of education or training provided by the institutions of higher education and the higher education programs they accredit" (U.S. Department of Education, 2012, para. 3). Polirstok and Digby (2008) noted that "inconsistencies in accreditation requirements from state to state and differences in standards that states adhere to complicate the process of licensure reciprocity" (p. 125). The Interstate New Teacher Assessment and Support Consortium (INTASC), consisting of 30 states, collaboratively created teaching licensure standards and assessments for all new teachers, which benefits teachers since the INTASC state members offer licensure reciprocity, thus allowing teachers to teach in multiple states (Darling-Hammond & Berry, 2006). Even though the U.S. Department of Education does not require schools of education be accredited, it closely monitors program effectiveness (Duncan, 2009).

Educational leaders created accreditation to provide institutions feedback about the institution based on non-punitive peer-evaluation (U.S. Department of Education, 2012). According to Polirstok and Digby (2008) "Accreditation is a quality assurance process intended to answer accountability-related questions by measuring institutions and programs against a set of standards that have been field tested by professionals over time" (p. 124). Former NCATE President, Wise (2008) stated "NCATE exists to provide quality assurance over practitioner preparation…One of the fundamentals of professional accreditation is to warrant that practitioners have graduated from units that meet core standards and expectations" (p. 7). The Teacher Education Accreditation Council's (TEAC, 2010) goal is to "offer public assurance that educators [that are graduates of TEAC accredited programs] are competent, caring, and qualified" (para. 1). Polirstok and Digby (2008) acknowledged that accreditiation would not fix all of the conflicts or deficits in teacher preparation programs or global competitivenss, but they believe it creates a resource as a means to improvement.

Education associations, such as NCATE, The American Association of Colleges for Teacher Education (AACTE), and TEAC all have identified characteristics related to effective teacher preparation programs and have created means for continuous assessment of the programs' effectiveness (U.S. Department of Education, 2012). Levine (2006) also proposed indicators of program quality: program purpose; curricular coherence; curricular balance; faculty composition; admissions; degrees; research; finances; and assessment. Even though the government, accreditation programs, and educational leaders have difference solutions, they all agree that changes must be made to improve

teacher preparation programs (Polirstok & Digby, 2008; U.S. Department of Education, 2012; Wise, 2008).

Teacher Licensing Practices

In the mid 1970's The National Institute of Education suggested changing the identifiable components of effective teacher preparation programs, which led to licensing practices similar to those used today; instead of education majors earning licensure upon graduation, teaching candidates must demonstrate knowledge and performance skills to earn licensure to teach (Rebore, 2011). Today many states require potential educators to have minimum credentials and require them to pass state tests as a means to guarantee effective instructional practices that promote student achievement (Bennett, 2004; Darling-Hammond, 2005; Keller, 2005; Kennedy, 2008). Teacher preparation programs often require teaching candidates to complete coursework in their subject areas to ensure more knowledgeable, effective professionals (Keller, 2005). On the contrary, the passing of educational exams and certification proceedings does not determine a teacher's effectiveness; it only determines whether an individual has sufficient knowledge required to pass the state's certification test (Bennett, 2004; Kennedy, 2008). Therefore, to determine whether a teacher candidate earns licensure, Wise (2008) believed agencies should use NCATE performance-based system to assess the knowledge, skills, professionalism, and teaching effectiveness of its teacher candidates. Furthermore, NCATE officials ensure the public that graduates from NCATE accredited teacher-induction programs will be effective P-12 educators (Cibulka, 2008) since NCATE focuses on continous improvement, improved efficiency, and altering NCATE reaccreditiation through the implementation of transformation iniatives that focus on

improving P-12 student performance (Cibulka, 2009). Even though individuals graduate from teacher preparation programs, it does not guarantee licensure, for they must demonstrate knowledge and performance skills to earn licensure to teach (Rebore, 2011).

Clinical Experience

According to Westlaw Next (2011a) teacher preparation programs should provide clinical experiences that include opportunities for the prospective teachers to further develop teaching skills by completing year-long clinical experiences that are spread throughout the program, aligned to the required course work with evidence of theory and best-practice incorporated into the classroom. Some of the top education preparation programs require teacher candidates complete one-year of student teaching while working with trained cooperating teachers to maximize the teacher candidate's growth; candidates also use data to drive instructional practices as they address gaps in student achievement (Duncan, 2009). The NCATE and the American Association of Colleges for Teacher Education (AACTE) support educational reform, placing more emphasis on clinical experiences, rather than coursework (Duncan, 2009). According to Zimpher and Jones (2010), clinical experience standards should emphasize P-12 student achievement, in addition to changes within instructional practices; they also recommended programs provide multiple clinical experiences to help educator preparation students bridge the gap between content and pedagogy (Zimpher, 2010; Darling-Hammond, 2005) since teacher candidates need more clinical experience (Levine, 2006). Teaching candidates must experience meaningful clinicals to practice and further develop effective instructional practices (Duncan, 2009).

According to Duncan (2009) the most effective teacher preparation programs are "coherent, up-to-date, research-based, and provide students with subject mastery. They have a strong and substantial field-based program . . . that drives much of the course work in classroom management and student learning." (para. 52). Even though NCATE accredited teacher education programs provide teaching candidates assessement creation and reflection opportunities, programs should be redesigned to provide more meaningful, productive learning opportunities, especially in formative and summative assessments and interpreting the assessment results (Cibulka, 2010). In addition, clinical experiences should include providing teaching experiences in high-need districts under the supervision of highly qualified cooperating teachers, to better prepare the preservice teachers for the realities of teaching in high-need districts (Westlaw Next, 2011b).

On the contrary, schools of education do not always place student teachers with qualified cooperating teachers in diverse settings, such as rural, urban, or special education classrooms due to difficulty associated with placing large numbers of students in multiple settings (Levine, 2006). However, Darling-Hammond (2009) has found that alternate providers do not provide the same clinical experiences as traditional university based preparation programs; teaching candidates from traditional programs often complete clinical experience in average schools with more advantaged students and teachers, as well as in schools with many disadvantaged students. For example, The California Alliance plans to develop its relationship with California State University, in the creation of successful teacher candidate graduates through the collaboration of the Long Beach Unified School District, CSU Long Beach, and Long Beach City College (Reed & Steinhauser, 2011). The cooperative created Urban Teaching and Education

Academy in a Clinical Home (UTEACH), a "site-based residency teacher preparation program" (Reed & Steinhauser, 2011, p. 3) designed to improve urban education while providing real-life classroom experiences for the teacher candidates, and often upon completion of the program, Long Beach Unified School District hires many of CSU's graduates (Reed & Steinhauser, 2011). This ideology is not new; moreover, San Diego State University and Chula Vista Elementary School District/Clearview Elementary School Charter have worked collaboratively since 1990 as they "prepare high caliber teachers" (Pohan, 2003, p. 4). After all, researchers have concluded multiple times that university and school partnerships have created more successful, effective teachers (Darling-Hammond, 1994; Levine, M., 2002) while raising student achievement (Darling-Hammond, 2005). Therefore, Pohan (2003) urged politicians and school officials to take action to improve educational preparation through collaborative partnerships, rather than "paying lip-service to the concept of university-school collaboration" (14). No matter the avenue to licensure, teacher candidates must experience the profession in multiple settings, including high-needs districts (Levine, 2006).

In order to improve student achievement, candidates should know the state standards and district curriculum, work collaboratively with other professionals to analyze student work, and identify and utilize best practice (Cibulka, 2010). Teacher preparation programs must prepare general educators to teach all students, including special education students who receive inclusive instruction; therefore, teachers must know the legal accommodations outlined in the student's Individualized Education Plan (IEP), the most effective research based teaching practices, and a variety of research

based strategies to reach every learner through differentiation (Bradley, Danielson, & Doolittle, 2007). NCATE requires teaching candidates to have effective, extended clinical experiences working with students of different learning styles, as well as a range of cognitive levels (Cibulka, 2008). Teacher preparation programs should also provide general education preservice teachers information related to legislation, as well as litigation, research based learning strategies, and meaningful experiences related to co-teaching or collaborative teaching since special education and general education teachers often teach classes collaboratively, but teacher preparation programs often address these issues in one education course, which is insufficient (Chorzempa, 2011).

Teachers must change their method of delivering instruction; instead of lecturing continuously, teachers must provide students differentiated learning opportunities that require students to work collaboratively with others while under the teacher's direction (Rodgers et al., 2006). Cator, the U.S. Department of Education Office of Educational Technology Director, supported the integration of technology into the classroom as a means to improve instructional practices while engaging students in learning and grooming them to become lifelong learners (as cited in *Education Week*, 2010). "Faculty must learn to communicate in the language and style of today's students. They need to teach faster, be less sequential and more parallel in their approaches, and provide students with greater access to the knowledge" (Rodgers et al., 2006, p. 3). Differentiation and student led instruction has replaced the historical practice of lecture in the 21st Century classroom (Rodgers et al., 2006).

Wise (2008) recommended that NCATE implement professional development schools, which focused on providing teacher candidates knowledge and opportunities to

further develop the necessary skills. NCATE later launched its "Transformation Initiative" as an avenue to improve teacher candidate effectivness (Cibulka, 2009). NCATE recommended the studying and implementation of best practices be incorporated into extensive clinical experiences that would help educators effectively teach P-12 students from all academic levels while creating connections between coursework and clinical experiences (Andersen et al., 2008; Cibulka, 2009). "The Transformation Initiative helps close the gap between theory and practice, knowledge and application, coursework and classroom" (p. 2) by focusing on aligning teacher preparation program standards with the needs of P-12 students (Cibulka, 2009).

Duncan (2009) stated that the most effective education preparation programs require teacher candidates complete one-year of student teaching while working with trained cooperating teachers to maximize the teacher candidate's growth. Since graduates claimed they would benefit from experience developing their classroom management skills, the Blue Ribbon panel recommended increasing clinical experiences to provide students opportunities to practice effective teaching methods (Zimpher, 2010). At the California State University (CSU) Summit on Transformative Change in the Preparation of Teachers, CSU created The California Alliance for Clinical Preparation Partnerships and Improving Student Learning, which proposed education preparation program clinical experience reform for teacher candidates: a clinical training model often associated with a medical residency (Reed & Steinhauser, 2011). "The California Alliance will select exemplary demonstration sites, pilot clinical preparation, promote rigourous measures of teacher candidate and program performance, and foster scale-up through state policies eliminating barriers to reform" (Reed & Steinhauser, 2011, p. 1).

Effective teacher preparation programs are raising the clinical experience requirements to better prepare teachers, as well as teaching new student-led instructional approaches (Duncan, 2009).

Recruitment and Retention of Highly Effective Teachers

"The sheer size of the teaching force, combined with the relatively high annual turnover rate within the teaching occupation, means that large numbers of employees flow into, between, and out of schools each year" (Ingersoll & Smith, 2003, p. 32). The U.S. Department of Education (2011b) proposed recruiting top students to the teaching profession by offering scholarships at the most effective teacher preparation programs in the country through the Presidential Teaching Fellows program. However, Levine (2006) noted in his research that approximately one-fourth of teacher preparation programs were indeed "strong" (p. 111). Educational leaders must find a means to retain the most effective teachers (Ingersoll & Smith, 2003).

