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Using Online Education to Transition Teaching Assistants to Teacher Certification: Examining the Differences Among Teacher Education Programs

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The University of Southern Mississippi
USING ONLINE EDUCATION TO TRANSITION TEACHING
ASSISTANTS TO TEACHER CERTIFICATION: EXAMINING THE
DIFFERENCES AMONG TEACHER EDUCATION PROGRAMS

by

Billie Jean Tingle

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

May 2014

ABSTRACT

USING ONLINE EDUCATION TO TRANSITION TEACHING ASSISTANTS TO TEACHER CERTIFICATION: EXAMINING THE DIFFERENCES AMONG TEACHER EDUCATION PROGRAMS

by Billie Jean Tingle

May 2014

The purpose of this study was to compare The University of Southern Mississippi elementary education teacher candidates that completed the online or traditional route to determine if there was a significant difference in professional knowledge and skills using Praxis II test scores. The participants included 60 Teacher Assistant Program (TAP) online teacher candidates and 564 traditional face-to-face teacher candidates. This study also compared the two groups' perceptions of self-efficacy. The instrument used in this part of the research study was the Teacher Education Preparation Program Exit Survey (Appendix A). A selection of the participants that completed their teacher internship during the fall 2013, participated in the self-efficacy survey. Participants for the survey included nine TAP and 76 traditional teacher candidates.

The overall findings of this research study show that while there was a significant difference in teacher candidates' professional knowledge based on their Praxis II test scores, there was no significant difference in perceptions of self-efficacy. Although both groups felt confident in their abilities to teach, the traditional teacher candidates outperformed TAP on the Praxis II. However, in the ancillary findings of this study, more traditional teacher candidates, or 41.6%, were admitted to the teacher education program

with a Praxis I exemption, based upon their 21 or higher ACT score, while only 23.4% of TAP were exempt from the requirement based on their ACT scores. These findings suggest that traditional teacher candidates entered the program at a more advanced level than the TAP teacher candidates.

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The University of Southern Mississippi

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Billie Jean Tingle

A Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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May 2014

DEDICATION

I dedicate this dissertation to my sons, Cole and Jack Christian. May you always follow your dreams, and may you always know that you are loved beyond measure!

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To my committee members, my own pioneers of leadership, I would like to thank each of you for seeing me through this process. Thank you to Dr. Lee for chairing my committee and calming all of my worries and fears as I progressed through the program. I appreciate your leadership, kindness, and support. To Dr. Locke, thank you for helping me develop my ideas around this topic. Your kind support set me on a path of discovery and made course assignments so much more relevant as I continued to focus my research even before I began the dissertation process. To Dr. Johnson, thank you for having all of the answers! You truly made the dissertation process seem possible, even as I had many doubts. And to Dr. Labat, thank you for your encouragement, positive support, and kind words. Also, I would like to thank Dr. Stoulig for your help and your patience with me. You all truly helped make this dream of mine come true and for that I will forever be grateful.

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to all three of you, my children's grandparents, for helping Greg and me raise our children as I pursued my dreams of earning this doctorate.

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CHAPTER I

PURPOSE OF THE STUDY

Introduction

Research has shown that the most significant factor for improving education, among all variables present, is the teacher who has largest influence on student achievement (Darling-Hammond, 2006; Delors, 1998; Gamage & Walsh, 2003; Good et al., 2006; Grodsky & Gamoran, 2003). Retaining high quality and highly effective teachers in today's classroom is part of the solution to improving our educational system (Stanulis, Burrill, Ames, & O'Brien, 2007). As suggested by McKenzie and Locke (2009), "if enough schools have systemic coherence around high quality teaching, then the entire school district will have consistent teaching quality and high levels of student success" (p. 9). Overall, it is the teacher that makes the difference in student learning (Good et al., 2006).

Gendall (2001) and Lingam (2010) agreed that the professional competence of teachers depend on the quality of the teacher education program. They suggest the coursework should be relevant and should align with the responsibilities of teachers inside and outside of the classroom. To aid in the development of the competent teacher, teacher education programs must enable candidates to gain knowledge and skills needed to effectively teach all children (Cochran-Smith, 2006). Cuddapah and Burtin (2012) claimed we have an ethical responsibility to prepare teachers and give them adequate time to develop pedagogical experiences, especially in challenging schools so that teachers can promote academic achievement for all students. Given the significance of

teacher knowledge, as well as student progress, teacher education programs must continue to be a starting point for educational reform (Kleickmann et al., 2013).

As conveyed from Veenman's (1984) review of 80 studies, surveys of beginning teachers revealed that many beginning teachers encountered problems in areas including classroom discipline, dealing with individual differences, motivating students, relations with parents, organization of class work, assessing student work, and insufficient materials and supplies. In spite of the teacher education program, new teachers will often face many challenges in their new career (Wong, Chong, Choy, & Lim, 2012). Beginning teachers are often given the most challenging and difficult classrooms and assignments (Ingersoll, 2012). As Roberson and Roberson (2009) explained, beginning teachers, even in their first year, often assume the exact same responsibilities as twenty-year veterans. Furthermore, new teachers "are undertaking a remarkably complex endeavor, involving simultaneous management of multiple variables, including student behavior, intellectual engagement, student interactions, materials, physical space and time" (Roberson & Roberson, 2009, p. 113). Expectations for new teachers are contrastingly different from what other professional newcomers encounter in their field. "It makes little sense to expect a novice to perform as well as a person of experience in any setting, whether flying a jet filled with travelers or guiding a classroom filled with students" (Roberson & Roberson, 2009, p. 113).

According to Ingersoll (2012), a large percentage of new teachers depart from teaching within the first three years on the job due to the stress and strain of the new teaching career. "Not only are there far more beginning teachers in the teaching force, but these beginning teachers are less likely to stay in teaching" (Ingersoll, 2012, p. 49).

Inman and Marlow (2004) stated that the rate of departure for beginning teachers can be as high as 25-50% within three years of teaching. Similarly, Budig (2006) reported that nearly half of all new K-12 teachers depart from the profession within five years.

Ingersoll and Perda (2013) also reported approximately 40% to 50% of new teachers leaving within the first five years of teaching. The negative consequences that cause the high rate of teacher attrition, or teachers leaving the profession, can then increase the number of teacher shortages that often plague schools (Ingersoll, 2012).

Often teachers from traditionally marginalized groups are underrepresented in many schools today (Ingersoll, May, & Consortium for Policy Research in Education, 2011). “Beginning in the 1980s, the Ford Foundation, the DeWitt Wallace-Readers’ Digest Fund, and other foundations committed substantial funding to recruiting and preparing minority teachers” (Ingersoll et al., 2011, p. 3). Efforts like these have proven successful over the past decade, but there remains an ever present gap between the number of traditionally marginalized students and teachers from similar groups.

Adversely, school populations that have high populations of students from underrepresented groups are often difficult to staff (Payton, 2012). Often these schools leave administrators with an insufficient number of qualified teacher candidates, both from traditionally marginalized groups and White (Payton, 2012). With the high rate of attrition and teacher turnover, schools then are left trying to pay the multiple costs associated with shortages of teachers (Ingersoll, 2011).

To combat teacher attrition and shortages, Harris and Sass (2011) found that productivity and gains in academic achievement increased when new teachers had the opportunity to learn to teach from actual teaching experiences in the field, such as

working as a teaching assistant. “Paraprofessionals, formally known as teacher’s aides, teacher’s assistants, or teacher’s helpers, are individuals who perform a variety of roles in the classroom under the supervision of the classroom teacher” (Payton, 2012, p. 29).

Paraprofessionals also represent a more diverse population and may be seen as a solution for teacher shortages, in both special education and traditionally underrepresented shortage areas (White, 2004) in a profession that is mostly represented by White females (Feistritzer, 2011).

Since the inception of No Child Left Behind in 2002 (NCLB, 2001), there have been an estimated 600,000 paraprofessionals in U.S. classrooms (Bignold & Barbera, 2012; Giangreco, 2007; National Center for Education Statistics, 2007), and that number has continued to rise each year. Given the implementation of requirements, standards, and on-the-job training, research has shown that paraprofessionals are often an untapped resource of teacher candidates for teacher education programs (Payton, 2012). White (2004) suggested that paraprofessionals are often part of the local community, which may promise higher retention rates, and they often have proven performance of their duties as a teaching assistant.

One potential way to deliver instruction to paraprofessionals, who are currently in the schools, and help them gain certification, is through distance education or online learning. Distance education, or online education, can be defined as any courses that are delivered in a different geographical location and uses the Internet to deliver the courses (Tallent-Runnells, Thomas, & Lan, 2006). Distance education is a cost-effective way to provide instruction to students who are not in the same location (Morgan, Forbush, & Nelson, 2003). Using web-based instruction to give in-service educators access to higher

education provides convenience and flexibility (Rakap, 2010). A study conducted by Stricklin and Hulbert (2011) revealed that upon entry into the teacher education program paraprofessionals applied theory and practice more effectively than traditional route students. These researchers also noted that since paraprofessionals were already in the classroom, they thereby had a longer internship than the traditional route students.

Darling-Hammond (2006) affirmed that teacher education programs must move further from the traditional campus and engage more closely with schools to transform practices in teacher preparation. Darling-Hammond (2006) stated that a change from traditional teacher preparation programs must include the “extensive and intensely supervised clinical work— tightly integrated with course work— that allows candidates to learn from expert practices in schools that serve diverse students” (p. 306). Higher education institutions must design programs that transform settings where in-service teachers can learn to teach before they are actual teachers (Darling-Hammond, 2006). Since paraprofessionals are already in the classroom, Gutek (1970) and White (2004) suggest that transitioning paraprofessionals to teacher education candidates may be one way to alter teacher education programs to provide more in-service training for teacher candidates.

Statement of the Problem

The purpose of this study is to compare The University of Southern Mississippi teacher candidates, who completed the online teaching assistant program, and traditional teacher candidates, who completed the face-to-face program, to determine if there will be significant differences in professional knowledge and skills, as well as significant

differences in the two group's perceptions of self-efficacy. The questions guiding this research are

1. Is there a significant difference in online TAP (Teaching Assistants Program) and traditional face to face students' Praxis II: Professional Knowledge test scores?

2. Is there a significant difference in teachers' perceptions of self-efficacy between TAP teacher candidates and traditional route teacher candidates as identified by a self-efficacy survey completed during their teacher internship at The University of Southern Mississippi?

Hypotheses

The following hypotheses were investigated in this study:

H₁: There is a statistically significant difference between online TAP (Teaching Assistants Program) and traditional face to face students' Praxis II: Professional Knowledge test scores.

H₂: There is a statistically significant difference in teachers' perceptions of self-efficacy between TAP teacher candidates and traditional route teacher candidates as identified by a self-efficacy survey completed during their teacher internship at The University of Southern Mississippi.

Definition of Terms

Attrition- A reduction and/or decrease in the number of teachers in the field (Ingersoll, 2001).

Online education- Courses that are delivered in a different geographical location and uses the Internet to deliver the courses (Tallent-Runnells et al, 2006).

Paraprofessional- A person who is a teaching assistant to a certified teacher whose duties are performed in the classroom (White, 2004).

Self-efficacy- In teaching, a person's beliefs in their ability to motivate and promote student learning (Bandura, 1993).

Teacher Shortages- The result of high demand in relation to an inadequate supply of teachers (Boe, 2006).

Traditional teacher candidates- A student who completes a degree program in elementary education via on-campus, face-to-face coursework (Carr, 2012).

Traditionally marginalized- A person from a group who is often underrepresented in the larger population (Ingersoll et al., 2011).

Delimitations

1. Subjects in this research study were delimited to only those teacher candidates who were students at The University of Southern Mississippi completing either a traditional, face-to-face program, or the online TAP (teacher assistant program).
2. Responses were limited to those agreeing to participate in the study.

Assumption

The participants completed the self-efficacy survey honestly.

Justification

“Paraprofessionals play huge roles in almost every school in the country, yet there is very little research on the contributions they make to the education of our students” (Payton, 2012, p. 3). Paraprofessionals enter the classroom with previous classroom experience, most often they have been exposed to professional development, and they

may have more self-efficacy in their abilities to handle the duties of the classroom compared to non-experienced beginning teachers (Payton, 2012). Gutek (1970) and White (2004) asserted that there is a larger number of diverse staff of paraprofessionals in schools today. They suggest that transitioning these paraprofessionals to teacher education candidates may help avert teacher shortages of those traditionally underrepresented groups (Gutek, 1970; White, 2004). Gutek also claimed that many paraprofessionals often have the desire to be educators, which contributes to the reduction of fiscal and pedagogical concerns of teacher attrition.

CHAPTER II
LITERATURE REVIEW
History of U.S. Education

The importance of educating our youth has been a relevant topic that has spanned centuries. Since the beginning of our nation, education has been a source of concern for families, communities, and policymakers (Mondale, 2002). According to Adams and Garrett (1969), during the colonial and early national period, the burden of education was the responsibility of the family: thus, families would educate their own children or, if financially able, would hire tutors to educate their children. These tutors sometimes brought children into their own home while others gathered at a common place such as a church (Adams & Garrett, 1969). As more families entrusted their child's education to tutors, Adams and Garrett claimed that this was the onset of the common school. Common schools were to teach both boys and girls republican values and promote democracy, which would unite Americans as well as develop good character based on Biblical principles (Mondale, 2002).

Although formal public schooling from the town grammar schools upward was initially a male monopoly, informal education and elementary literacy were not. From the beginning women were teachers and girls learners. Both boys and girls were taught at home and in informal "dame" schools where they acquired the rudiments of literacy. (Tyack & Hansot, 1992, p. 13)

With the movement of common education, Adams and Garrett (1969) described some dame schools as the object of a disguised charity to benefit a widow or family that was financially struggling. The schoolmaster or teacher would establish this dame school in his or her home and charge tuition (Adams & Garrett, 1969).

Despite the fact that she [tutor] might have had only a minimal education herself, some parents, as a means of helping the teacher along, would pay a nominal tuition fee to send their children there for part of the day to study with her.

(Adams & Garrett, 1969, p. 40)

Parents would pay tuition and send their children to this school as a way of helping the schoolmaster while hoping for an education for their children (Adams & Garrett, 1969). These dame schools later became “women’s schools” where they taught both boys and girls basic education, however, when parents felt a need for more than a basic education they often would smuggle the girls into district schools that offered advanced education for boys (Tyack & Hansot, 1992, p. 18). Over time, this integration of boys and girls progressed into coeducation where all students were given the opportunity to learn (Tyack & Hansot, 1992).

In these early attempts to educate our youth, teaching was a necessity and often not a chosen profession. According to Adams and Garrett (1969), many teachers taught out of financial necessity or simply because they had little skills to do common work. Often if a person could not do the physical work of the community, they were called to teach (Adams & Garrett, 1969). “During colonial and early national period in American history, the field of teaching seemed to have an extensive appeal to drifters” (Adams & Garrett, 1969, p. 39). Along with drifters and unskilled laborers, there were other sources of acquiring teachers during that time. Teachers could be acquired through an apprentice program where the apprentice’s welfare was exchanged for teaching, bond servants could be called to teach in exchange for their passage to the U.S., and ministers, who were often the most educated of the community, could also be called to teach (Adams & Garrett,

1969). One might assume little enthusiasm and high reluctance of the chosen profession. As cited in Adams and Garrett (1969), the Pennsylvania Gazette of 1756 had an advertisement for three lost items: a watch, a horse, and a schoolmaster!

In the founding years of our nation, education was a vested concern for families, communities, and states respectively. “The United States constitution, ratified in 1789, did not mention education. Under the reserved powers clause of the 10th Amendment, in the Bill of Rights, the responsibilities and prerogatives of education remained vested in each of the individual states” (Guttek, 1970, p. 28). States, and often communities, used their powers to assign teachers and decide how their citizens would receive education (Adams & Garrett, 1969). Before long a system of mass education came into play as communities wanted to educate their citizens so they would be able to read religious material (Mondale, 2002). “The Sunday School movement in the United States was an attempt to provide large numbers of children with a basic education” (Guttek, 1970, p. 29). As the movement of mass education continued to grow, so too did the efforts to provide education for all youth. During this time, Benjamin Franklin’s advice in making “the proper education of our youth” (Guttek, 1970, p. 32) still remains one of the most important social policies that continue to shape our educational system.

The role public education plays in our society is often complex. “One of our nation’s most important tasks is to teach the members of the next generation how to maintain a democracy while pursuing their own life goals and the schools are the only collective way of doing it” (Hochschild & Scovronick, 2004, p. xi). According to Hochschild and Scovronick, the United States educational system is one that is governed

by our thoughts and beliefs about what education should be for our children. President George W. Bush stated in a speech in 2000,

The quality of our public schools directly affects us all, as parents, as students and as citizens. If our country fails in its ability to educate every child, we are likely to fail in many other areas. But if we succeed in educating our youth, many other successes will follow throughout our country and in the lives of our citizens. (as cited in Hochschild & Scovronick, 2004, p. 11)

The reality of 21st century schooling is that it is more complex than in previous centuries where the expectations of teachers were to prepare a small percentage of students for intellectual work (Darling-Hammond, 2006). The primary goal of schooling in this century is to provide quality education for all students. The professional competence of teachers in the classrooms today is considered the most important factor in providing a quality education for our children (Darling-Hammond, 2006; Delors, 1998; Gamage & Walsh, 2003; Good et al., 2006; Grodsky & Gamoran, 2003). In support, Delors stated that success and failure in achieving quality education lies primarily in the hands of the classroom teacher. For the prosperity of the nation, a top priority must demand that teachers be held accountable and become co-contributors to the learning outcomes of children so that all citizens have equal access to education (Wong et al., 2012). There is strong research evidence and social consensus that teachers make a difference in student achievement (Darling-Hammond, 2006; Delors, 1998; Gamage & Walsh, 2003; Good et al., 2006; Grodsky & Gamoran, 2003). Teachers are responsible for translating curriculum, resources, and other policies into practice (Gamage & Walsh, 2003; Grodsky & Gamoran, 2003). However, Feistritz (2011) stated that the profile of

U.S. teachers in today's classrooms include a majority of younger, inexperienced teachers. Many veteran teachers, with over 25 years of experience, are retiring each year leaving only 17% of public school teachers with more than 25 years of experience. There is also a lack of diversity in the field with a domination of White females representing approximately 84% of the teaching field (Feistritzer, 2011).

During George W. Bush's Presidency, the No Child Left Behind Act (NCLB, P.L. 107-110, 2001) was implemented, replacing the Elementary and Secondary Education Act, ESEA. This act also acknowledged the magnitude in teacher quality and effectiveness. It required all teachers to become *highly qualified* or have full certification from their state, possess a bachelor's degree, and have demonstrated competence in subject knowledge. As cited by Stanulis et al. (2007), developing and retaining highly qualified teachers is crucial to improving our educational system in the United States. Placing a highly-qualified, highly-effective teacher in the classroom can be a tough but important task. The factors that may contribute to the difficult task is that there are not enough academically able students attracted to teaching, there is a shortage of highly qualified teachers in key areas such as math and science, and there may be a need for improvement in teacher education programs (Gardner, 1983).