In March, 2012, educational leaders from 23 countries concluded at the second annual International Summit on the Teaching Profession that "collaboration, support, and empowerment are the keys to creating and sustaining a high-quality teaching force" (Walker, 2012, p. 19). According to the U.S. Department of Education (2011c), all states are faced with the same problems: how to recruit and retain highly-effective teachers. States are working to ensure that highly-effective teachers are dispersed equally throughout districts and classrooms (Noell & Kowalski, 2010). Duncan (2009) acknowledged the teacher shortage, but reitterated the need to staff all schools with highly effective teachers. The large majority of teacher shortages relate to areas of math, science, special education, English Languge Learners, and Bilingual Education

(Andersen et al., 2008; Darling-Hammond & Berry, 2006; Duncan, 2009; Hirsch, Koppich, & Knapp, 2001; Rebore, 2011; U.S. Department of Education, 2011c; Viadero, 2007). Many low-income schools face the challenge of recuiting and retaining highly effective teachers (Andersen et al., 2008; Darling-Hammond, 2011a; Hirsch et al., 2001; Jacob, 2007; Levine, 2006; Rebore, 2011; Viadero, 2007; Wise, 2008). The International Summit on the Teaching Profession panel focused on preparing future and current teachers to work in high need schoools, as well as preparing teachers to teach 21st century skills in the classroom (Walker, 2012). Society must recognize and praise the most effective teachers, so they remain in the profession, as shortages exist (Andersen et al., 2008; Darling-Hammond & Berry, 2006; Duncan, 2009; Hirsch et al., 2001; Rebore, 2011; U.S. Department of Education, 2011c; Viadero, 2007; Walker, 2012).

In order to recruit and retain effective teachers, teacher preparation programs need to better prepare candidates by providing meaningful learning opportunities in low-income, challenging schools (Levine, 2006; Wise, 2008). Schools that have a high percentage of low-income, minority students often face challenges retaining effective teachers (Darling-Hammond, 2011a; Hirsch et al., 2001; Jacob, 2007; Rebore, 2011; Viadero, 2007; Watlington et al., 2010). Generally, these highly demanding positions are staffed with the least-qualified teachers (Duncan, 2009; Jacob, 2007; Peter D. Hart Research Associates, Inc., 2008; Viadero, 2007; Wise, 2008). Urban and rural school districts often face challenges recruiting and retaining qualified personnel (Hirsch et al., 2001; Rebore, 2011; Viadero, 2007), hence, explaining why some teachers in urban and rural schools lack educational training, experience, and licensure necessary to be effective (Jacob, 2007). Furthermore, Peter H. Hart and Associates, Inc. (2008)

acknowledged “talented, well-prepared, and effective teachers are the key to improved educational outcomes. But such teachers are often in scarce supply for the students that need them the most” (p. v).

Andersen et al. (2008), Ingersoll and Smith (2003), Levine (2006), Peter D. Hart Research Associates, Inc. (2008), and Rebore (2011) all acknowledged the nation’s desperate need for teachers as a large number of “baby boomers” retire and student enrollment increases. However, Ingersoll and Smith (2003) negated the solution proposed by the federal government, state governments, and school districts; rather than recuiting a large number of professionals to the field of education through the offering of numerous incentives, policymakers and school officials chose to address issues related to teacher attrition. Jacob (2007) concurred with Ingersoll and Smith, arguing that recruitment incentives are ineffective.

On the contrary, Darling-Hammond and Berry (2006) support offering incentives to top teachers to fill vacancies in mathematics, science, special education, or other areas often difficult to staff in high-needs schools. Rebore (2011) noted “Talent and skills are scarce commodities. School districts are ethically bound to find the most talented and skilled people available to achieve their mandate of educating children” (p.102-103). Zimpher and Jones (2010) also recognized the need to recruit, prepare, and retain effective educators . Teacher attrition is high among novice teachers; about 50% of novice teachers leave the profession entirely while the other 50% leave a position to pursue a new position in another district (Ingersoll & Smith, 2003). NCATE created new models for recruiting, developing, and retaining highly effective teachers in low-income schools (Cibulka, 2008). Rather than recruiting more college students into the

field of education, the current educational system needs to find ways to retain the most effective teachers in all districts, but especially in high-needs districts (Ingersoll & Smith, 2003) that offer salaries comparable to suburban, which are often less challenging (Hanushek & Rivkin, 2007; Peter D. Hart and Associates, Inc., 2008). In order to retain high-quality teachers that will improve student achievement, educator preparation programs must make programmatic changes (Watlington et al., 2010),

According to the National Center on Education and the Economy (2007) "If we want students graduating . . . with the skills [21st century skills] . . . we will have to have teachers who can write well . . . read a lot and well, and who are . . . good at mathematical reasoning . . . and who have . . . creative skills and abilities . . ." (p. 37). For this reason schools of education must recruit the highest achieving and intellectually sound students to the profession (National Center on Education and the Economy, 2007), and pay them comparable salaries to other professions (Darling-Hammond, 2011b; Hanushek & Rivikin, 2007). Darling-Hammond (2011b) outlined a plan to put a "well-prepared teacher in every classroom every year" (p. 26), which included improving recruitment processes and clincial experience through effective partnerships between preparation programs and schools; increase teaching licensure standards; using performance-based assessements to evaluate teachers; determine accreditation based on results; and offer competitive salaries to recruit and retain effective teachers. If society wants the best and brightest in every classroom, educational leaders and teacher preparation programs must recruit the highest achieving and most intelligent students to the profession (National Center on Education and the Economy, 2007) by offering them comparable salaries (Darling-Hammond, 2011b; Hanushek & Rivikin, 2007).

Since the P-12 student population is increasingly diverse, teacher induction programs must meet the demands of the diverse population by increasing the diversity of educators, in addition to improving educational programs that better fit the teacher candidates' needs (Andersen et al., 2008; Cibulka, 2008; Levine, 2006). President Obama proposed $40 million in an attempt to address the need for a more diverse teaching population (U.S. Department of Education, 2011b). San Diego State University College of Education has a diverse staff that actually resembles the diverse student body it partners with at Chula Vista Elementary School District/Clearview Elementary School Charter; the partnership offers teacher preparation students meaningful clinical opportunities and coursework that "help[s] future teachers develop skills and dispositions essential for working effectively with ethically and linguistically diverse students" (Pohan, 2003, p. 5). Pohan (2003) refuted claims that teacher preparation programs were inadequately preparing teacher candidates since her research found "that teachers from this [San Diego State University and Chula Vista Elementary School District/Clearview Elementary School Charter partnership] program exit with a high level of teaching efficacy and the pedagogical knowledge and skills necessary for succesful entry into the profession" (p. 14). Darling-Hammond (2005) supported partnerships such as these since many are effective at training future teachers while providing clinical experience in high-needs schools. Since the U.S. student population is more diverse, teacher induction programs must meet the demands of the diverse population (Andersen et al., 2008; Cibulka, 2008; Levine, 2006), as well as the continous demand for highly-qualified teachers in the most challenging schools (Darling-Hammond, 2011a; Hirsch et al., 2001; Jacob, 2007; Rebore, 2011; Viadero, 2007; Watlington et al., 2010).

Longitudinal Data Systems

Noell and Kowalski (2010) supported the creation of londitudinal data systems since many state tracking systems are inadequately linking teachers and students' achievement; moreover, this data has not provided educational leaders and policymakers meaningful data that can be used to lead educational reform. Not only should teacher preparation programs recruit highly qualified individuals from a diverse background, but they should also collect and analyze follow-up data to determine the programs' effectiveness and collaborate to improve student achievement (Cibulka, 2009). The United States' inability to measure the effectiveness of its education preparation programs is not new (Duncan, 2009). In 1963 President John F. Kennedy stated, "Research in education has been astonishingly meager and frequently ignored . . . It is appalling that so little is known about the level of performance, comparative value of alternative investments and specialized problems of our educational system" (as cited in Duncan, 2009, para. 26).

In yet another attempt to improve education preparation programs, NCATE created a Blue Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning in 2009; furthermore, while reviewing the literature, the panel noted the lack of research related to a program's effectiveness based on the graduates' effectiveness and student achievement (Zimpher, 2010). In concurrence, Fallon (2006) also noted the lack of research within educational fields, especially in teacher preparation programs and teacher effectiveness. To reiterate, Levine (2006) stated that "deans and faculty complained that teacher education research was subjective, obscure, faddish, impractical, out of touch, inbred, and politically correct, and that it failed to address the burning

problems in the nation's schools" (p. 52). A participant in Levine's (2006) research equated the lack of research in education to medical schools focusing on failing physicians, instead of focusing on improving patient health. More research related to program and teacher effectiveness is needed (Zimpher, 2010).

In agreement with Noell and Kowalski (2010), Levine (2006) recommended the development of a longitudinal database as a means to provide data necessary to improve preparation programs and teacher performance, with the goal of improving student success. Increasing implementation of assessments that measure teacher effectiveness would create data related to teacher effectiveness and a teacher preparation program (Cibulka, 2010; Levine, 2006; Noell & Kowalski, 2010), in addition to tracking student achievement from primary school through high school (Levine, 2002). Prior to longitudinal data systems, states only collected and analyzed data to meet mandatory accountability standards (Noell & Kowalski, 2010). The U.S. Department of Education planned to identify the strongest teacher preparation programs and create a database that would allow states to trace students' test scores to their teachers, as well as the teachers' preparation program (Noell & Kowalski, 2010; U.S. Department of Education, 2011b); furthermore, Noell and Kowalski (2010) expressed conern related to ensuring data reliability of the data system. Hanushek and Rivkin (2007) acknowledged the need to evaluate teacher preparation quality and teacher effectiveness, but also recognized the variables in student achievement that extend beyond teacher control, such as family and other personal influences.

With the inception of Title II, policymakers forced teacher preparation program leaders to work with district leaders to evaluate the preparation programs (Andersen et

al., 2008; U.S. Department of Education, 2002) and invest in tracking databases to determine program effectiveness (Andersen et al., 2008). As a result, educational leaders are creating longitudinal state databases that link teacher success to their preparation programs and monitor P-12 student achievement (Cibulka, 2010; Duncan, 2009) as educational leaders and policymakers believe teacher preparation program quality should be determined by the graduates of the preparation program students' achievement (Polirstok & Digby, 2008). Lousiana educational stakeholders are leading the development of the longitudinal state database (Cibulka, 2011) that will contain information related to teacher preparation programs, performance, and career (Cibulka, 2010). Fallon (2006) supported this movement as "The emergence of longitudinal databases that link the performance of individual pupils with specific teachers has resulted in the emergence of . . . value-added analysis, that allows us to identify the results of effective teaching" (p. 151). The database utilizes value-added assessment to determine the extent to which teachers affect student achievement (Cibulka, 2011), which should be the key factor of teacher effectiveness (Jacob, 2007). Databases such as this allow policymakers and educational leaders to evaluate teacher preparation program effectiveness based on evidence of teacher performance, retention, and preparedness (Darling-Hammond, 2011b).

Education preparation programs are analyzing the results and making curriculum changes in an attempt to improve the quality of the program (Duncan, 2009). Levine (2006) and the U.S. Department of Education (2002) emphasized the need to raise admission and graduation requirements for schools of education. Walsh, President, National Council on Teacher Quality acknowledged and expressed concern with the "low

academic barrier of entry into teaching" (as cited in Heitin, 2010, p. 7). Some teacher preparation programs, such as University at Lafayette raised admission requirements, raised English requirements, and added a counseling class to help teaching candidates bridge the gap between the coursework and the classroom (Duncan, 2009). With the utilization of databases such as these, NCATE and states were able to efficiently evaluate teacher preparation programs (Cibulka, 2009); prior to the inception of the database, teacher educator programs relied on student feedback to determine the programs' effectiveness (Cibulka, 2011). Information gathered from assessments such as the Performance Assessment for California Teachers (PACT) and Classroom Assessment Scoring System (CLASS) could also be stored on the database (Cibulka, 2010). Kopp, CEO of Teach for America noted "States that annually conduct such analyses, such as Louisiana and Tennessee, are providing valuable feedback to teacher-preparation programs, including Teach for America, and helping to inform school and district hiring decisions" (as cited in U.S. Department of Education, 2011b, para. 5). Furthermore, NCATE should also require its accredited teacher preparation programs to analyze the data to identify areas of concern and make changes to the programs to improve teacher quality (Cibulka, 2010). Educational leaders can make more objective, informed decisions to improve teacher preparation programs due to the new data collection procedures (Cibulka, 2009)

Led by Darling-Hammond, staff at Stanford University created the Performance Assessment for California Teachers (PACT) consortium, a group of universitites, district internship programs, and charter schools aimed at improving education; the group created the PACT, an assessment designed to evaluate teacher candidates and teacher preparation

programs (Cibulka, 2010; Duncan, 2009; Performance Assessment for California Teachers, n.d.a, n.d.b). PACT consists of three components: "1) embedded assessments such as case studies and analyses of student work; 2) a subject-specific teaching event designed to capture teaching acts, from planning through reflection; and 3) assessments of teaching in content areas which are distinct from the teaching event" (Cibulka, 2010, p. 1). Furthermore, the assessment required teaching candidates to have "subject-specific pedagogy" (p. 1), knowledge of teaching English Languge Learners, as well as an ability to demonstrate proficiency in student-centered instructional practices (Performance Assessment for California Teachers, n.d.). Through the implementation of PACT, states, districts, and teacher preparation programs have the capability to track teachers, in addition to their students' achievement; this information can provide meaningful data regarding the teachers' effectiveness (Cibulka, 2010; Performance Assessment for California Teachers, n.d.a).