Over the past century, the teaching profession has shifted from being an almost unwanted, appointed profession to a preferred field for many. For those that choose the profession, promoting teacher quality is seen as the key element to improving our educational system (Harris & Sass, 2011). To improve the quality of education and the quality of our teaching force, one must take note of the factors that contribute to the improvement of the quality of education and the quality of students' learning outcomes

(Lingam, 2012). Hudson (2012) revealed from his study that the most common reason given for choosing teaching was because teacher candidates enjoyed teaching children and they wanted to inspire them. With those reasons in mind teacher candidates often begin the process of achieving their dream of becoming a teacher.

Teacher Licensure

In the early years of our nation, the only requirement to become certified to teach was to affiliate with the dominant religion of that community (Adams & Garrett, 1969). However, as times have changed, and our educational system has evolved, one must now meet the selected criteria from their respective state to gain certification. Today, state licensure ensures that individuals have met a minimal standard of teaching competence (Goldhaber & Anthony, 2003). “Many states offer two overlapping licenses for teachers of young elementary students: a K-5 or K-6 license to teach in elementary schools and an early childhood license to teach pre-kindergarten and the early elementary grades” (Bornfreund, 2012, p. 38). At the state level, prospective teachers may gain certification through meeting the guidelines for traditional, alternative, and administrator programs, or reciprocity and transferring their teaching license from a previous state (Mississippi Department of Education, 2013). To gain a traditional state teaching licensure, most states require that prospective teachers complete a teacher education program that consists of courses, at the university level, in pedagogy, content, or in a desired subject area as well as a standardized test (Goldhaber & Anthony, 2003). In Mississippi, prospective teachers may gain traditional Class A certification if they complete a bachelor’s degree or higher in teacher education from a state approved or NCATE approved program from a regionally/nationally accredited institution of

higher learning, pass both the Praxis II (Principles of Learning and Teaching Test) and Praxis II (Specialty Area Test) in degree program. (Mississippi Department of Education, 2013)

These certification procedures help to control admission as well as evaluate the credentials of prospective teachers to make sure they meet the professional standards set forth by the state (Payton, 2012).

Alternative Licensure

“Challenges for meeting the highly qualified teacher demand exacerbated by the critical shortage of teachers have necessitated a variety of preparation routes for those entering the profession of teaching” (Isaacs et al., 2012, p. 3). Section 37-3-2 of the Mississippi Code authorizes the Certification Commission and State Board of Education to approve all teacher preparation programs for both traditional and alternate route licenses (MDE, 2013). Many alternate route licenses can be gained with a bachelor's degree, outside of teacher education, and requires no pre-service student teaching (MDE, 2013). Often completion of one semester of coursework in education can satisfy requirements for alternate licensure.

Historically, the motivation for offering alternate route certification was to speed up the placement of teachers into the classroom, especially in shortage areas (Isaacs et al., 2012). The distinction between alternate route and traditional route licensures can be great, but often the focus is on the length of preparation as well as supervision of field experiences before entering the classroom (Cuddapah & Burtin, 2012). Because so many districts have vacancies for full time, high quality teachers, almost all states offer alternative route teaching licenses (Cuddapah & Burtin, 2012). With a shallow labor

market, many states permit schools to employ these non-traditionally licensed teachers to fill vacancies quickly (Goldhaber & Anthony, 2003). However, Darling-Hammond (2006) asserted that alternate route teachers have minimal training and are most often placed in low income schools teaching high needs students where there is a critical need for understanding the development of children and an understanding of pedagogy. Cuddapah and Burtin revealed that many alternate route teachers have idealistic views of the classroom and enter the classroom with little or no field experience and even less training in pedagogy. As revealed in their study, alternate route certification can lead to many hardships faced by the new teacher as explained by a first year teacher: “going from zero experience to full blown teacher in a month is borderline absurd. I was in no way prepared to deal with what I perceived to be a constant failure” (Cuddapah & Burtin, 2012, p. 68). Increasing student enrollment and high teacher retirements have forced states to lower the standards for licensure to fill the vacancies; however, this often leads to under-qualified teachers and lower student achievement (Ingersoll & Smith, 2003).

Cuddapah and Burtin’s (2012) research claimed novice teachers already face many challenges, but alternate route licensure provides little training for the complex task of teaching. Most alternate route teachers reported that they not only needed more instruction on how to plan lessons and encourage student learning but also strategies for room arrangement (Cuddapah & Burtin, 2012). In contrast, traditional programs give students the chance to practice their newly acquired skills and knowledge before assuming full responsibility of the classroom by participating in appropriate coursework followed by student teaching (Cuddapah & Burtin, 2012). Because alternate route programs lack these components, alternate route teachers often need consistent guidance

on how to teach content, frequent opportunities to learn from experts, and help with the logistical aspects of teaching (Cuddapah & Burtin, 2012).

Teacher Education Programs

In the early days of our nation, there were few colleges or institutions of higher education (Adams & Garrett, 1969). Today, there are an abundance of institutions that offer preparatory courses and degrees for those seeking certification in the teaching field. Candidates that complete institutional programs in teacher education can gain traditional licensure (MDE, 2013). With the varying teacher education programs, there is often “no strong consensus about the value of pedagogical preparation of teacher, the teaching of how to teach” (Goldhaber & Anthony, 2003, p. 2). As revealed by Horn (1994), there is often a debate on what courses should be covered in teacher education programs. Currently, some university teacher education programs focus on content-specific teaching methods while some teach subject-specific methods (Goldhaber & Anthony, 2003). As Wong et al. (2012) stated, regardless of the program, all teacher education programs should include subject matter, learning about students, curriculum, as well as pedagogy. Similarly, Lingam (2012) claimed that courses should also respond to emerging ideas and issues that are related to teacher education and the work of the school. Fiemann-Nemser (2001) also stressed that learning to teach should involve synthesizing different kinds of knowledge into a set of commitments, understandings, and skills.

There are three general areas of knowledge, skills, and dispositions that are important for all teachers to have: (i) knowledge of learners and how they learn and develop within social contexts; (ii) conceptions of curriculum content and goals: an understanding of the subject matter and skills to be taught in light of the

social purposes of education; and (iii) an understanding of teaching in light of the content and learners to be taught, as informed by assessment and supported by classroom environments. (Bransford, Darling-Hammond, & LePage, 2005, p. 10)

Teacher education programs for today's classrooms need to prepare teachers to develop values, skills, and knowledge that are universally relevant across different cultures and communities (Wong et al., 2012). The focus should be on the national curriculum rather than on just the study of theories of education (Lawlor, 1990). Teacher education should rely less on theory and be based more on a constructivist approach of the teaching and learning process where teachers learn by teaching (Lingam, 2012). As identified by Wong et al., there are six factors that should be present in all teacher education programs: (a) student learning and the development of how students learn, (b) lesson planning or how to develop the scope and sequence of goals and objectives for the days, weeks, and year, (c) instructional support and when to facilitate and scaffold so that students can create their own understanding, (d) accommodating diversity and creating lessons that offer differentiated activities to meet the needs of each student, (e) classroom management, and (f) care and concern for all students. With these factors in mind, the challenge of preparing outstanding teachers remains an issue for all teacher education programs, as well as policymakers (Wong et al., 2012).

Gendall (2001) and Lingam (2010) agreed that the professional competence of teachers depend on the quality of the teacher education program and the relevance of the coursework that should align with the responsibilities of teaching inside and outside of the classroom. To aid in the development of the competent teacher, teacher education programs must enable candidates to gain knowledge and skills needed to effectively teach

all children (Cochran-Smith, 2006). Scannell (1999) identified the six most important factors in teacher education programs: (a) examples of pedagogy that is present in class and in field experiences; (b) theory is interwoven with practice; (c) more experiences and longer periods of time in field experiences; (e) a strong connection is made with schools and the university; and (f) instruction and assessment are comprehensive.

Cuddapah and Burtin (2012) claimed we have an ethical responsibility to prepare teachers and give them adequate time to develop pedagogical experiences, especially in challenging schools so that teachers can promote academic achievement for all students. Lingam (2012) stated that teacher preparation programs should serve as the first phase of professional development since many teachers often do not have the opportunity for in-service professional development after completing most programs. Klieckmann et al. (2013) reaffirmed that given the importance of teacher knowledge, as well as student progress, teacher education programs must continue to be a starting point for educational reform.

After the completion of a teacher education program and a teacher candidate is placed in a classroom, we must consider how that teacher affects his or her student's achievement. As Good et al. (2006) reported, there is very little research connecting teacher education programs and how they affect practice, so often there is little known about how graduates teach and how their students will learn and achieve. Wilson, Floden, and Ferrini-Mundy (2001) confirmed that there is no consensus on teacher education programs, and since they vary greatly, the impact on student learning is not always clear. However, the pre-service training lays the foundation and gives pre-service teachers the much needed practice in teaching (Wong et al., 2012). Practice in teaching, or pedagogy,

through student-teaching experiences gives teacher candidates the skills they will need for their future classroom (Addison, 2010) and lays the foundation for their ability to manage the classroom and the students. Through coursework and field experiences, teacher education programs, although varied, should prepare teacher candidates for the knowledge of how children and adolescents think and behave, as well as understand the differences across cultures, communities, gender, race, and other social aspects (Darling-Hammond, 1999). Teachers should be able to deliver the curriculum that is guided by their students' experiences, background knowledge, and understandings of the world around them (Darling-Hammond, 1999; Hudson, Beutel, & Hudson, 2009; Wong et al., 2012).

With variations of teacher education program requirements in mind, Hudson (2012) revealed that connecting theory from the classroom to practice should be a real concern for teacher education programs.

There can be an assumption that beginning teachers who have completed four years of an undergraduate study, with about 20% of the course time involved with schools during extended practicum and internship hours, are equipped to cater for immense diversity that exists within the education system, schools, and classrooms. (Hudson, 2012, p. 56)

Adequate training in all areas in teacher education programs is vital to the success of making a difference in the lives of the students (Lingam, 2012). Novice teachers might have the basic skills, stated Wilson et al. (2001), but many teachers lack the conceptual understanding for extending lessons beyond the basics as well as developing and answering questions for students. Hudson (2012) reported that when beginning teachers

reflect on their elementary education program, they value the practice in pedagogy rather than the theoretical knowledge base. Practice in pedagogy, employment of best practices, and the need for more teacher preparation are all key aspects for success in the classroom (Cuddapah & Burtin, 2012). However, teachers often come from such vastly different programs, each possessing their own set of skills and perspectives and their own ideas about what constitutes best practices, that they often are left feeling unprepared for the job (Good et al., 2006). Veenman (1984) stated that the challenges new teachers face can be attributed to many factors with only one of them being their teacher education program. However, because teacher education programs provide the foundation, Hudson asserted that it is crucial to examine the challenges and needs of beginning teachers and reflect on the effectiveness of the university coursework. Regardless of the teacher preparation, Hudson explained that schools have many human conditions, and university studies cannot possibly cover the enormous contexts in which schools operate. However, teacher education programs must design coursework for better preparation and awareness.

Beginning Teachers

Once a candidate has completed a teacher education program, or become alternately certified, they can begin the practice of teaching. Shifting from teacher candidacy to certified teacher presents many challenges as teachers transition from theory to practice. School districts must embrace the needs of beginning teachers and find solutions to their challenges (Roberson & Roberson, 2009; Stanulis et al., 2007). Ingersoll (2012) stated that education reformers have focused on the challenges of newcomers since the beginning of public schools. The first years of school, described

Wong et al. (2012), are an intense and formative time in pedagogy and determine which teachers will remain in teaching and how effective they will be. Hudson (2012) described how beginning teachers need support for all of the various human conditions, curriculum, pedagogy, social, and cultural contexts as well as the other interpersonal skills necessary for being a successful teacher. As reported from Veenman's (1984) review of 80 studies, surveys of beginning teachers revealed that they encountered problems in the following areas including classroom discipline, dealing with individual differences, motivating students, relations with parents, organizations of class work, assessing student work, and insufficient materials and supplies. In spite of the program from which new teachers came, new teachers will face a multitude of challenges, and many of those challenges can only be averted by gaining more experience as well as learning on the job (Wong et al., 2012).

Fieman-Nemer (2001) affirmed that although pre-service education and experiences lay the foundation, that foundation cannot compare to the real experiences encountered in teaching. Although new, traditionally trained teachers have completed four years of teacher training, they are expected to accomplish tasks similar to veteran teachers sometimes even under more extreme conditions (Hudson et al., 2009).

Beginning teachers are often given the most challenging and difficult classrooms and assignments (Ingersoll, 2012). As Roberson and Roberson (2009) explained, beginning teachers, even in their first year, often assume the exact same responsibilities as twenty-year veterans. Furthermore, new teachers "are undertaking a remarkably complex endeavor, involving simultaneous management of multiple variables, including student behavior, intellectual engagement, student interactions, materials, physical space and

time” (Roberson & Roberson, 2009, p. 113). Expectations for new teachers are contrastingly different from what other professional newcomers encounter in their field. “It makes little sense to expect a novice to perform as well as a person of experience in any setting, whether flying a jet filled with travelers or guiding a classroom filled with students” (Roberson & Roberson, 2009, p. 113).

The challenges that beginning teachers face, explained by Gavish and Friedman (2010), can be due to the absence of organizational efforts to orient them, as well as defects in teacher training programs. Wong et al. (2012) suggested that one challenge is to understand the relationship between pedagogical strategies and theories of learning. Other challenges that new teachers face include a feeling of professional incompetence, feelings of failure, and a low self-efficacy that often leads to disillusionment and ambivalence towards their chosen profession (Cuddapah & Burtin, 2012; Gavish & Friedman, 2010). These new teachers have few points of reference for fulfilling their role as a teacher, how to effectively be responsible for their own students, how to judge their performance, and how to make realistic assessments of their progress (Roberson & Roberson, 2009). Gavish and Friedman stated that beginning teachers are often not well acquainted with school procedures, teachers’ rights, obligations, or responsibilities. Challenges continue as new teachers feel unsatisfied with their organizational situation of their work, disintegrated, unsupported by the environment, and unsatisfied with their professional recognition and appreciation by others (Gavish & Friedman, 2010).

The challenges that new teachers face, especially during their first three years of teaching, can lead to many undesirable outcomes. It is these first years of teaching that are critical in the development of effective teachers (Inman & Marlow, 2004). It is also

during these first years of teaching that teachers may begin to feel the effects of burnout or the progressive buildup of stress that may be due to the complexity of the teaching duties (Gavish & Friedman, 2010). Some beginning teachers identified burnout as “terrible exhaustion, strain, alienation from students, and feelings of professional failure” (Gavish & Friedman, 2010, p. 161). Gavish and Friedman’s study on novice teachers’ burnout revealed four key aspects of the novice teacher’s work that can lead to burnout:

(a) It shows that novice teachers experience burnout immediately upon entering teaching and throughout their first year at school, and hints at the possibility that burnout may already be present during the teacher’s professional training, before they even begin their teaching career; (b) it demonstrates that burnout is a dynamic process and describes its development over time. This is different from most studies that have examined burnout, most of which focus only on one cross-sectional measurement; (c) it provides information regarding their emotional burnout, empirically supporting the claim that an unsupportive working environment, which neither appreciates the teachers’ sense of competence and encourage feelings of professional failure; and (d) it singles out the “role holders” in the novice teachers’ environment, whose appreciation, or lack of appreciation for the teacher contributes the most to the teacher’s emotional burnout. (Gavish & Friedman, 2010, p. 164)

Along with burnout, Ingersoll (2001) asserted that alienation and isolation may occur as new teachers begin to develop survival mode strategies. The nature of teaching may lead to isolation as the commitment of work involves intensive interaction with children, elementary or secondary, and naturally isolates teachers from their own

colleagues in a typical workday (Ingersoll, 2001, 2012). This isolation is particularly difficult for new teachers because they are left to succeed or fail in their own confines of their classroom (Ingersoll, 2012). Without proper support during a teacher's first years on the job, beginning teachers are often faced with a multitude of challenges (Cuddapah & Burtin, 2012; Ingersoll, 2001, 2012; Wong et al., 2012).

Beginning teachers are often unprepared for the complexity of the teaching duties they experience in their first years on the job (Cuddapah & Burtin, 2012). Teacher education programs often fail at providing adequate experiences in pedagogy and rely heavily on theory, which does not always help teacher candidates learn *how to teach* or develop skills in pedagogy (Cuddapah & Burtin, 2012). However, beginning teachers are entering the classroom as licensed teachers, either traditionally or alternately certified, in spite of the evidence of being unprepared (Lingam, 2012). Research has shown that being inadequately prepared for teaching leads to high teacher turnover, teacher attrition, and an overall dissatisfaction for the job (Brownell, Bishop, & Sindelar, 2005). Solutions such as induction programs, or support systems for beginning teachers, have shown promising effects but rely heavily on the principal's leadership to execute a truly effective induction program (Stanulis et al., 2007). Literature provides other solutions such as the idea of job sharing. With job sharing, two teachers share the responsibility of one full-time position or classroom (Cuddapah & Burtin, 2012). This would allow for half of the teaching duties to be assigned to each the new teacher and co-teacher, preferably a veteran teacher or experienced teacher. This may allow the veteran teacher to provide support and assist in the professional development of the novice teacher's knowledge, skills, and pedagogy (Cuddapah & Burtin, 2012).

Even the challenges of one new teacher can be a burden on any school or school district and the reality is that many districts are presented with a growing number of first year teachers at the beginning of each new school year (Roberson & Roberson, 2009). Each year there are a large number of beginning teachers entering the field due to a large number of beginning teachers leaving the field only after a couple of years on the job (Ingersoll, 2012). This is known as teacher attrition or leaving the profession of teaching early on in their career. Since the 1980s, the U.S. teaching force has dramatically increased in size due to “enrollment increases, teacher retirements, turnover, and career changes” (Budig, 2006, p. 114). Also, “from 1980 to 2008, total K-12 student enrollment went up by 19% but the teaching force increased at over 2.5 times that rate, by 48%” (Ingersoll, 2012, p. 49). In 2008, the most common teacher was a beginning teacher in their first year of teaching. In 1988, there were 65,000 1st year teachers, but by 2008, it was over 200,000 (Ingersoll, 2012). The U.S. Census Bureau indicates that K-12 remains one of the largest occupational groups and is continuing to grow even larger (Ingersoll, 2012).

Teacher Attrition

The teaching profession represents the largest workforce in the nation with beginning teachers representing the largest group (Ingersoll, 2012). As stated by Ingersoll, there were over 200,000 beginning teachers that began their teaching career in 2008. The abundance of beginning teachers in the teaching workforce, and the challenges they face, provide many obstacles for sustaining a culture that promotes student achievement (Darling-Hammond, 2006; Ingersoll, 2012). Over ninety percent of beginning teachers begin their careers with the full responsibilities of the classroom

(Kang & Berliner, 2012). According to Wong et al. (2012), new teachers, with all responsibilities of the new profession, struggle with the two main aspects of their new career: teaching and learning to teach. Teaching and learning to teach are two complex tasks that teachers must conquer to be successful in the field of education. Harris and Sass (2011) found that productivity and gains in academic achievement increased when new teachers had the opportunity to learn to teach from actual teaching experiences in the field. In contrast to other professions such as law, medicine, psychology, and business, which help new entrants bridge theory into practice by offering lengthy internships and time to gain experience, the teaching profession often provides an inadequate amount of time to develop pedagogical skills (Darling-Hammond, 2006). In the teaching field most teacher candidates are only required to complete a ten-week internship of student teaching before gaining the full responsibility of the classroom (Addison, 2010).