Using PACT as a foundation, American Association of Colleges for Teacher Education (AACTE) created the first teacher candidate readiness assessment as yet another attempt to improve teacher preparation programs and ultimately student achievement (Duncan, 2009). In addition, teacher candidates are required to create and deliver lessons aligned to learning standards in a classroom while professors evaluate the candidates' lessons, classroom management skills and overall performances; the professors then provide meaningful feeback to help the candidate improve effectiveness (Duncan, 2009). However, Levine (2006) noted that universities that offered Master's degrees and baccalaurate degrees only "have lower admission standards, professors with lesser credentials, fewer resources, and produce less effective graduates in the classroom"

(p.71). Therefore, those considering applying to schools of education should inquire about readiness assessments, available resources, and opportunities to earn advanced degrees (Dunca, 2009; Levine, 2009).

California required all teacher candidates to pass the California Teaching Performance Assessment (CalTPA) exam to gain licensure (Commission on Teacher Credentialing [CTC], n.d.). The Educational Testing Service (ETS) created CalTPA, an assessment comprised of four performance tests which are embedded into teacher preparation programs to assess the teacher candidate (Cibulka, 2010) to ensure the candidate has the "knowledge, skills, and abilities required of a beginning teacher in California public schools" (CTC, n.d., p. 1). The results of the assessment are used to provide feedback to teacher preparation program officials as they revamp their curriculum and graduation requirements to improve candidate knowledge and skills (Cibulka, 2010; CTC, n.d.). Schools of education are using longitudinal databases, such as PACT and CalTPA to assess their teacher candidates and to evaluate their teacher preparation program's effectiveness (Cibulka, 2010; Duncan, 2009; Performance Assessment for California Teachers, n.d.a, n.d.b).

21st Century Skills

Current leaders in educational reform, such as Partnership for 21st Century Skills (P21) urged Americans to reform the educational system (Senechal, 2010). "The phrase '21st century skills' is everywhere in education policy discussions…from faculty lounges to the highest echelons of the U.S. education system" (Sawchuk, 2009a, para. 1). Many educators believed 21st century schools need to prepare students to compete in a global economy, but ambiguities in defining 21st century skills create confusion (November,

2010). "'21st-century skills"' is one of the most ubiquitous terms in today's education debates" (Silva, 2009).

Like Silva, *Education Week* (2010) acknowledged the difficulty in defining 21st century skills, as well as explaining how teachers should help students develop those skills. Some educators consider 21st century skills to be technology literacy, the ability to work collaboratively, or the ability to analyze and apply knowledge (Sawchuk, 2009b). *Education Week* (2010) defined 21st century skills as "certain core competencies such as collaboration, digital literacy, critical thinking, and problem-solving that advocates believe schools need to teach to help students thrive in today's world" (p. 32). Most educators associate 21st century skills with the Arizona based initiative, P21, which Kay and Golder-Dardis created with the help of the U.S. Department of Education (Partnership for 21st Century Skills, 2004b; Sawchuk, 2009b).

Since 2002, P21 earned not only the respect and support of many politicians, in addition to numerous prestigious and influential technology corporations, but viewed as the most influential advocacy group focused on incorporating 21st century skills into education (Johnson, 2009; Toppo, 2009). P21's mission is "to serve as a catalyst to position 21st century readiness at the center of U.S. K12 education by building collaborative partnerships among education, business, community and government leaders" (Partnership for 21st Century Skills, 2004c, para. 1). P21 brings attention to the American public education system's inability to create highly skilled graduates (Sawchuk, 2009b). A P21 committee consisting of business men and women from Dell, Intel, and Ford, along with other leading U.S. companies set educational goals: "an emphasis on information acquisition, communication, problem solving, interpersonal

interaction, self-direction, global awareness, economic and business literacy, and civic literacy" (Willingham, 2009, para. 4). P21 is focused on creating students that are prepared to compete in the 21st global economy (Johnson, 2009).

P21 members believed the key to creating productive citizens and workers lies in the combination of the three Rs, which they identified as the "umbrella for other subjects" (Partnership for 21st Century Skills, 2004a, para. 5). The three Rs consist of "English; reading or language arts; mathematics; science; foreign languages; civics; government; economics; arts; history; and geography," and four Cs, "critical thinking and problem solving; communication, collaboration; and creativity and innovation" (Partnership for 21st Century Skills, 2004c, para. 4). According to Barnett Berry (as cited in *Education Week*, 2010) 21st century learning "means that students master content while producing, synthesizing, and evaluating information from a wide variety of subjects and sources with an understanding and respect for diverse cultures" (p. 32) in addition to the three R's and three C's: creativity, collaboration, and communication. The majority of industrial countries that the U.S. is competing against focuses on a combination of content knowledge and skills (as cited in Toppo, 2009) since basic proficiency in core subjects "is not sufficient if workers are unable to think critically, solve problems, collaborate, or communicate effectively" (Partnership for 21st Century Skills, 2010, para. 14). Students must have a fundamental knowledge of core subjects, as well as 21st century skills to compete in the workforce (as cited in Toppo, 2009).

P21 created the Framework for 21st Century Learning, which described the necessary skills, knowledge, and expertise students must have to be successful in the 21st century (Johnson, 2009). Wessling, 2010 National Teacher of the Year, supported the

framework as is, which includes both content and skills (as cited in *Education Week*, 2010). While creating the framework, P21 members met with educators, civic and community groups, as well as business leaders (Johnson, 2009). Like Wessling, educators recommended a focus on both core content knowledge and skills as a means to improve student achievement; while civic and community leaders identified knowledge, and skills every member of society should possess, business leaders created a list of essential skills and knowledge employees must possess to ensure success in the workplace (Johnson, 2009).

Students must possess fundamental skills to compete in a global world; therefore, P21 created a framework focused on those skills (Partnership for 21st Century Skills, 2010). A strong fundamental core knowledge is required; in addition to 21st century content, such as global awareness, health and wellness awareness, and financial, economic, business and entrepreneurial literacy, information and communication technology (ICT) literacy defined as the ability to use technology to create knowledge and develop skills necessary to function successfully in the 21st century (Partnership for 21st Century Skills, 2004a). The Organization for Economic Co-operation and Development (2003) also identified technology skills, collaborative skills, and cooperative skills associated with effectively communicating and working within heterogeneous groups as 21st century skills. P21 executives and members supported the inclusion of life skills, those associated with leadership, accountability, adaptability, ethics, self-direction, personal and social responsibility, and people skills among others are essential (Partnership for 21st Century Skills, 2004a). Students must demonstrate basic skills to compete in the global economy (Partnership for 21st Century Skills, 2010).

With the aid of several education associates, such as the National Council of Teachers of Mathematics (NCTM), National Council of Teachers of English (NCTE), National Council of Teachers of Social Studies (NCSS), and the National Science Teachers Association (NSTA), P21 created maps to demonstrate how to incorporate the 21st century skills into the core content (Johnson, 2009). According to Silva (2009), a policy analyst for an education sector, noted that the proponents of 21st century skills support a stronger focus on thinking and reasoning skills, in place of the traditional core content; "An emphasis on what students can do with knowledge, rather than what units of knowledge they have, is the essence of 21st century skills" (p. 630).

The National Center on Education and the Economy (2007) asserted, "Creativity, innovation, and flexibility will not be the special province of [the] elite. It will be demanded of virtually everyone who is making a decent living" (p. 25). Furthermore, creative thinkers appreciate opportunities to explore and solve problems while working collaboratively with others who also take pride in working towards and accomplishing goals (National Center on Education and the Economy, 2007). Equally important, the public education system should provide students' opportunities to collaborate with others to develop global competence, the skills and knowledge students need to work efficiently with others from different cultures; as well as to further develop foreign language proficiency and knowledge of different cultures (Zhao, 2009). Laughter, Milner, and Tenore (2008) concurred with Zhao who wrote students need " . . . to understand themselves and others as cultural, racial, gendered, and ethnic beings in order to live and thrive in a global society" (p. 159); it is an essential competency from early childhood education through higher education. Americans need to understand and appreciate

diversity and be globaly aware (National Center on Education and the Economy, 2007). Therefore teachers must be more prepared to teach diverse populations (Andersen et al., 2008; Levine, 2006).

Since the 1940's state licensure agencies have required teacher preparation programs to integrate social foundations and multicultural education into the teacher preparation program curricula (Gollnick, 2008; Neumann, 2010). Kilpatrick and Van Til (1947) professed the necessity of multi-cultural education in their book, *Intercultural attitudes in the making,* by encouraging acceptance and respect among citizens from different cultures; the goal of intercultural education is to "ensure all the adequate realization of these social values [the acceptance and respect for others] and to remove and cure bias and prejudice" (p. 4). Afterward professional organizations, such as the National Conference of Christians and Jews, the American Council on Education, and the National Education Association (NEA) among others supported the inclusion of multicultural education in the curricula, as well as, providing opportunities for teacher training related to multicultural education (Gollnick, 2008). Teacher preparation programs should provide students opportunities to develop cultural awareness through coursework and clinical experiences in diverse settings that connect theory and practice as it is imperative in the 21st century (Dieker, O'Brien, Summy, & Whitten, 2008; Laughter et al., 2008; Levine, 2006). After all, teachers who have knowledge and experience with different cultures can better evaluate their influence on student success (Dieker et al., 2008). According to NCATE's Professional Standards for the Accreditation of Teacher Preparation Institutions, teacher preparation program graduates

should possess skills and knowledge related to cultural diversity (NCATE, 2008). Candidates preparing to work in schools as teachers or other school professionals need a,

> knowledge base to understand learning and the context of schools, families, and communities. They understand and are able to apply knowledge related to the social, historical, and philosophical foundations of education, professional ethics, law and policy … They understand … cultural influences on learning; exceptionalities; diversity of student populations, families, and communities; and inclusion and equity in classrooms and schools. (NCATE, 2008, p. 22)

Candidates must be knowledgeable and have multiple skills to effectively lead 21st century classrooms (NCATE, 2008).

On the contrary, one must note that NCATE does not require programs to design courses explicitly focused on diversity (Neumann, 2010). Teacher preparation programs need to increase pre-service teachers' opportunities to reflect on one's ideologies, in addition to opportunities to interact with diverse learners: students from different cultures, socioeconomic status, and speak languages other than English (Levine, 2006; Peralta-Nash, 2008) since novice teachers are inadequately prepared to work with diverse classrooms. (National Comprehensive Center for Teacher Quality and Public Agenda, 2008). Twenty-first century teachers must possess cultural knowledge and demonstrate skills to teach the diverse student population (Chorzempa, 2011); "Not only must educators teach accurately about cultural diversity in this country and the world, they must also be aware of cultural differences among students to build an educational environment that will help all students reach their potential" (Gollnick, 2008, p. 42). Teachers must present students opportunities to develop cross-cultural awareness while

utilizing data analysis to improve instructional practices and achievement for all students (Duncan, 2009).

The Council of Chief State School Officers and the National Governors Association included P21 ideologies in drafts of their college and career readiness standards (Sawchuk, 2009b). After speaking with local technology companies, Pope, the Manassas school superintendent, implemented 21st century skills into her district's curriculum because she wanted her students to be employable upon graduation, in addition to being an asset to the community (as cited in Mathews, 2009b). University of Tennessee Professor of Education and Early-Reading Expert, Allington, negated the necessity of technology in the 21st century classroom as technology has not improved students' ability to read or write, which is essential to a literate society (as cited in *Education Week,* 2010). The urgency and necessity of 21st century knowledge and skills is debated (as cited in *Education Week*, 2010).

According to Sawchuk (2009b) P21 members participate in "A proactive process for creating a new vision of education' (para. 16) along with networking with both federal and state political leaders while gaining inside information or 'early intelligence" (para. 16) relating to the future of public education. Sawchuk (2009b) does not know if the 'early intelligence' has helped increase revenues for Mehlman Vogel Castagnetti, a technology-lobbying firm based out of Washington D.C. that shared the same office with local politicians. According to Sawchuk (2009b) "In 2007 . . . P21 paid two private consultants more than $70,000 each to help spread the group's vision" (para. 22); furthermore, P21 members currently reap financial benefits as P21 endorses trained individuals who provide professional development opportunities for educators (Sawchuk,

2009b). P21 spreads its vision by offering professional development workshops related to 21st century skills (Sawchuk, 2009b).

The implementation of more technology into classrooms would result in substantial profits for many technology companies associated with P21 (Sawchuk, 2009b). Other educators have questioned P21's motives since many of P21's members have a vested financial interest (Mathews, 2009b). Educators realize technology companies can make a tremendous amount of money selling software, hardware, and other educational products (Mathews, 2009b). For example, Cator, the head of the U.S. Department of Education's office of educational technology, served on the P21 strategic council while working as a top executive for Apple Inc. (as cited in Sawchuk, 2009b). According to Munson, the president and executive director of Common Core, "The closer we look, the more P21's unproven educational program appears to be just another mechanism for selling more stuff to schools" (as cited in Sawchuk, 2009b, para. 6). Critics of P21 questioned the group's motives since the P21 board members affiliated with top technology companies such as, Intel, Apple, Bell, Adobe, Microsoft, Hewlett-Packard, and Cisco Systems, and others generate more than $1 million in revenue (Sawchuk, 2009b; Toppo, 2009). The number of products marketed to teach 21st century skills is drastically increasing; for example Lego markets an elementary engineering club while National Geographic markets science adventures, which promotes 21st century skills for middle schools (Mathews, 2009a). P21 President, Kay declined the accusations and reiterated the focus: reforming education; furthermore, in 2007 P21 spent over $1 million to promote 21st century skills, but approximately $500,000 went to E-Luminate, a marketing and communication-consulting firm that Kay co-founded and currently serves as the chief-

executive officer (Sawchuk, 2009b). Some question the motives behind the push for 21st century skills as leaders make lucrative profits (Sawchuk, 2009b).

As cited in Mathews (2009a) "Every aspect of our education system—preK-12, postsecondary and adult education, after-school and youth development, workforce development and training, and teacher preparation programs—must be aligned to prepare citizens with the 21st century skills they need to compete" (para. 5). Mathews (2009a) believed this "all-at-once-syndrome" (para. 5) will lead to the P21 movement becoming an educational fad. Willingham (2009) agreed, but worried that it will take years before the public and government realizes the movement is a fad. Sawchuk (2009a) mentioned that Wagner, co-director of the Change Leadership Institute at Harvard University's Graduate School of Education, recognized the importance of improving education, but Wagner also knows drastic changes take time and believed "Teachers will rise to the challenge given the kind of supports they need" (as cited in Sawchuk, 2009a, para. 35). Senechal (2010) thought, "The problem lies in the reformers' haste and dogmatism. Far too often, the 21st-century-skills argument carries a tone of urgency, even emergency" (p. 4). Mathews (2009a) was angry that Kay acknowledged the changes will take time and hard work, but P21 did not disclose that belief in any of the information disseminated by the organization.

The P21 movement called for students to think critically, as well as to work collaboratively (Mathews, 2009a). Rotherham and Willingham (2009) reiterated "Critical thinking and problem solving . . . have been components of human progress throughout history, from the development of early tools, to agricultural advancements, to the invention of vaccines, to land and sea exploration" (para. 2). For example, ancient

scholars, such as Socrates and Plato demonstrated those skills years ago; 20th century educator, John Dewey also emphasized problem solving and critical thinking (Mathews, 2009a; Regan, 2008; Silva, 2009). Likewise, critics of P21, such as Clement, a science teacher, believed 21st century skills are not new since they have been around since Socrates (as cited in Mathews, 2009b). According to Regan (2008) "The key difference is that today we have a new set of tools to apply to the tasks" (para. 1). Skeptics also believed the movement is just another name for quality instruction (Mathews, 2009b). Silva (2009) adds, the ability "to think critically, analytically, and creatively are not skills specific or unique to the 21st century" (p. 631). Regan (2008) reiterated that the skills associated with 21st century are not new; they are old ideologies revisited in modern society. Willingham (2009) suggested "It is important that states try to meet the goals set by P21-indeed, they are goals that have been articulated for at least 100 years" (para. 23).

Some believe the push for 21st century skills is in response to the changing workforce (Silva, 2009). An American Management Association survey found that "80% of executives believe that fusing the three Rs and four Cs would ensure students are better prepared to enter the workforce" (Partnership for 21st Century Skills, 2010, para. 14). Schools should prepare students for the workforce; however, "chasing fads and obeying whims of the market" (p. 10) will not prepare students for future employment (Senechal, 2010). Students must use technology efficiently to produce, collaborate, and solve problems since these skills are necessary in competitive job markets (Regan, 2008). The skills are not new; in fact, they are just more important since workers must be able to collect and analyze information from multiple sources, and use the information to make decisions (Silva, 2009). The only difference is the extent to which one must refine these

skills to compete and be successful in the workplace (Rotherham & Willingham, 2009). Ravitch, New York University education research professor and co-chairwoman of Common Core, argued "There is nothing new in the proposals of the 21st century skills movement. The same ideas were iterated and reiterated by pedagogues across the 20th century" (as cited in Sawchuk, 2009a, para.12).

The Washington Post critic, Mathews (2009a) called the P21 movement "a pipe dream whose literature should be tossed into the trash" (para. 2) because the P21 movement has not successfully provided adequate instructional guidance for teachers of the 21st century. Critics also questioned the instructional techniques P21 endorses, student-centered instruction that gives students freedom to problem solve while working collaboratively with others and using teachers as a resource who do not provide direct instruction, since many members are executives that do not have any formal training in effective instructional practices (Sawchuk, 2009a). Senechal (2010) argued "Employers may know what skills they need, but they do not necessarily know how this translates into instruction. Their perceptions are bound to the workplace and should not control curricula" (p. 10). November (2010) acknowledged "The opportunity before us is to redesign the culture of our schools to empower students to take more responsibility for managing their own learning and to work collaboratively with classmates and people around the world" (p. 282). Furthermore, Kay expressed "We need kids who don't just do what they're told but who are self-directed" (as cited in Toppo, 2009, para. 14). Even though some critics acknowledge the potential benefits of student-directed methods, many still support effective direct instructional practices because the teachers can focus on specific content and skills to meet specific objectives (Sawchuk, 2009a). In addition,

Zhao (2009) acknowledged that P21 does not determine the amount of content taught or the level of competency of each skill. The P21 organization and 21st century knowledge and skills movement has caused controversy in the educational and business arenas (Sawchuk, 2009a; Senechal, 2010).

Common Core, a Washington-based group that believed students should have a solid foundation of core subjects, argues that P21 "'marginalizes knowledge and therefore will deny students the liberal education they need,' and that skill is useless 'without prior knowledge of a wide array of subjects'" (Cavanagh, 2009, para. 3). Zhao (2009) adamantly opposes P21's ideology that certain subjects or skills are more important than others because this practice will "kill children's creativity and drain their curiosity for learning, [which] is . . . the spirit behind the 21st Century Skills Partnership framework" (p. 155). The 21st century skills movement focuses on reducing knowledge and limiting perspectives in an attempt to create a student with a business mind (Mathews, 2009b). To clarify P21's beliefs "We have never advocated . . . the teaching of 21st-century skills to separate from content . . . You can't just teach students to think; you have to teach them to critically think, problem-solve, and innovate about something. Knowledge is the base of learning" (Kay as cited in Cavanagh, 2009, para. 4). On the contrary, Senechal (2010) pointed out that P21 claimed to support the core curricula, but "disregards the structured study, discipline, and concentration that such mastery entails" (p. 5).

E.D. Hirsch Jr., founder of the Core Knowledge Foundation and educational author, encouraged a focus on grade-by-grade core curriculum, instead of 21st century skills (Toppo, 2009). The P21 movement is a waste of instructional time because it is "a fragmented approach with uncertain cognitive goals" (para. 4) that will negatively affect

students more than middle-class students because disadvantaged students learn less background information in the core subjects (Hirsch as cited in Toppo, 2009). There is a desperate need for educational reform since the most ineffective teachers teach students in the most poverty-stricken districts (Darling-Hammond, 2009; Mathews, 2009a). Furthermore, Rotherham, Education Sector director, noted the implementation of P21 skills "has the potential to be an intervention that's the weakest in the schools that have to be the strongest" (as cited in Sawchuk, 2009a, para. 29). On the contrary, Kay acknowledged these concerns, but continuously supported the group's goal of improving instructional practices to help students develop 21st century skills (as cited in Sawchuk, 2009a). In essence, in order for students to develop 21st century skills more efficiently, teachers need preparation and professional develop opportunities to learn best practices for teaching specific skills (Rotherham & Willingham, 2009). "Instead of rushing to incorporate 21st-century skills in all aspects of school, instead of embracing any change for its own sake; we should pursue perfection in curriculum and pedagogy" (Senechal, 2010, p. 10). In the midst of controversy related to P21, both sides acknowledged the desperate need for educational reform since the most ineffective teachers teach students in the most poverty-stricken districts (Darling-Hammond, 2009; Mathews, 2009a).

On February 24, 2009, P21 critics and Core Knowledge supporters shared their concerns on Capitol Hill (Sawchuk, 2009a). The group expressed that states who support P21 should "ensure that all students are also taught a body of explicit, well-sequenced content, a focus on skills will not help students develop higher-order critical thinking abilities" (Sawchuk, 2009a, para. 4). University of Virginia professor of psychology, Willingham (2009) negated P21's ideologies because they are "based on … flawed

assumptions about human cognition" (para. 8). Knowledge and skills are not separate entities; therefore, Willingham argued that cognitive science does not support P21's practices since students must have a foundation of the basics before they can determine which higher-order skills are necessary to solve specific problems (Willingham, 2009). Hirsch agreed with Willingham because before students can solve a problem, they must have sufficient knowledge to identify the problem (as cited in Willingham, 2009). Even if students can identify the problem, they must have knowledge to select which critical thinking skills are necessary to solve the problem (as cited in Willingham, 2009). In short, students cannot transfer critical thinking skills from specific content to real-world contexts (Sawchuk, 2009a). Supporters of Core Knowledge supporters shared their concerns with political leaders, noting the importance of core instructional ideologies (Sawchuk, 2009a, para. 4).

While Kay believed the critics negated the issue, he reiterated the importance of integrating content and skills to prepare students for the 21st century (as cited in Toppo, 2009). P21 is simply sharing the results of their research, and they will not "develop curriculum, standards, and assessments" (Kay as cited in Sawchuk, 2009b, para. 30). In fact, states and local school districts should be responsible for changing the curriculum, standards, and assessments (Sawchuk, 2009b). In November of 2009, the Massachusetts task force encouraged the state education commissioner, Chester to include 21st century skills in the curriculum, but the *Boston Globe* published editorials that vehemently opposed the request because many feared the change would be a detriment to core curricula (Toppo, 2009).