According to Ingersoll (2012), a large percentage of new teachers depart from teaching within the first three years on the job due to the stress and strain of the new teaching career. “Not only are there far more beginning teachers in the teaching force, but these beginning teachers are less likely to stay in teaching” (Ingersoll, 2012, p. 49). Inman and Marlow (2004) stated that the rate of departure for beginning teachers can be as high as 25-50% within three years of teaching. Similarly, Budig (2006) reported that nearly half of all new K-12 teachers depart from the profession within five years. Ingersoll and Perda (2013) reported an even higher rate with approximately 40% to 50% of new teachers leaving within the first five years of teaching. An overwhelming number of research studies clearly show that too many beginning teachers leave the profession within the first few years on the job (Chen, Knepper, Geis, & Henke, 2000; Grissmer &

Kirby, 1997; Ingersoll, 2012; Ingersoll & Perda, 2013; Murnane, Singer, Willet, Kemple, & Olsen, 1991; Schelcty & Vance, 1981).

Leaving the profession early on, or teacher attrition, can be related to many factors. Ingersoll, Merrill, and May (2012) stated that pre-service preparation and pedagogy courses were a contributing factor in teacher efficacy, or confidence in teaching ability, and strongly related to teacher attrition. “Beginning teachers who had taken more courses in teaching methods and strategies, learning theory or child psychology, or material selection were significantly less likely to depart” (Ingersoll et al., 2012, p. 33). To advert some of the challenges for beginning teachers, Cuddapah and Burtin’s (2012) research revealed that teachers wished their teacher preparation program had helped them establish routines, develop behavior management systems, design classroom layouts, and help plan the scope and sequence of the curriculum. In critical areas such as math and science, the pre-service preparation programs were strongly correlated to an even lower retention rate of math and science teachers (Ingersoll et al., 2012).

Teacher preparation programs continue to contribute to teacher attrition as beginning teachers enter the field of teaching with a large number of challenges and low self-efficacy or feeling unprepared for their teaching career (Darling-Hammond, 2010). Challenges of these new teachers as reported by Darling-Hammond often include factors such as low salaries, unsatisfying working conditions, lack of professional support from management, and inadequate teacher preparation to help new teachers deal with student achievement and behavior. Bezzina (2006) reported that beginning teachers also face challenges with the mixed abilities of their classrooms, discipline problems, curriculum

implementation, and overall physical exhaustion. Similarly, Myers, Cruickshank, and Kennedy (1974) reported that the main challenges of beginning teachers were often providing for individual learning differences, getting students to reach their potential, and having enough time to prepare for the day. These challenges may be some of the main causes of high attrition rates. Ingersoll (2012) stated that this *revolving door* of teachers coming and going has negative implications for our schools and our students.

As reported in the study from Ronfeldt, Loeb, and Wyckoff (2013) teacher turnover often is the most harmful to non-White students from traditionally marginalized groups and students in low performing schools. Their results also indicated that teacher attrition has a significant impact on student achievement in both math and reading scores for all students (Ronfeldt et al., 2013). Furthermore, teacher attrition as reported by Ronfeldt et al. negatively impacts schools by disrupting the formation of relationships that are needed for student achievement. They also reported that it changes the teacher's overall effectiveness, which negatively affects student outcomes (Ronfeldt et al., 2013).

Along with student achievement, the impact of teacher attrition can also have a negative impact on the fiscal aspect of schools. Teacher attrition continues to be a huge financial burden for the school districts and the government (Ingersoll & Strong, 2011). "Attrition from teaching is costing governments significantly" (Hudson, 2012, p. 50). Teacher attrition often results in "organizational costs of termination, substitutes, new training, and lost learning" (Darling-Hammond, 2010, p. 19). These factors contributed to an "estimated national price tag of \$2.1 billion a year" (Darling-Hammond, 2010, p. 19). Because schools struggle to manage an already limited budget, teacher attrition is a cost that should be avoided.

Teacher attrition also affects human resources. Isaacs et al. (2012) stated that teacher attrition is more than just a supply and demand formula. They revealed that although teachers may leave the school, they may just be reassigned to another school within that district (Isaacs et al., 2012). Similarly, Ingersoll and Smith (2003) reported that teacher attrition does not always result in a net loss of teachers, rather a migration of teachers from one school to the next. They say high teacher attrition creates uneven distributions and shortages in high-poverty schools where most newly hired teachers are first year, alternately certified teachers (Ingersoll & Smith, 2003).

Retaining teachers and combating retention lowers the cost and demand of hiring new teachers (Harris & Sass, 2011). Each year administrators spend their time, money, and effort in the hiring process of new staff members especially in low-income schools (Ronfeldt et al., 2013). An average district spends between \$8,000 and \$48,000 dollars on teacher attrition costs for hiring, placement, induction, separation, and replacement of beginning teachers (Benner, 2000). Also research has shown that even with money invested, “it is typically more challenging to fill vacancies in low performing, minority schools with qualified teachers” (Ronfeldt et al., 2013, p. 12). High turnover among staff members also results in the loss of institutional knowledge that supports student learning (Ronfeldt et al., 2011). With the high cost of attrition and teacher turnover, schools are left with shortages of teachers, especially in hard to staff schools (Ingersoll, 2011).

Teacher Shortages

The U.S. employs approximately 2.9 million teachers and hires approximately two million new teachers each year due to student enrollment increases, retirements, teacher attrition and teacher shortages (Budig, 2006). The negative consequences that

cause the high rate of teacher attrition can then increase the number of teacher shortages that often plague schools (Ingersoll, 2012). Boe (2006) described how teacher shortages are affected by supply and demand:

Ideally, teacher demand is balanced by an adequate supply. Teacher shortages are, of course, the result of either exceptional high demand in relation to supply and/or exceptionally low supply in relation to demand. An inadequate supply of teachers in relation to demand inevitably results in a shortage. (p. 138)

As Kang and Berliner (2012) stated, a series of reports from the 1980s predicted that the increase in student enrollment coupled with high teacher turnover would contribute to teacher shortages. In a National Center for Education Statistics (NCES) 2007 report, an eight percent increase in student enrollment was predicted between 2006 and 2018. NCES reported that enrollment in U.S. schools has grown from 29.9 million in 1990 to approximately 50 million in 2008. With teacher shortages comes an inability to place highly qualified, licensed teachers in every available classroom (Ingersoll et al., 2012). Research shows that both the increase of new teachers as well as the instability of beginning teachers will continue to increase (Ingersoll, 2012), which will continue to contribute to teacher shortages.

Previous research has shown that one area of teacher shortages is in schools with traditionally marginalized groups (Ingersoll et al., 2011). “Beginning in the 1980s, the Ford Foundation, the DeWitt Wallace-Readers’ Digest Fund, and other foundations committed substantial funding to recruiting and preparing minority teachers” (Ingersoll et al., 2011, p. 3). Efforts like these have proven successful over the past decade but there is still an ever present gap between traditionally marginalized groups of students and

teachers. Adversely, school populations that have traditionally marginalized populations are often seen as one of the main concerns for teacher shortages (Payton, 2012). With the high cost of attrition and teacher turnover, schools are left with shortages of teachers (Ingersoll & Strong, 2011) and leave administrators with an insufficient number of qualified and ethnically diverse teacher candidates (Payton, 2012).

Shortages of teachers in critical areas such as math and science may also contribute to the overall shortage of teachers (Budig, 2006; Ingersoll & Strong, 2011). “In the country’s middle schools, more than 20% of math teachers and more than 40% of physical science teachers are teaching ‘out of field’ or without some necessary qualification” (Budig, 2006, p. 114). According to Ingersoll (2011), shortages in math and science areas have been the topic of concern for much research.

Numerous high-profile reports have directly tied mathematics and science teacher shortages to a host of education and social problems, including the inability to meet student achievement goals, low U.S. performance compared to other nations, the minority achievement gap, poor national economic competitiveness, and even threats to national security. (Ingersoll, 2011, p. 37)

Ingersoll and Strong (2011) further revealed that each year less than twenty five percent of teacher candidate graduates are qualified in the areas of math and science. Chaudhuri (2009) asserted that the shortage of math and science teachers has had a devastating effect on the education that our students receive. Teacher shortages in the areas of math and science can often be attributed to teacher attrition in this area as well (Chaudhuri, 2009). As reported in Chaudhuri’s research study, many math and science teachers leave the profession for higher paying jobs outside of the teaching field. The

shortages in the critical areas of math and science are issues of concern for school districts across the nation (Chaudhuri, 2009).

Along with math and science, another area of teacher shortages can be seen in special education classrooms. “Since the Individuals with Disabilities Act was enacted, many school districts have been unable to secure sufficient quantities of certified special education teachers, threatening our nation’s ability to adequately serve students with disabilities” (Brownell et al., 2005. p. 9). In the 2002-2003 academic year, there were 49,307 teachers in special education who were not certified to teach special education (Payton, 2012). According to Boe (2006), the field of special education has seen an increase in demand of fully certified teachers for special needs children ages 6 to 21. He also revealed that these demands in special education affect the general education shortages as well by lowering the source of supply for general education when a dual certified general education teacher is placed in a special education classroom (Boe, 2006).

Induction

The issues that plague schools today may involve the challenges of beginning teachers, teacher attrition, and teacher shortages. The demographic changes in the teaching force show an increase in beginning teachers and decrease in veteran teachers each year (Ingersoll, 2012). To combat teacher attrition, or teachers leaving the profession of teaching, and reduce teacher shortages, Hudson (2012) noted that beginning teachers need more affirmations by school administrators, mentors, and staff in order to develop a better sense of self-efficacy. Also, support from the university should continue by creating a partnership with the school during the first few years into the profession as

a means of “intervention for retention” (Ingersoll, 2012, p. 48) where the university and school create a partnership to help retain beginning teachers by providing support.