Kay's responded to critics "There's no question from the beginning that our work has been built on the premise that skills and content support each other, and the notion that you have to choose between them is a false-dichotomy" (as cited in Sawchuk, 2009a, para. 14). Kay also mentioned that the inclusion of liberal arts has not helped students develop the skills necessary to compete in the 21st century (as cited in Sawchuk, 2009a). Even though Core Knowledge Foundation vehemently opposed the 21st century skills movement, it agreed with P21 that students should learn factual knowledge while developing higher-level thinking skills, such as application, analysis, and synthesis, but students must have a solid foundation of core knowledge to illustrate critical thinking skills (Silva, 2009).

Due to the ambiguities of defining 21st century skills, P21 worked to define the 21st century skills, as well as developing a means to assess those skills identified with the help of Cisco Systems Inc., Microsoft Corp., and Intel Corp. (Sawchuk, 2009b). Kay wants to work collaboratively with proponents and critics to create a clear, precise set of 21st century skills that incorporates content and higher-thinking skills (as cited in Toppo, 2009).

Paige (2003) declared "Those [students] who are unprepared will sit on the sidelines, dead-end jobs, and hopelessness. They will find little choice and much despair. The well- educated will live in a world of their own choosing; the poorly educated will wander in the shadows" (para. 39). Students will compete globally for future jobs; therefore, schools must combine 21st century skills and content to prepare students to compete (Johnson, 2009). The U.S. educational system must make drastic changes or future generations will be unable to compete in the 21st century (Darling-Hammond,

2011a; Kirsch et al., 2007). The true controversy lies within the debate of content versus skills, to provide meaningful, thought-provoking learning opportunities that would prepare students for the 21st century (Rotherham & Willingham, 2009).

According to the P21 website "To successfully face rigorous higher education coursework, career challenges and a globally competitive workforce, U.S. schools must align classroom environments with real world environments by fusing the three Rs and four Cs" (Partnership for 21st Century Skills, 2004c, para. 4). Critics such as Senechal (2010) acknowledged the need for change, "but we should never sacrifice our best judgment. That would be the worst form of complacency and change. If we jump on the 21st century skills bandwagon . . . just because others say we should, we give up critical thought" (Senechal, 2010, p. 10).

Educational leaders have transformed teacher preparation programs to focus more on using data to improve student achievement in a technological world (Andersen et al., 2008; Fallon, 2006), even though critics contest any recent improvement in teacher preparation, as they vehemently asserted that "new teachers appear to be ill-prepared to meet the challenges of today's classrooms" (Andersen et al., 2008, p. 225). Laughter et al. (2008) emphasized that for the past two centuries, the public has debated the "roles and responsibilities of the teacher, how and where teachers were prepared, . . . the role of liberal arts . . . in teacher preparation, and what research paradigms and questions were most capable of bringing about 'right' changes in teacher education" (p. 157), and the debate still continues today. The debates will continue, but whatever role teachers assume, children deserve to have the most-qualified teacher leading their educational journey (Darling-Hammond, 2009). Fallon (2006) contends that whatever the role of

teachers, university teacher preparation programs are perfect venues for improving future teacher quality.

Levine (2006) agreed with Darling-Hammond (2011a) and Fallon (2006) that educational leaders and policymakers must reform teacher preparation programs; however, he also noted that program reform is not the only means to improve America's educational system. Levine (2006) outlined five recommendations to improve teacher education: Schools of education should focus on teachers as practitioners and develop professional schools; use student achievement to determine program effectiveness; make teacher preparation five year programs that focus on pedagogical skills and knowledge; develop a framework to monitor teacher education quality; and close failing preparation programs while rewarding the most effective programs and recruiting top scholars to the profession through incentive programs.

Furthermore rather than setting goals with punitive consequences for schools and educators, educational leaders and policymakers must invest in improving preparation and continued professional development for teachers, for the sake of increasing student achievement (Darling-Hammond, 2011a). Educational leaders and policymakers should increase teacher salary to be competitive with other markets, entice teachers to seek employment and remain in high-needs schools by paying higher salaries (Darling-Hammond, 2011b; Levine, 2006), and determine teachers' salaries by performance and credentials (Levine, 2006). In conclusion, Darling-Hammond and Berry (2006) noted the significance of teacher preparation reform since "studies show that well-prepared and well-supported teachers are important for all students, but especially for students who come to school with greater needs" (p. 15). Educational leaders and policymakers must

reform the current educational system, so every classroom in the U.S. is led by an effective instructional expert (Ingersoll & Smith, 2003). Every child deserves to have an effective, knowledgeable teacher (Duncan, 2009).

Summary

Chapter 2 included the current literature related to 21st century skills and knowledge and teacher preparation program effectiveness. Chapter 3 will discuss the methodology utilized, including the research context, the population, and the sample selection sample. The 21st century skills framework that the researcher used to determine the teacher preparation programs' abilities to prepare graduates for the 21st century classroom and provide procedures for conducting the research data analysis will also be shared.

Chapter Three: Methodology

Description of the General Methodology

The researcher completed a quantitative content analysis to investigate the presence of 21st century knowledge and skills within a stratified random sample of NCATE accredited teacher preparation programs in the U.S.as measured by the 21st Century Learning Framework. The quantitative content analysis methodology allowed further collection of descriptive information on the research topic, to provide a possible insight on curricular changes (Fraenkel et al., 2009). This method required deductive reasoning to identify recurring themes throughout (Berg, 2001). "Content analysis can also be used to investigate possible relationships…" (Berg, 2001, p. 480) to test the hypotheses (Berg, 2001; Fraenkel et al., 2009) using the numerical data collected from the research (Berg, 2001). Quantitative content analysis also required the researcher to randomly select the sample to guarantee validity within the study. Therefore, the researcher could analyze and share the data collected by using statistical tests (Berg, 2001).

In respect to this study, the researcher defined "content analysis" as a technique used to study written documents, such as mission statements, course titles and descriptions, course objectives and course syllabi (Fraenkel et al., 2009) in the teacher preparation program to determine the presence of 21st century skills and knowledge. According to Colorado State University (2012a) a content analysis helps "determine the presence of certain words or concepts within texts or sets of text" and then make inferences using the data collected (para. 2). The researcher developed the format of the scoring guide by adapting the original, *Rubric for Ed.D. Program Integration of Global*

Competency developed by Leavitt and Kania-Gosche (2011). She read numerous studies related to 21st century skills and the knowledge teachers need to be effective in the 21st century classroom. The researcher found that all studies stated teachers are unprepared to teach in today's classroom since most novices do not possess the necessary skills (American Association of Colleges for Teacher Education, 2011; Duncan, 2009; Levine, 2006; National Comprehensive Center for Teacher Quality and Public Agenda, 2008). Even though there was a consensus among the current literature, researchers, such as Alger and Kopcha (2009), Senechal (2010), Partnership for 21st Century Skills (2009), and NCREL, NCRTEC, and the Metiri Group (2003) identified different skills and knowledge defined as 21st Century Skills; however, some researchers did not clarify exactly what they meant by 21st century skills (Sawchuk, 2009a). The researcher read extensively to obtain a clear definition of 21st century skills and based on the researcher's findings created a scoring device, which defined the necessary 21st century skills and knowledge a teacher preparation program should include: global awareness (Global Diversity Efforts, 2011; Johnson, 2009; Partnership for 21st Century Skills, 2004a), digital competencies (Alger & Kopcha, 2009; NCREL, NCRTEC, & The Metiri Group, 2003; Zhao, 2009), critical thinking competencies (Chorzempa, 2011; NCREL, NCRTEC, & The Metiri Group, 2003; Sawchuk, 2009a), collaborative competencies (Partnership for 21st Century Skills, 2004a), cross-cultural competencies (NHLBI, n.d.), communication competencies (Partnership for 21st Century Skills, 2004a), and problem solving competencies (Johnson, 2009; Murray et al., 2005; Partnership for 21st Century Skills, 2004a).

Researchers who use descriptive statistics typically utilize scales with a range of values (Colorado State University, 2012b). Once the researcher created the categories and descriptors for each competency, she assigned points, numerically ranging from two to eight based on evidence that supported the presence of that particular 21st century skill. Points were assigned accordingly: "little or no evidence of the competency" two points; "emerging evidence of the competency" four points; "implementation of competency" six points, and "full integration" eight points. A range, which represented the "distance" between the lowest and highest values (Fraenkel et al., 2009) of 2-8 as a way to draw a greater distinction among scores was used (Wisdom, 2011). Therefore, the elementary teacher preparation program with the highest total points reflected the programs that showed evidence of 21st century skills. The researcher consulted with several educational experts in the field from Lindenwood University: Leavitt, Hutcheson, and Emrick, while creating the scoring device; the experts provided suggestions for ways to strengthen the 21st Century Framework scoring device to increase reliability.

Hypotheses

Null hypothesis ($H_0$1): There is no evidence of 21st century knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Null hypothesis ($H_0$2): There is no evidence of global awareness knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Null hypothesis ($H_0$3): There is no evidence of digital competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Null hypothesis ($H_0$4): There is no evidence of critical thinking competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scale comparison to characteristics and standards represented in the 21st Century Learning Framework.

Null hypothesis ($H_0$5): There is no evidence of collaborative competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Null hypothesis ($H_0$6): There is no evidence of cross-cultural competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Null hypothesis ($H_0$7): There is no evidence of communication competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Null hypothesis ($H_0$8): There is no evidence of problem solving competencies within the knowledge and skills within elementary teacher education programs in the U.S. as

measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

Participants

Using the NCATE website list of accredited elementary teacher education programs, the researcher identified the population of elementary teacher education programs in the U.S. Currently NCATE has accredited 664 institutions, including programs in Guam and Puerto Rico. For this study, only institutions located only in the 50 states and the District of Columbia, were used, thus decreasing the population to 654 institutions (NCATE, 2010b). To eliminate the appearance of researcher bias, the researcher also excluded her alma mater, thus decreasing the population to 653 teacher preparation programs. For this study, the researcher selected a stratified random sampling method to preserve the likelihood that the sample represented the population (Fraenkel et al., 2009; Colorado State University, 2012b). The method was used to eliminate bias, as well as to increase the generalizability of the data (Colorado State University, 2012b).

The Instruments

Twenty-first Century Learning Skills within pre-service teacher preparation programs as defined included the following components: global awareness (Global Diversity Efforts, 2011; Johnson, 2009; Partnership for 21st Century Skills, 2004a), digital competencies (Alger & Kopcha, 2009; NCREL, NCRTEC, & The Metiri Group, 2003; Zhao, 2009), critical thinking competencies (Chorzempa, 2011; NCREL, NCRTEC, & The Metiri Group, 2003; Sawchuk, 2009a), collaborative competencies (Partnership for 21st Century Skills, 2004a), cross-cultural competencies (NHLBI, n.d.),

communication competencies (Partnership for 21st Century Skills, 2004a), and problem solving competencies (Johnson, 2009; Murray et al., 2005; Partnership for 21st Century Skills, 2004a).

Each 21st Century Learning Framework focused on one 21st century skill. The researcher included three categories to evaluate: mission statement; course title and descriptions; and course objectives and syllabi. The researcher then placed these categories horizontally and the degree to which the skill was present vertically. The researcher assigned point values, which correlated with the descriptors that noted the degree to which the competency was evident. The more the institution integrated the competency, the higher the score each institution earned. However, one must note that each framework's descriptors were unique depending on the competency definition. The researcher included all frameworks in the Appendix (Appendices A-G) with brief explanations.

Data Collection and Analysis Procedures

The researcher began collecting data on December 26, 2011 and ended June 10, 2012. From the population of 653 institutions, the researcher classified each institution into strata: public and private institutions by using Kuder Navigator and each individual institution's website. The researcher contacted institutions that did not provide the information on the institution's website or on the Kuder Navigator via telephone to determine if the institution was a public or private institution. Once the researcher classified all 653 schools as public or private, the researcher used an electronic randomizer to create the sample. The researcher then randomly selected 80 private teacher preparation programs and 80 public programs to decrease the population to a

"manageable size" (Colorado State University, 2012b, para. 23); a total of 160 schools would be included in the research sample. Once the sample was determined, the researcher created two sample forms: one private and one public (Appendices H & I). Each form included the list of institution names, web address, physical address, name of the School of Education Dean, and his/her email address. The researcher then coded each university using a letter/number system, for example PI1 (private university, 1); PB (public university 2). Once the researcher coded each institution, the researcher added the coded information to the sample form. The researcher completed the sample form by retrieving the necessary information from each institution's website. When the researcher could not locate this information on the institution's website, she contacted the institution via email or telephone.

Once the sample forms were completed, the researcher then contacted every participant Dean of the School of Education or department chair via email or physical mail, requesting program information. The letter of request (Appendix J), included identification information, the purpose for the research, an explanation of the research, a basic overview of the methodology, the information requested, and multiple means to contact the researcher.

Once all letters of request were sent to the institution deans or department chairs, the researcher created a sample response form to record whether institutional deans or department chairs agreed or declined to provide the requested information. The Institution Sample Response Form (Appendices K & L) included the institution code, name, and location to record acceptance or declination of request. As the deans or department chairs responded, the researcher completed the form.

Information related to the required skills and knowledge graduates must possess from each teacher preparation program was collected by accessing the materials through the following formats: program websites, public materials found within libraries, and materials received through email and mail directly from the university and faculty who teach in the education pre-service programs. Each School of Education's mission statement and the School of Education's goals was reviewed. The researcher then proceeded to examine the program descriptions, required course titles and descriptions, followed by the program catalogs, course objectives, and syllabi. She then evaluated each initial elementary teacher education program using the 21st Century Skills Framework (Appendices A-G)., search for key words or identifiers while examining the course documents for evidence of 21st Century Competencies (see Table 1).

Table 1

21st Century Competency Identifiers

21st Century Competency	Identifiers
Global Awareness	Knowledge of global and cultural perspectives; environmental, social, cultural, political, and economic relations
Digital	Knowledge, skills, attitudes, and ability to live in digital or virtual world
Critical Thinking	Ability to use inductive and deductive reasoning; recognize, interpret, and analyze beliefs, claims, arguments, and evidence; evaluate and synthesize information
Collaboration	Ability to work respectfully with diverse teams; flexibility and willingness to make compromises; assume shared responsibility; value individual contributions to group
Cross-Cultural	Understanding diverse attitudes, beliefs, behaviors, practices, and communication; race; religion, socio-economic status; physical and mental age, gender, physical and mental ability; generational and acculturation status
Communication	Ability to articulate thoughts and ideas; oral; written; nonverbal communication; listening; communicating for variety of purposes
Problem Solving	Ability to exercise goal-directed thinking and action to solve problem when no solution is available; understanding of the problem; creating a step-by-step process to solve the problem

Note. 21st Century skills and knowledge were identified based on a review of current literature.

Once the researcher evaluated each program, she recorded the results of the evaluation on the Institution Score Sheet. The Institution Score Sheet (Appendix M) included the institution name and code, as well as areas to record scores for each competency.

While the researcher evaluated the sample, 80 public and 80 private institutions, she noted that one public institution and four private institutions did not supply program information necessary to evaluate the program. Therefore, they could not be included in the data collection and the research sample consisted of 79 public institutions and 76 private institutions.

Upon data collection completion, the researcher used Excel to record each individual institution's score sheet results. The researcher recorded and grouped each institution's competency scores in all areas evaluated: global competencies, digital competencies, critical thinking competencies, collaborative competencies, cross-cultural competencies, communication competencies, and problem solving competencies.

From the stratified sample, the researcher randomly selected 45 public and 45 private institutions to test the hypotheses as a means to increase the generalizability of the conclusions to the whole population from which the researcher selected teacher preparation programs and to reduce the inclusion of anomalies in the data. The researcher recorded all quantitative data and analyzed it to determine the extent to which each institution's teacher preparation program provided evidence of 21st century skills and knowledge.

For null hypothesis numbers two through eight, the researcher determined how closely the institution's materials corresponded to the quantified 21st century framework. The researcher then calculated the variance and tested the hypotheses using a z-test for a difference in proportion from the comparison point of 80% for both private and public institutions. The researcher utilized a z-test for difference in proportion since the samples were "independent of each other," meaning a relationship did not exist between the

sample participants (Bluman, 2010 p. 469). The researcher synthesized the data into proportions to determine whether each group met the minimum percentage of 80 since many states required an 80% minimum licensure examination completion, which the researcher derived from a personal communication with Dr. Yi Huang, NCATE accreditation Vice President (Huang, 2011). For null hypothesis number one, the researcher utilized a z-test for difference in means between the ratings of the public teacher preparation program's sample and the private teacher preparation program's sample. The researcher utilized a z-test since the samples were "independent of each other," meaning a relationship did not exist between the sample participants: public and private institutions and the researcher determined the standard deviations for both samples (Bluman, 2010, p. 469). The researcher then determined if there was a difference between public and private teacher preparation programs' evidence of 21st century knowledge and skills in the teacher preparation programs.

Summary

The researcher completed a quantitative content analysis to investigate the presence of 21st century knowledge and skills within a stratified random sample of NCATE accredited teacher preparation programs in the U.S.as measured by the 21st Century Learning Framework. In addition, the study was conducted to determine if a possible difference between public and private elementary teacher education programs in the U.S. as measured by a comparison to characteristics and standards represented in the 21st Century Learning Framework. A quantitative content analysis was used which allowed the researcher to collect descriptive information on the research topic that will be discussed in Chapter 4.

Chapter Four: Results

The researcher conducted a quantitative content analysis to investigate the presence of 21st century knowledge and skills within a stratified random sample of teacher preparation programs in the U.S. as measured by the 21st Century Learning Framework. The purpose of this study was to add to the current body of knowledge related to U. S. teacher preparation programs' and evidence of 21st Century Skills and Knowledge.

The researcher determined the variance for the composite scores, as well as each individual competency; she then used a two-tailed z-test for the difference of means to test the null hypotheses. The critical values for a 95% confidence level were + 1.96 and -1.96. The identified the level of significance was .05.

Hypotheses

Null hypothesis ($H_0 1$): There is no evidence of 21st century knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

A z-test for difference in means was applied to data. The z-test value of 1.572 did not land in the critical region marked by +1.96. The p-value was 0.1159, with alpha=.05 (see Table 2). Therefore, the researcher did not reject the null hypothesis. Since the researcher did not reject the null hypothesis, data did not support the alternate hypothesis.

Table 2

Z-Test for Comparison of 21st Century Knowledge and Skills within Elementary Teacher Education Programs in Private and Public Institutions

	Private	*Public*
Mean	3.041269841	2.864656085
Known Variance	0.2139	0.3538
Observations	45	45
Hypothesized Mean Difference	0	
Z	1.572430061	
P(Z<=z) two-tail	0.115850847	
z Critical two-tail	1.959963985	

Null hypothesis ($H_0$2): There is no evidence of global awareness knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

A z-test for difference in proportion was applied to data. The z-test value of .498 did not land in the critical region marked by +1.96. The p-value was .618, with alpha=.05 (see Table 3). Therefore, the researcher did not reject the null hypothesis. Since the researcher did not reject the null hypothesis, data did not support the alternate hypothesis.

Table 3

Z-Test for Evidence of Global Awareness Knowledge and Skills within Elementary Teacher Education Programs in Private and Public Institutions

	Private	*Public*
Mean	2.533333333	2.607407407
Known Variance	0.436	0.557
Observations	45	45
Hypothesized Mean Difference	0	
Z	0.498652343	
P(Z<=z) two-tail	0.618024323	
z Critical two-tail	1.959963985	

Null hypothesis ($H_0$3): There is no evidence of digital competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

A z-test for difference in proportions was applied to data. The z-test value of -2.027 lands within the critical region marked by -1.96. The p-value was .0426, with alpha=.05 (see Table 4). Therefore, the researcher rejected the null hypothesis. Since the researcher rejected the null hypothesis, data supports the alternate hypothesis. Public elementary teacher preparation programs scored statistically higher with a mean of 3.303 than private programs, which scored 2.977.

Table 4

Z-Test for Evidence of Digital Competencies within Knowledge and Skills within Elementary Teacher Education Programs in Private and Public Institutions

	Private	*Public*
Mean	2.977778	3.303703704
Known Variance	0.61313	0.549607
Observations	45	45
Hypothesized Mean Difference	0	
Z	-2.02761	
P(Z<=z) two-tail	0.0426	
z Critical two-tail	1.959964	

Null hypothesis ($H_0$4): There is no evidence of critical thinking competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scale comparison to characteristics and standards represented in the 21st Century Learning Framework.

A z-test for difference in proportions was applied to data. The z-test value of 3.45 lands within the critical region marked by +1.96. The p-value was .00056, with alpha=.05 (see Table 5). Therefore, the researcher rejected the null hypothesis. Since the researcher rejected the null hypothesis, data supports the alternate hypothesis. Private elementary teacher preparation programs scored statistically higher with a mean of 3.511 than public programs, which scored 2.688.

Table 5

Z-Test for Evidence of Critical Thinking Competencies within Knowledge and Skills within Elementary Teacher Education Programs in Private and Public Institutions

	Private	*Public*
Mean	3.511111	2.688888889
Known Variance	1.52828	1.0272
Observations	45	45
Hypothesized Mean Difference	0	
Z	3.450319	
P(Z<=z) two-tail	0.00056	
z Critical two-tail	1.959964	

Null hypothesis ($H_0$5): There is no evidence of collaborative competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

A z-test for difference in proportions was applied to data. The z-test value of 1.333 did not land within the critical region marked by +1.96. The p-value was .1823, with alpha=.05 (see Table 6). Therefore, the researcher did not reject the null hypothesis. Since the researcher did not reject the null hypothesis, data did not support the alternate hypothesis.

Table 6

Z-Test for Evidence of Collaborative Competencies within Knowledge and Skills within Elementary Teacher Education Programs in Private and Public Institutions

	Private	*Public*
Mean	2.777778	2.577777778
Known Variance	0.40404	0.60808
Observations	45	45
Hypothesized Mean Difference	0	
Z	1.333584	
P(Z<=z) two-tail	0.18234	
z Critical two-tail	1.959964	

Null hypothesis ($H_0$6): There is no evidence of cross-cultural competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

A z-test for difference in proportions was applied to data. The z-test value of 1.038 did not land within the critical region marked by +1.96. The p-value was .298, with alpha=.05 (see Table 7). Therefore, the researcher did not reject the null hypothesis. Since the researcher did not reject the null hypothesis, data did not support the alternate hypothesis.

Table 7

Z-Test for Evidence of Cross-Cultural Competencies within Knowledge and Skills within Elementary Teacher Education Programs in Private and Public Institutions

	Private	*Public*
Mean	3.688889	3.511111111
Known Variance	0.62828	0.68989
Observations	45	45
Hypothesized Mean Difference	0	
Z	1.038719	
P(Z<=z) two-tail	0.298936	
z Critical two-tail	1.959964	

Null hypothesis ($H_0$7): There is no evidence of communication competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

A z-test for difference in proportion was applied to data. The z-test value of 1.438 did not land within the critical region marked by +1.96. The p-value was .150, with alpha=.05 (see Table 8). Therefore, the researcher did not reject the null hypothesis. Since the researcher did not reject the null hypothesis, data did not support the alternate hypothesis.

Table 8

Z-Test for Evidence of Communication Competencies within Knowledge and Skills within Elementary Teacher Education Programs in Private and Public Institutions

	Private	*Public*
Mean	3.377778	3.059259259
Known Variance	0.83131	1.37519
Observations	45	45
Hypothesized Mean Difference	0	
Z	1.438431	
P(Z<=z) two-tail	0.150312	
z Critical two-tail	1.959964	

Null hypothesis ($H_0$8): There is no evidence of problem solving competencies within the knowledge and skills within elementary teacher education programs in the U.S. as measured by a numerically-scaled comparison to characteristics and standards represented in the 21st Century Learning Framework.