Hudson (2012) reported that there is often a lack of relevance and disconnect between the university and the real world of teaching. To improve our schools as well as produce gains in student achievement, support for beginning teachers must be a priority (Ingersoll, 2012). As reported by Ingersoll and Smith (2003), data from beginning teachers showed that inadequate support was one of the main factors in the departure of the teaching profession.

Stanulis et al. (2007) stated that one natural step in fostering beginning teachers is through induction programs. With induction programs, beginning teachers gain wisdom about the realities of teaching as well as a repertoire of teaching strategies from experienced teachers. Newly hired teachers often bring to the classroom high energy for success, a drive for success, imagination, and a desire to use the newly learned knowledge, skills, and strategies from their pre-service program (Stanulis et al., 2007). However, these beginning teachers often require guidance despite the pre-service practice gained prior to licensure (Wong et al, 2012). Without proper guidance, as research from Allen (2009) showed, teachers reverted to the traditional school practices, good and bad, by conforming to the ‘status quo.’ Furthermore, beginning teachers often do not employ university instructional strategies unless they are a part of the guidance from other school staff (Allen, 2009). Therefore, it has been shown that once teacher candidates graduate, school districts are responsible for their learning and professional development to becoming a highly successful teacher (Stanulis et al., 2007).

With increasing rates of new teachers entering the teaching field but also leaving the workforce, the need for induction programs has increased significantly (Ingersoll, 2012). In his study, Ingersoll (2012) showed that the number of beginning teachers who participated in an induction program rose from 50% in 1990 to 91% by 2008. Although the teaching profession has not traditionally had the types of induction programs compared to other professions, this rate increase shows a step towards supporting new teachers. Ingersoll stated that using induction programs, schools and administrators can address the challenges of new teachers as well as problems with employee entry and orientation. Induction programs can also address the intellectual and emotional complexity of teaching that challenges many new teachers (Kang & Berliner, 2012). Teacher induction programs should help prepare beginning teachers to become part of the larger community of learners and also prepares them to “become leaders in their schools, districts, and community” (Stanulis et al., 2007, p. 137). The overall objective of any induction program should be “to improve performance and retention of beginning teachers and to enhance and prevent the loss of investments in teacher’s human capital” (Ingersoll & Strong, 2011, p. 225).

Research has shown that induction programs encourage the professional development of new teachers as well as combat teacher attrition (Addison, 2010; Brownell et al., 2005; Ingersoll, 2011). To avert the challenges of new teachers, an induction program should be the primary source of professional development for beginning teachers (Addison, 2010). Induction programs are often based on the belief that “after completing the initial teacher preparation program, beginning teachers are merely at the beginning of the process of learning to teach” (Stanulis et al., 2007, p. 135). “The

challenge is bringing the worlds of theory and practice together, a challenge made even more visible as universities, faculty, and K-12 teachers work to collaborate to design an induction experience for beginning teachers” (Stanulis et al., 2007, p. 136).

Induction has become an educational reform movement for schools across the nation (Ingersoll, 2012). With induction, beginning teachers can transition from teacher education theory to realistic practice in the classroom under the guidance and support of more experienced teachers and administrators (Addison, 2010). Ingersoll (2012) stated that many schools across the nation have developed forms of induction programs; however, they can vary greatly in types and amount of support. Stanulis et al. (2007) described that many induction programs often consist of a one year internship followed by two years of assistance and support from veteran teachers and administrators. Common components of induction programs provide new teachers the opportunities to gain support from administrators, have common planning times and regularly scheduled collaboration with other teachers, and attend seminars on beginning teacher issues (Ingersoll, 2012; Kang & Berliner, 2012). In addition, Ingersoll (2012) added that beginning teachers need an induction program that offers a reduced course load and provides assistance from a classroom aide.

Mentorship

Stanulis et al. (2007) asserted that providing assistance to new teachers through induction programs relies heavily on mentorship. The role that mentors play in the induction programs may be crucial. Stanulis et al. (2007) revealed the one of the most important aspects of any induction program should be the inclusion of collaboration among administrators or veteran teachers with beginning teachers. Cuddapah and Burtin

(2012) confirmed that beginning teachers crave collaboration with experts or authoritative figures and often want interaction and collaboration with their professional peers outside of the classroom.

A mentor needs to respond to a beginning teacher's needs and help fit in to the school and district professional norms but to do so in the context of stimulating and supporting them to become thoughtful teachers making decisions based on a framework designed for student learning. (Stanulis et al., 2007, p. 144)

This support system, although advocated by many educational systems, is often left up to the individual schools and principals to implement (Hudson et al., 2009; Hudson, 2012). Research shows that “the critical factor in a first-year teacher's success is the principal and the connections to master teachers and supportive colleagues that the principal fosters on behalf of novice teachers” (Roberson & Roberson, 2009, p. 117). Beginning teachers look to the principal for direction and guidance because they “serve as instructional leaders of the school and have the power and authority to help make connections and activities for novice teachers” (Roberson & Roberson, 2009, p. 118).

Beginning teachers also see principals as knowledgeable of quality teaching, not only because they originated in the classroom and have teaching experience but also because principals are the chief teacher appraisers and make judgments on the novice teacher's ability to teach. (Roberson & Roberson, 2009, p. 114)

Understanding the experiences of the beginning teacher, principals must interact and make connections with them to develop their abilities in teaching (Roberson & Roberson, 2009). That is, “they must develop strategies to meet the needs of novice first-year teachers to ensure their success” (Roberson & Roberson, 2009, p. 113).

Roberson and Roberson (2009) asserted that the expectations that beginning teachers have for principals include expressing the criteria for good teaching, conducting classroom visits with appropriate feedback, having regularly scheduled meeting times, giving affirmation, and expressing an understanding of the importance of open communication. It is the responsibility of the principal to help new teachers remain prepared as they help meet school and district goals as well as help students become successful (Hope, 1999; Roberson & Roberson, 2009). Orienting novice teachers to the school and the principal's expectations requires systemic contact with attention to assisting first-year teachers' professional growth and development (Hope, 1999). Principals must develop strategies for working with beginning teachers that include regular professional development meetings with meaningful instructive feedback (Roberson & Roberson, 2009).

Depending on the length of induction and the number of support systems, induction programs can have a significant effect on the decline in teacher attrition (Ingersoll, 2012). Kang and Berliner (2012) revealed a positive influence on teacher attrition when new teachers were assigned to a mentor in the same area of teaching. By providing extra classroom assistance, participating in beginning teaching seminars, and having a common planning time, the teacher turnover rate was reduced (Kang & Berliner, 2012). Ingersoll and Strong (2011) summarized his findings by revealing that

Almost all studies showed that beginning teachers who participated in some kind of induction program had higher satisfaction, communication and retention. They performed better at various aspects of teaching, such as keeping students on task. They had higher scores or gains on academic achievement tests as well. (p. 225)

Teacher Effectiveness

“Teaching is a massive human enterprise, whose training needs dwarf those of the military” (Budig, 2006, p. 116). The goal of all teacher education training, from preparation programs for teacher candidates to induction programs for beginning teachers, is to develop a highly effective teacher (Wong et al, 2012). As suggested by Budig (2006), the U.S. must make an investment in the development of teachers or pay for failure later. The key element in improving our education system today is by promoting teacher quality (Harris & Sass, 2011).

However, in today’s classrooms, a measure of a teacher’s quality and effectiveness are often related to state mandated test scores. Since the publication of *A Nation at Risk*, a teacher’s success in the classroom has been measured by the subsequent test scores of her students (Gardner, 1983). The No Child Left Behind Act of 2001 also reinforced the link between teacher effectiveness and a student’s score on state mandated tests (Good et al., 2006). However, research has shown that teaching for individual student achievement cannot rely on such narrow measures to prove effectiveness, and may be tragically self-defeating for the teacher (Good et al., 2006).

The importance of quality teaching is an important aspect in today’s society (Darling-Hammond, 2006). Having high quality and highly effective teachers in today’s classroom is part of the solution to improving our education system in the U.S. (Stanulis et al., 2007). Research has shown that the single biggest factor for improving education, among all variables present, is the teacher who has biggest influence on student achievement (Darling-Hammond, 2006; Delors, 1998; Gamage & Walsh, 2003; Good et al., 2006; Grodsky & Gamoran, 2003). As suggested by McKenzie and Locke (2009), “if

enough schools have systemic coherence around high quality teaching, then the entire school district will have consistent teaching quality and high levels of student success” (p. 35). Overall, research has shown that it is the teacher that makes the difference in student learning (Good et al., 2006).

The National Academy of Education Committee on Teacher Education (as cited by Darling-Hammond, 2006) reported the standards for teaching as

Knowledge of learners and how they learn and develop within social contexts, including knowledge of language development; understanding of curriculum content and goals, including the subject matter and skills to be taught in light of disciplinary demands, student needs, and the social purposes of education; and understanding of and skills for teaching, including content pedagogical knowledge and knowledge for teaching diverse learners, as these are informed by an understanding of assessment and of how to construct and manage a productive classroom. (p. 303)

“There is much debate on whether teaching ability is a function of natural talents requiring little preparation or a skill that requires multiple forms of knowledge that must be taught” (Payton, 2012, p. 16). Regardless if teaching is a learned skill or an inherit ability, Good et al. (2006) suggested that effective teachers are the single most influential factor in raising student achievement. Student achievement is the goal of teaching and educators must optimize this achievement (Good et al., 2006). Teachers optimize student achievement when they understand the development and needs of their students. With a teacher’s guidance, “students must learn to think logically, communicate persuasively, achieve any non-subject matter outcomes (e.g., optimistic and realistic self-evaluation,

emotional regulation, social responsibility), and to stay in school” (Good et al., 2006, p. 413). Vygotsky’s (1978) constructivist theory suggests that students, and children alike, must learn by doing and construct their own knowledge. Furthermore, Vygotsky revealed that learning is a social process and students are only able to learn if their current knowledge is challenged, reformed, and or synthesized in some way. It is the teacher’s responsibility then to challenge the students’ current knowledge and allow them to actively construct their own knowledge while the teacher scaffolds and helps them understand new material (Vygotsky, 1978).