A z-test for difference in proportion was applied to data. The z-test value of .7237 did not land within the critical region marked by +1.96. The p-value was .4692, with alpha=.05 (see Table 9). Therefore, the researcher did not reject the null hypothesis. Since the researcher did not reject the null hypothesis, data did not support the alternate hypothesis.

Table 9

Z-Test for Evidence of Problem Solving Competencies within Knowledge and Skills within Elementary Teacher Education Programs in Private and Public Institutions

	Private	*Public*
Mean	2.422222	2.333333333
Known Variance	0.3404	0.33838
Observations	45	45
Hypothesized Mean Difference	0	
Z	0.723751	
P(Z<=z) two-tail	0.469219	
z Critical two-tail	1.959964	

The data supported the null hypotheses, noting no difference in 21st century knowledge and skills in all competencies, except digital competency and critical thinking competency. Public institutions statistically scored higher on digital literacy skills while private institutions scored higher on critical thinking skills. In Chapter 5 the researcher will further discuss the research results and implications of those results, as well as suggest recommendations for further study.

The researcher did not reject the null hypotheses concerning evidence of 21st century knowledge and skills ($H_0$1); global awareness ($H_0$2); collaborative competencies ($H_0$5); cross-cultural competencies ($H_0$6); communication competencies ($H_0$7); and problem-solving ($H_0$8). However, the researcher rejected the null hypotheses concerning digital competencies ($H_0$3) and critical thinking ($H_0$4).

Chapter Five: Discussion and Reflection

The purpose of this study was to determine if there was evidence of 21st century knowledge and skills within a random sample of teacher preparation programs located in the U.S. In addition, the researcher analyzed the data to determine if a statistical difference existed between public and private institutions' evidence of 21st century knowledge and skills. The results of the analysis supported the alternate hypothesis, noting a lack of evidence of 21st century knowledge and skills within the sample of teacher preparation programs. The analysis also supported the alternate hypotheses; there was evidence of digital literacy and critical thinking competencies in teacher preparation programs. The research did not support the alternate hypotheses relating to global awareness, collaborative competencies, cross-cultural competencies, communication competencies, and problem-solving competencies, thus proving the knowledge and skills were not evident in teacher preparation programs.

Implications

Institutional and program leaders of teacher preparation program can use the results of this study to examine the current coursework and assignments and determine whether their programs are adequately focused on 21st century knowledge and skills. The data results could also lead to changes in instructional practices and required coursework within teacher preparation programs. Current and future teachers could also use the results in university selection when considering to what extent the universities in which they are applying showed evidence of 21st century knowledge and skills. Graduates of teacher preparation programs should seek professional development opportunities to further develop this knowledge and skills, and students of the 21st

century classroom must to further develop the 21st century knowledge and skills to be competitive in the global economy. If drastic changes are not made to improve teacher preparation programs, America's youth will not have the necessary knowledge and skills to compete, which would negatively affect the U.S. economy and quality of life.

Recommendations

In agreement with Darling-Hammond and Berry (2006), the researcher supported the creation of national certification and the need for the federal government to create a consistent system for granting teacher licensure rather than allowing each state to determine requirements (Darling-Hammond & Berry, 2006). The researcher observed the wide range of quality and program requirements in teacher preparation programs throughout the U.S. Moreover, every university has different teacher preparation program requirements, and every state has different licensure requirements, thus creating a wide range of programs with varying degrees of effectiveness (Darling-Hammond, 2011b). No matter the federal or state requirements, the researcher strongly asserted that every child in America deserves to have a well-prepared effective teacher leading the educational journey, but if teachers graduate from programs that ill-equip them with the necessary knowledge and skills for success, the children in their classrooms pay the price. All children need to have 21st century knowledge and skills to compete in the global economy (November, 2010). Therefore, teachers must possess the 21st century knowledge and skills in order to help their students learn and further develop those skills (Darling-Hammond, 2005; Darling-Hammond, 2011a). It is the researcher's belief that both the state and federal governments must hold higher education institutions accountable for creating teachers that are prepared in the 21st century classroom.

Institutions of higher education must financially reinvest in their teacher preparation programs (Duncan, 2009; Levine, 2006). All too often teacher preparation programs provide mass profits to the institution, yet school officials allocate little of the profits to reinvest in improving the teacher preparation program within the organization (Duncan, 2009). Higher education institutions must further examine their teacher preparation programs and determine their effectiveness (Andersen et al., 2008; Cibulka, 2008; Fallon, 2006; Levine, 2006). If specific areas of coursework are missing or lacking 21st century knowledge and skills, educational leaders must make the changes immediately; after all, teacher quality and student achievement are being affected while waiting (Levine, 2006). In addition, universities and colleges must fund more research relating to teacher preparation programs and graduates' success as measured by the graduate students' achievement (Cibulka, 2009; Duncan, 2009; Levine, 2006) and raise the minimum standards for admittance (Levine, 2006; U.S. Department of Education, 2002) while at the same time recruit top scholars into the education profession (Heitin, 2010; National Center on Education and the Economy, 2007). Many of the researchers' top students would not consider entering the education profession because of the poor compensation in comparison to other professions that require an equal or less amount of schooling and the lack of respect within the public for the teaching profession (Darling-Hammond, 2011a; Darling-Hammond, 2011b; Hanushek & Rivkin, 2007; Levine, 2006; National Center on Education and the Economy, 2007; Peter D. Hart and Associates, Inc., 2008; U.S. Department of Education, 2002; Walker, 2012). Children deserve to have a well-educated teacher who not only has pedagogical knowledge, but also subject matter knowledge (Cibulka, 2008); furthermore, the researcher believed changes must be made,

so America's next generation of students will be taught by not only the brightest, but also the most respected and highly compensated teachers.

Future Studies

If other researchers desire to replicate this study, the researcher recommended they include both accredited and non-accredited elementary teacher preparation programs to see if a difference exists between the two, as well to determine the presence of the 21st century knowledge and skills in accredited and non-accredited programs. One may also want to examine the presence of 21st century knowledge and skills in secondary preparation programs, though it may be difficult since there are many avenues for retaining secondary licensure certification. Some teachers earn a degree in the subject area and take additional pedagogy coursework. Other researchers may also want to examine alternative teacher licensure programs, such as Teach For America for the presence of 21st century knowledge and skills within their preparation programs.

There was an obvious lack of program leaders who were willing to participate in the study; however, the researcher believed university program leaders would be more willing to share information with colleagues in the profession affiliated with other programs, rather than doctoral students. Therefore, professors in the field of education may attain additional information that the researcher did not have access to for the study. Deans within the researched population acknowledged the need for further research on teacher preparation programs, but cited a lack of human resource support due to financial cuts in federal and state funding available to send the requested documentation (Personal communication, February 19, 2011; Personal communication, February 22, 2012).

The researcher acknowledged that programs could possibly include more 21st knowledge and skills than were recognized in the research due to multiple factors: the quality of program websites, the ease of locating the information within the programs' websites, and the quality of the syllabi. All factors varied greatly among institutions relating to collecting evidence of 21st century knowledge and skills. A large majority of the required coursework related to methods courses in the core subject areas, as well as method courses relating to student assessments.

Conclusion

Critics of the educational system have scrutinized the educational system for decades, but these study results prove they have valid concern. The results of this study revealed that teacher preparation programs are inadequately preparing graduates for the 21st century classroom, thus supporting previous research (American Association of Colleges for Teacher Education, 2011; Duncan, 2009; National Comprehensive Center for Teacher Quality and Public Agenda, 2008). The purpose of this study was to determine if there was evidence of 21st century knowledge and skills within a random sample of NCATE accredited teacher preparation programs located in the U.S. The results of the study noted a lack of evidence of 21st century knowledge and skills within the sample of teacher preparation programs relating to global awareness, collaborative competencies, cross-cultural competencies, communication competencies, and problem-solving competencies, thus proving the knowledge and skills were not evident in teacher preparation programs. On the contrary, there was evidence of digital literacy and critical thinking competencies in teacher preparation programs. The data represented no difference between public institutions and private institutions in 21st century knowledge

and skills in all competencies, except digital competency and critical thinking competency. Public institutions statistically scored higher on digital literacy skills while private institutions scored higher on critical thinking skills. It is the researcher's belief that policymakers and educational leaders must make changes to improve preparation programs. Students deserve to have the most effective instructional practitioners; moreover, teacher quality is one of the most important indicators of student achievement. Moreover the U.S. must have an educated population that possesses 21st century knowledge and skills to compete globally. Americans' quality of life and the U.S. economy is at risk. The risks are too costly not to act.

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Appendix A

Global Awareness Framework

Overall Category	Mission Statement	Course Titles and Descriptions	Course Objectives and Syllabi
Little or No Global Awareness Addressed (2 points)	Global Awareness not mentioned in mission statement	Global Awareness not mentioned in course titles and/or descriptions	Global Awareness not mentioned in course objectives and/or syllabi
Emerging Global Awareness (4 points)	Global Awareness mentioned in mission statement focused on only one, two, or three characteristics.	Global Awareness mentioned in course titles and/or descriptions but focused on only one, two, or three characteristics.	Global Awareness mentioned in course objectives and/or syllabi but focused on only one, two, or three characteristics.
Implementation of Global Awareness (6 points)	Global Awareness mentioned in mission statement, focused on four or five characteristics.	Global Awareness mentioned in course titles and/or descriptions but focused on four or five characteristics.	Global Awareness mentioned in course objectives and/or syllabi but focused on four or five characteristics.
Full Integration of Global Awareness (8 points)	Global Awareness mentioned, focused on all six characteristics	Global Awareness mentioned within course titles and/or descriptions and focused on all six characteristics.	Global Awareness embedded throughout 75% or more of the required coursework

Adapted from *Draft Rubric for Ed.D. Program Integration of Global Competency by* Dr. Lynda Leavitt and Dr. Beth Kania-Gosche.

Appendix A focused on the presence of Global Awareness as defined previously. Using the framework, the researcher evaluated each participant to determine the degree to which Global Awareness was embedded in the institution's teacher preparation program.

Appendix B

Digital Competencies Framework

Overall Category	Mission Statement	Course Titles and Descriptions	Course Objectives and Syllabi
Little or No Digital Competencies Addressed (2 points)	Digital competencies not mentioned in mission statement	Digital competencies not mentioned in course titles and/or descriptions	Digital competencies not mentioned in course objectives and/or syllabi
Emerging Digital Competencies Awareness (4 points)	Digital competencies mentioned in mission statement but focused on one characteristic.	Digital competencies mentioned in course titles and/or descriptions but focused on one characteristic	Digital competencies mentioned in course objectives and/or syllabi but focused on only one characteristic
Implementation of Digital Competencies (6 points)	Digital competencies mentioned in mission statement, focused on two or three characteristics	Digital competencies mentioned in course titles and/or descriptions but focused on two or three characteristics	Digital competencies mentioned in course objectives and/or syllabi but focused on two or three characteristics
Full Integration of Digital Competencies (8 points)	All characteristics of digital competencies at all mentioned throughout mission statement	All characteristics of digital competencies mentioned within course titles and/or descriptions	Digital competencies infused throughout 75% or more of the coursework

Adapted from *Draft Rubric for Ed.D. Program Integration of Global Competency by* Dr. Lynda Leavitt and Dr. Beth Kania-Gosche.

Using the framework noted in Appendix B, Digital Competencies, the researcher evaluated each selected university materials to determine the degree to which Digital Competencies were embedded in the institution's teacher preparation program.

Appendix C

Critical Thinking Competencies Framework

Overall Category	Mission Statement	Course Titles and Descriptions	Course Objectives and Syllabi
Little or No Critical Thinking Competencies Addressed (2 points)	Critical Thinking Competencies not mentioned in mission statement	Critical Thinking Competencies not mentioned in course titles and/or descriptions	Critical Thinking Competencies not mentioned in course objectives and/or syllabi
Emerging Critical Thinking Competencies Awareness (4 points)	Critical Thinking Competencies mentioned in mission statement but focused on one characteristic	Critical Thinking Competencies mentioned in course titles and/or descriptions but focused on one characteristics	Critical Thinking Competencies mentioned in course objectives and/or syllabi but focused on one characteristic
Implementation of Critical Thinking Competencies (6 points)	Critical Thinking Competencies mentioned in mission statement, focused on two or three characteristics	Critical Thinking Competencies mentioned in course titles and/or descriptions but focused on two or three characteristics	Critical Thinking Competencies mentioned in course objectives and/or syllabi but focused on two or three characteristics
Full Integration of Critical Thinking Competencies (8 points)	All characteristics of Critical Thinking Competencies mentioned throughout mission statement	All characteristics of Critical Thinking Competencies mentioned within course titles and/or descriptions	All characteristics of Critical Thinking Competencies infused throughout 75% or more of the coursework

Adapted from *Draft Rubric for Ed.D. Program Integration of Global Competency by*

Dr. Lynda Leavitt and Dr. Beth Kania-Gosche.

Appendix C focused on the presence of Critical Thinking Competencies. Using the framework, the researcher evaluated each selected university to determine the degree to which Critical Thinking Competencies were embedded in the institution's teacher preparation program.

Appendix D

Collaborative Competencies Framework

Overall Category	Mission Statement	Course Titles and Descriptions	Course Objectives and Syllabi
Little or No Critical Collaborative Competencies Addressed (2 points)	Collaborative Competencies not mentioned in mission statement	Collaborative Competencies not mentioned in course titles and/or descriptions	Collaborative Competencies not mentioned in course objectives and/or syllabi
Emerging Collaborative Competencies Awareness (4 points)	Collaborative Competencies mentioned in mission statement but focused on one or two characteristics	Collaborative Competencies mentioned in course titles and/or descriptions but focused on one or two characteristics	Collaborative Competencies mentioned in course objectives and/or syllabi but focused on one or two characteristics
Implementation of Collaborative Competencies (6 points)	Collaborative Competencies mentioned in mission statement, focused on three or four characteristics	Collaborative Competencies mentioned in course titles and/or descriptions but focused on three or four characteristics	Collaborative Competencies mentioned in course objectives and/or syllabi but focused on three or four characteristics
Full Integration of Collaborative Competencies (8 points)	All characteristics of Collaborative Competencies mentioned throughout mission statement	All characteristics of Collaborative Competencies within course titles and/or descriptions	All characteristics of Collaborative Competencies infused throughout 75% or more of the coursework

Adapted from *Draft Rubric for Ed.D. Program Integration of Global Competency by*

Dr. Lynda Leavitt and Dr. Beth Kania-Gosche.

Appendix D focuses on the presence of Collaborative Competencies as defined previously. Using the framework, the researcher evaluated each participant to determine the degree to which Collaborative Competencies were embedded in the institution's teacher preparation program.

Appendix E

Cross-Cultural Competencies Framework

Overall Category	Mission Statement	Course Titles and Descriptions	Course Objectives and Syllabi
Little or No Cross-Cultural Competencies Addressed (2 points)	Cross-Cultural Competencies not mentioned in mission statement	Cross-Cultural Competencies not mentioned in course titles and/or descriptions	Cross-Cultural Competencies not mentioned in course objectives and/or syllabi
Emerging Cross-Cultural Competencies Awareness (4 points)	Cross-Cultural Competencies mentioned in mission statement but focused on one or two characteristics	Cross-Cultural Competencies mentioned in course titles and/or descriptions focused on one or two characteristics	Cross-Cultural Competencies mentioned in course objectives and/or syllabi but focused on one or two characteristics
Implementation of Cross-Cultural Competencies (6 points)	Cross-Cultural Competencies mentioned in mission statement, focused on three or four characteristics	Cross-Cultural Competencies mentioned in course titles and/or descriptions but focused on three or four characteristics	Cross-Cultural Competencies mentioned in course objectives and/or syllabi but focused on three or four characteristics
Full Integration of Cross-Cultural Competencies (8 points)	All characteristics of Cross-Cultural Competencies mentioned throughout mission statement	All characteristics of Cross-Cultural Competencies within course titles and/or descriptions	All characteristics of Cross-Cultural Competencies infused throughout 75% or more of the coursework

Adapted from *Draft Rubric for Ed.D. Program Integration of Global Competency by* Dr. Lynda Leavitt and Dr. Beth Kania-Gosche.

Appendix E focuses on the presence of Cross-Cultural Competencies as defined previously. Using the framework, the researcher evaluated each participant to determine the degree to which Cross-Cultural Competencies were embedded in the institution's teacher preparation program.

Appendix F

Communication Competencies Framework

Overall Category	Mission Statement	Course Titles and Descriptions	Course Objectives and Syllabi
Little or No Communication Competencies Addressed (2 points)	Communication Competencies not mentioned in mission statement	Communication Competencies not mentioned in course titles and/or descriptions	Communication Competencies not mentioned in course objectives and/or syllabi
Emerging Communication Competencies Awareness (4 points)	Communication Competencies mentioned in mission statement but focused on one or two characteristics	Communication Competencies mentioned in course titles and/or descriptions but focused on one or two characteristics	Communication Competencies mentioned in course objectives and/or syllabi but focused on one or two characteristics
Implementation of Communication Competencies (6 points)	Communication Competencies mentioned in mission statement, focused on three or four characteristics	Communication Competencies mentioned in course titles and/or descriptions but focused on three or four characteristics	Communication Competencies mentioned in course objectives and/or syllabi but focused on three or four characteristics
Full Integration of Communication Competencies (8 points)	All characteristics of Communication Competencies mentioned throughout mission statement	All characteristics of Communication Competencies within course titles and/or descriptions	All characteristics of Communication Competencies infused throughout 75% or more of the coursework

Adapted from *Draft Rubric for Ed.D. Program Integration of Global Competency by* Dr. Lynda Leavitt and Dr. Beth Kania-Gosche.

Appendix F focuses on the presence of Communication Competencies as defined previously. Using the framework, the researcher evaluated each participant to determine the degree to which Communication Competencies were embedded in the institution's teacher preparation program.

Appendix G

Problem-Solving Competencies Framework

Overall Category	Mission Statement	Course Titles and Descriptions	Course Objectives and Syllabi
Little or No Problem-Solving Competencies Addressed (2 points)	Problem-Solving Competencies not mentioned in mission statement	Problem-Solving Competencies not mentioned in course titles and/or descriptions	Problem-Solving Competencies not mentioned in course objectives and/or syllabi
Emerging Problem-Solving Competencies Awareness (4 points)	Problem-Solving Competencies mentioned in mission statement but focused one characteristic	Problem-Solving Competencies mentioned in course titles and/or descriptions but focused on one characteristic.	Problem-Solving Competencies mentioned in course objectives and/or syllabi but focused on one characteristic.
Implementation of Problem-Solving Competencies (6 points)	Problem-Solving Competencies mentioned in mission statement, focused on two characteristics	Problem-Solving Competencies mentioned in course titles and/or descriptions but focused on two characteristics	Problem-Solving Competencies mentioned in course objectives and/or syllabi but focused on two characteristics
Full Integration of Problem-Solving Competencies (8 points)	All characteristics of Problem-Solving Competencies mentioned throughout mission statement	All characteristics of Problem-Solving Competencies within course titles and/or descriptions	All characteristics of Problem-Solving Competencies infused throughout 75% or more of the coursework

Adapted from *Draft Rubric for Ed.D. Program Integration of Global Competency by* Dr. Lynda Leavitt and Dr. Beth Kania-Gosche.

Appendix G focuses on the presence of Problem-Solving Competencies as defined previously. Using the framework, the researcher evaluated each participant to determine the degree to which Problem-Solving Competencies were embedded in the institution's teacher preparation program.

Appendix H

Private Institution Sample Form

Code	Private School	School Address	Dean of School of Ed.	Dean's email
PRI 2				
PRI 3				
PRI 5				
PRI 6				
PRI 10				
PRI 13				
PRI 14				

Appendix I

Public Institution Sample Form

Code	Public School	School Address	Dean of School of Ed.	Dean's email
PUB 3				
PUB 9				
PUB 10				
PUB 14				
PUB 15				
PUB 16				
PUB 17				

Appendix J

Letter of Request

Below is the letter of request the researcher sent to each dean of school of education or department head requesting information for the study.

Mary M. Ruettgers

4737 State Route 159

Smithton, IL 62285

618-473-2556 or 618-593-1775

MMR544@lionmail.lindenwood.edu

December 3, 2011

Doctor [Name]

Dean of Education School of Education

Address

Address

Dear Dr. [Name]:

I am currently an educational doctoral student at Lindenwood University, located in St. Charles, Missouri, conducting an investigation of teacher preparation programs in the United States from a quantitative perspective. This study intends to measure the degree to which 21st Century skills are embedded within teacher preparation programs using a 21st Century Learning Framework. The purpose of this study is to add to the current body of

knowledge related to U. S. teacher preparation programs' and evidence of 21st Century Skills and Knowledge.

I will collect information related to the required skills and knowledge graduates must possess from each teacher preparation program using the school's mission statement, the School of Education's goals and vision statements, program descriptions, course objectives and descriptions and course syllabi. I will then evaluate each initial teacher preparation program using the 21st Century Learning Framework, a quantifiable scoring device created by the researcher based on the current research and evaluated by experts in the field of education and 21st Century skills. Once I evaluate all programs of the 160-school sample, I will code the results to maintain program confidentiality.

If you are willing to email or mail supporting documents, I would be appreciative. If you would like, I am happy to mail a self-addressed stamped envelope for you to mail supporting documents.

Thank you for your time and consideration. Please feel free to contact me at 618-473-2556; 618-593-1775, or MMR544@lionmail.lindenwood.edu.

Sincerely,

Mary Ruettgers

Appendix K

Private Institution Sample Response Form

Code	Private School	Accepted/Declined Request
PRI 2		
PRI 3		
PRI 5		
PRI 6		
PRI 10		

Appendix L

Public Institution Sample Response Form

Code	Public School	Accepted/Declined Request
PUB 3		
PUB 9		
PUB 10		
PUB 14		
PUB 15		

Appendix M

Institution Score Sheet

_____

Name of Institution

Code for Institution

Competencies:	**Scores:**	**Mission**	**Title/Desc.**	**Obj/Syllabi**
Global Awareness		_____	_____	_____
Digital Competencies		_____	_____	_____
Critical Thinking Competencies		_____	_____	_____
Collaborative Competencies		_____	_____	_____
Cross-Cultural Competencies		_____	_____	_____
Communication Competencies		_____	_____	_____
Problem Solving Competencies		_____	_____	_____

Vitae

Mary Ruettgers was born and raised in Smithton, Illinois. She graduated from Freeburg Community High School in Freeburg, Illinois in 2000. She later earned an Associate of Science degree and an Associate of Art degree from Southwestern Illinois College in 2002. Mrs. Ruettgers later attended McKendree University where she graduated with a Bachelors of Science in elementary education with a middle school endorsement in Language Arts in 2003. Upon graduation, Mrs. Ruettgers taught junior high and high school English courses. While teaching, she earned a Master of Arts in Educational Administration from Lindenwood University in 2007. She then attended University of Missouri, St. Louis where she participated in the Gateway Writing Project while earning a Master of Arts in English in 2010. Mrs. Ruettgers currently teaches English courses at Valmeyer High School in Valmeyer, Illinois, as well as English early college start courses through Lindenwood University. She resides in Smithton, Illinois, with her husband, Nicholas, and English bulldog, Jasper. Mrs. Ruettgers plans to graduate from Lindenwood University with a doctorate in Educational Leadership in February of 2013.