The reality of teaching so that all children have an opportunity to learn is overwhelming for most teachers (Darling-Hammond, 2006). In past decades, teachers had less diverse classrooms and only had to prepare a small number of students for higher order thinking and ambitious intellectual work (Darling-Hammond, 2006).

A focus on social justice is critical in this time of increased student diversity and high stakes accountability, and we consider equity consciousness and high quality teaching skills to be the vehicles through which social justice can be achieved in schools. (McKenzie & Locke, 2009, p. 33)

Addressing diversity in today’s classrooms means that teachers possess certain belief systems including

That all children (except only a very small percentage, e.g., those with profound disabilities) are capable of high levels of academic success; that all children means all, regardless of a child’s race, social class, gender, sexual orientation, learning differences, culture, language, religion, and so on; that the adults in schools are primarily responsible for student learning; that traditional school

practices may work for some students but are not working for all children.

Therefore, if we are going to eliminate the achievement gap, it requires a change in our practices. (Skrla, McKenzie, & Scheurich, 2009, pp. 82-83)

In today's classrooms, administrators, parents, and even politicians would suggest that all teachers should engage students in ambitious, higher order, meaningful activities and have a classroom that is free of behavioral disruptions (Good et al., 2006). "Teachers need not only to be able to keep order and provide useful information to students but also to be increasingly effective in enabling a diverse group of students to learn ever more complex material" (Darling-Hammond, 2006, p. 300). Today the standards for teachers are at an all-time high as the demand for powerful, effective teachers increases to prepare future citizens and workers for greater knowledge and skills they will need for a successful life (Darling-Hammond, 2006). Powerful and effective teaching should lead to students effectively representing and solving problems, communicating in various forms and languages, and becoming a representation of a great role model and good citizen (Good et al., 2006).

Given the statistics of today's typical classroom, students deserve teachers who understand their needs, understand the subject matter, have a repertoire of skills, and engage students in active learning (Budig, 2006).

In the classrooms most beginning teachers will enter, at least 35% of students live in poverty and many of them lack basic food, shelter, and health care; from 10% to 20% have identified learning differences; 15% speak a language other than English as their primary language (many more in urban settings); and about 40% are members of racial/ethnic "minority" groups, many of them recent immigrants

from countries with different educational systems and cultural traditions.

(Darling-Hammond, 2006, p. 301)

Teaching for diverse learners in diverse classrooms demands that teachers have more knowledge and pedagogical skills than ever before (Darling-Hammond, 2006).

Darling-Hammond suggested that teachers need a clear understanding of subject matter, different teaching strategies for different purposes, and an understanding of assessment and reflective practices.

Teaching is in the service of students, which creates the expectation that teachers will be able to come to understand how students learn and what various students need if they are to learn more effectively and that they will incorporate this into their teaching and curriculum construction. (Darling-Hammond, 2006, p. 303)

Paraprofessionals

Certified teachers are often not the only teachers present in today's classrooms. Many schools have support staffs that are likely to also be devoted to increasing student learning and achievement. "Paraprofessionals, formally known as teacher's aides, teacher's assistants, or teacher's helpers, are individuals who perform a variety of roles in the classroom under the supervision of the classroom teacher" (Payton, 2012, p. 29).

Paraprofessionals in the classroom are often seen as a solution for problems with diversity and teacher shortages; in both special education and traditionally underrepresented shortage areas (White, 2004) with faculty mostly represented by White females (Feistritz, 2011).

Paraprofessionals originated in the classroom decades ago, but their role began primarily as clerical help (Milner, 1998). Originally they performed clerical,

housekeeping, and monitoring duties so that teachers could spend more time on planning and lesson implementation (Moody, 1967). Years later, the role and duties of the paraprofessional shifted from clerical help to “support staff for those children who had special educational needs in the mainstream classroom” (Bignold & Barbera, 2013, p. 367). In 1953, the Ford Foundation’s study on the role of paraprofessionals caused a shift from clerical assistance to instructional assistance after gains were seen in academic achievement when paraprofessionals provided instructional assistance (Milner, 1998). Decades later, the need for paraprofessionals grew even larger with the passing of the Individuals with Disabilities Education Act (IDEA) in 1997, which required special needs students to be placed in the *least restrictive environment* by having the opportunity to be educated with their non-disabled peers and placed in the regular classroom with the assistance of a teacher’s aide (Bignold & Barbera, 2012; Milner, 1998). IDEA demands that each state abide by the regulations and policies, thus requiring the use of more paraprofessionals to offer assistance to students with special needs (Morgan et al., 2003). Laws, such as IDEA, and other reform movements have produced a growth in teaching assistants in an effort to raise academic achievement in literacy and numeracy for all students (Bedford, Jackson, & Wilson, 2008). The role of the paraprofessional has evolved even more as paraprofessionals are now seen as partners in the teaching and learning process by school administrators and leaders (Butt & Lance, 2005).

Since the inception of No Child Left Behind (NCLB), there were an estimated 600,000 paraprofessionals in U.S. classrooms (Bignold & Barbera, 2012; Giangreco, 2007; NCES, 2007), and that number has continued to rise each year. Today, most paraprofessionals assist classroom teachers with instructional support and classroom

management (Payton, 2012). Paraprofessionals are an essential component to today's classroom by providing instructional support and also decreasing the impact of teacher shortages and larger class sizes (Hawkins, 2008). As the number of paraprofessionals continues to grow, paraprofessionals will remain an increasingly significant group of support staff in schools (Bignold & Barbera, 2012).

Although there are numerous advantages to having a paraprofessional in the classroom, many paraprofessionals have had little training on the role of instructional support and are often unaware of the students' needs (Bignold & Barbera, 2012). Bignold and Barbera further stated that training paraprofessionals and identifying the needs of paraprofessionals are areas that are often under researched (Bignold & Barbera, 2012). However with the passing of NCLB, paraprofessionals were required to meet specific training if they were working in a Title I school or program. The requirements of NCLB included passing a state assessment on reading and math, completion of two years of study at a higher institution or obtaining an associate's degree (NCLB, 2001). In addition to these requirements, many organizations such as the American Federation of Teachers (AFT, 2008) suggested competency requirements for paraprofessionals: (a) content knowledge; (b) thinking skills; (c) interpersonal relations/human relations; and (d) personal qualities. These competencies are crucial "considering that the most important duty of paraprofessionals is to enhance the learning experience for students by performing administrative and instructional duties to balance and support the instructional plans and educational goals" (Payton, 2012, p. 32). Providing clear standards, competencies, and professional development, paraprofessionals who enter the teaching field can better understand how to assist in the classroom (AFT, 2008).

Although most of the supervision is left up to the classroom teacher who monitors performance and conducts on-the-job training (Bignold & Barbera, 2012), the additional requirements and clear standards provide paraprofessionals with the basic knowledge of teaching.

Given the implementation of requirements, standards, and on-the-job training, research has shown that paraprofessionals are often an untapped resource of teacher candidates for teacher education programs (Payton, 2012). Paraprofessionals enter the classroom with previous classroom experience, most often they have been exposed to professional development, and they may have more self-efficacy in their abilities to handle the duties of the classroom in comparison to beginning teachers (Payton, 2012). Genzuk (1995) also cited many reasons why paraprofessionals are ideal teacher candidates. Genzuk (1995) and White (2004) asserted that there is a larger number of diverse staff of paraprofessionals in schools so an increase in teacher candidates from underrepresented groups may be seen, which may also help avert teacher shortages of those traditionally underrepresented groups. Genzuk (1995) and White (2004) also claimed that many paraprofessionals often have the desire to be educators, which contributes to the reduction of fiscal and pedagogical concerns of teacher attrition. White also suggested that paraprofessionals are often part of the local community, which may promise higher retention rates, and they often have proven performance of their duties as a teaching assistant.

Transitioning paraprofessionals, who are already in the classroom, to certified teachers may be a difficult process, described Payton (2012). There can be many obstacles for those who wish to return to school as reported by Payton, such as family

and financial obligations, time, and commitments. Morgan et al. (2003) also revealed that many paraprofessionals often lack experience with higher educational institutes or have been away from formal education for a number of years. However, the benefits of obtaining certification can lead to higher self-confidence, development of knowledge and skills, and development of professional practices (Bignold & Barbera, 2012).

One potential way to deliver instruction to paraprofessionals and help them gain certification is through distance education. Tallent-Runnells et al. (2006) defined distance education, or online education, as any courses that are delivered in a different geographical location and uses the Internet to deliver the courses. Distance education is a cost effective way to provide instruction to students who are not in the same location (Morgan et al., 2003). As reported in Johnson and Briden (2004), Rio Salada College in Tempe, Arizona developed an online program for post-baccalaureate students to gain certification in teaching. “This is hoped to open the door for instructional aides and paraprofessionals to consider advanced placement via performance assessment, formal verification of experience, portfolio review, and examinations” (Johnson & Briden, 2004, p. 42). Using web-based instruction to give in-service educators access to higher education provides convenience and flexibility (Rakap, 2010). A research study conducted by Stricklin and Hulbert (2011) revealed that upon entry into the teacher preparation program paraprofessionals applied theory and practice more effectively than traditional route students. These researchers also noted that since paraprofessionals were already in the classroom, they essentially had a longer internship than the traditional college students who only completed a ten-week internship:

By providing longer internships, such as immersion of our teaching assistants in schools daily, coupled with online theory and methods studies, we are ensuring teacher candidates are provided opportunities to practice and implement pedagogy for a longer period of time, building confidence and ability in their quality of instructional delivery. (Stricklin & Hulbert, 2011, p. 2,828)

Without online learning, a large segment of the population would be unable to obtain the goal of teacher certification (Johnson & Briden, 2004). Darling-Hammond (2006) affirmed that teacher education programs must move further from the traditional campus and engage more closely with schools to transform practices in teacher preparation. Online learning offers the ability to study and learn while in the classrooms (Stricklin & Hulbert, 2011). Darling-Hammond stated that a change from traditional teacher preparation programs must include the “extensive and intensely supervised clinical work tightly integrated with course work that allows candidates to learn from expert practices in schools that serve diverse students” (Darling-Hammond, 2006, p. 306). Higher education institutions must design programs that transform settings where in-service teachers can learn to teach before they are actual teachers (Darling-Hammond, 2006).

Online Education

Over a hundred years ago the U.S. was on the verge of what was thought to be a technological revolution by using the modern postal system as a way for colleges to provide correspondence courses that would reach a multitude of students in different geographical locations providing individualized instruction (Carr, 2012). Although that revolution proved ineffective, online learning is a new revolution that is reinventing

education and could possibly change the world as we know it (Carr, 2012; Rakap, 2010). Furthermore, Carr asserted that traditional university degrees will become outdated as students embrace a new form of lifelong learning that will better prepare them for the 21st century.

Currently almost 100% of public institutions report to offer some form of online instruction, or they report that they are in the process of creating an online program (Carr, 2012; Major, 2010). The numbers of students enrolled in online universities are growing each day. Carr reported the current enrollment totals for six of the primary online institutes: (a) Coursera- 1,500,000; (b) Udacity- 739,000; (c) University of Phoenix- 346,000; (d) edX- 155,000; (e) Open Learning Institute- 51,000, and (f) The Open University- 244,000. Public and private universities, as well as online institutes, provide opportunities for distance education that give students from various geographical locations access to education (Carr, 2012). Carr also asserted that online learning or distance education offers opportunities for learning for those students who are in the middle of their career and cannot return to college. Online education gives many professionals the opportunity to upgrade their knowledge and skills without having to travel to higher education institutions (Rakap, 2010).

“In 2000-2001, 90% of public two-year and 89% of public four-year institutions offered distance education courses” (Tallent-Runnels et al., 2006, p. 93). In 2002 the estimated enrollment for online courses was almost 3,000,000 with nearly 200 colleges offering online courses (Tallent-Runnels et al., 2006). Of that figure, Tallent-Runnels et al. reported that 82% were at the undergraduate level. Since then, with the rapid

acceleration of technology, the demand for distance education has grown even larger and has become an alternate mode of teaching and learning (Tallent-Runnels et al., 2006).

“The World Wide Web continues to be a practical medium for delivering trainings, in-service education programs and undergraduate and graduate level courses, and learning” (Rakap, 2006, p. 114). Universities have the ability to explore, present, and encourage this format of learning (Caywood & Duckett, 2003). Caywood and Duckett stated that online education is the future of teaching by increasing the availability of higher education so that all interested can *plug* in to learning. Online education provides easy access and is an effective means for reaching students in rural areas or students that have non-traditional working schedules (Caywood & Duckett, 2003; Samruayruen, 2010). Often students welcome online courses because they provide convenience and autonomy (Tallent-Runnels et al., 2006). Research has shown that there is often no significant difference in academic achievement in online courses versus traditional courses (Caywood & Duckett, 2003), in fact, some studies show that online students outperform traditional students in academic achievement (Tallent-Runnels et al., 2006).

Considering the field of education, online education gives teacher candidates high quality learning experiences and more time in the classrooms for a more comprehensive, broad-based learning environment (Samruayruen, 2010). “Our teaching institutions should be encouraged to help future teachers practice learning and teaching with the use of technology, including the use of the web” (Caywood & Duckett, 2003, p. 99). Future teachers need to be more familiar with available technology and the use of the Internet (Caywood & Duckett, 2003). Online education remains a new frontier in education (Carr,

2012; Tallent-Runnels et al., 2006) and will provide more opportunities for more people, especially in the area of teacher education (Caywood & Duckett, 2003).

Summary

Since the beginning of formal education there has been much attention and devotion on how to educate the children of our communities, our states, and our nation. Horace Mann, known as the father of public education, believed that formal education should focus on developing good character while also learning the basics of reading, writing, and arithmetic (Mondale, 2002). The guiding questions of all schools are what do children need to know? How will it be taught so that learning can occur? Teachers are guided by standards of what each student should learn each year but the focus should also be on how teachers are implementing the standards so that students show gains in academic achievement.

To ensure every child receives an appropriate education we must look at how teachers are prepared for the career of teaching. With a multitude of teacher education programs across our nation, there is little consensus on the best practices for developing effective teachers (Cuddapah & Burtin, 2012). However, each year beginning teachers enter the workforce through the completion of a teacher education program or through alternate routes of certification. These beginning teachers often face many challenges and struggle with the feelings of being unprepared for the complexity of teaching (Cuddapah & Burtin, 2012). The hardships that beginning teachers face often leads to burnout, teacher attrition, and may create teacher shortages in critical needs areas (Budig, 2006; Ingersoll, 2011; Payton, 2012). In an effort to combat these negative consequences many schools offer induction and mentorship programs that provide assistance and support for

beginning teachers to help them become successful (Roberson & Roberson, 2009; Stanulis et al., 2007). Although providing induction programs and mentoring can be a costly and timely effort, these programs may be critical components of a beginning teacher's career.

A suggested remedy for the issues that plague beginning teachers and school districts is to help transition teaching assistants to become certified teachers. Teaching assistants, or paraprofessionals, are often seen as great candidates for certified classroom teachers because they are already in the schools, have experience in the classroom, have developed some pedagogical skills, and often have been exposed to various types of professional development (Payton, 2012). One way to help transition these teaching assistants, without leaving their classroom, is through online learning (Carr, 2012; Rakap, 2010). With online learning, or distance education, teaching assistants can learn the necessary knowledge and skills needed while also practicing pedagogy in their current classroom. As research reveals the need for longer internships for beginning teachers (Addison, 2012; Stricklin & Hulbert, 2012), teaching assistants may have the opportunity for a lengthier internship while also developing their knowledge and skills simultaneously through online learning. Transitioning teaching assistants to certified faculty is a movement that offers a solution to many of the issues that beginning teachers and administrators face today. It may be a means for producing higher academic gains in student achievement as the teaching assistants transition to a beginning teacher but with experience, knowledge of best practices, and devotion to the field of education.

CHAPTER III

METHODOLOGY

Overview

In this comparative study, concurrent data collection procedures were conducted by the researcher. First, the researcher compared the scores of online TAP (teaching assistant program) teacher candidates and traditional face to face teacher candidates on the Praxis II: Professional Knowledge assessment to see if there was a significant difference in test scores among the two groups.

The purpose of [the Praxis II] test is to assess a new teacher's knowledge and understanding of educational practices foundational to beginning a career as a professional educator. The test content assesses key indicators of the beginning educator's knowledge of topics such as human development, learning processes, instructional processes, diverse learners, educational psychology, and professional issues. (ETS, 2013)

National test scores can range from 100-200 with a minimum qualifying score of 160 for licensure in Mississippi. "Individuals entering the teaching profession take the Praxis II tests as part of the teacher licensing and certification process required by many states. Some professional associations and organizations require Praxis II tests as a criterion for professional licensing decisions" (ETS, 2013). The Mississippi Department of Education (MDE) requires the Praxis II test for licensure "to assist all Mississippi public school educators and prospective educators to obtain and maintain standard certification and licensure and to implement licensure guidelines set by the Certification Commission and State Board of Education" (MDE, 2013). In addition to qualifying

Praxis II test scores, licensure or “certification can be obtained through traditional teacher and administrator education programs, alternative teacher and administrator certification programs, or reciprocity” (MDE, 2013).

In partial fulfillment of gaining licensure in Mississippi, The University of Southern Mississippi teacher candidates take the Praxis II assessment during their final semester of their education program. All of these teacher candidates’ Praxis II scores were reported to The University of Southern Mississippi’s database and recorded in SOAR (Southern’s Online Accessible Records). This archival data was collected on both, TAP and traditional groups of teacher candidates and was accessed by the researcher who is also faculty at The University of Southern Mississippi (USM).

The second part of the research study involved comparing perceptions of self-efficacy among the two groups of teacher candidates. Using a teacher self-efficacy survey, the researcher compared teacher candidates’ perceptions of self-efficacy between TAP teacher candidates and traditional route teacher candidates. This survey attempted to assess the perceptions of their teacher self-efficacy. Teacher self-efficacy can be defined as a teacher’s judgment about whether he or she is capable of the actions that will positively impact student learning (Mitchell, 2011). “Teacher’s beliefs in their personal self-efficacy to motivate and promote learning affects the types of learning environments they create and the level of academic progress their students achieve” (Bandura, 1993, p. 117). The self-efficacy survey consisted of a 15-item questionnaire that measured the perceptions of teacher candidates’ self-efficacy in the areas of lesson planning, professional knowledge, classroom management, instructional strategies, assessment, and

reflection. Responses to the survey were placed under five categories with 1= *strongly disagree*, 2=*disagree*, 3=*neutral*, 4=*agree*, 5=*strongly agree*.

Traditional teacher candidates are required to complete internships in two placements; an upper elementary experience and a lower elementary experience. Before, during, and after these internship experiences, the traditional teacher candidates must attend several Professional Development Seminar (PDS). The researcher was given permission to distribute the surveys to the traditional teacher candidates at the end of this seminar. The surveys were distributed at the conclusion of the seminar and teacher candidates completed the surveys anonymously and voluntarily. The surveys were collected in a marked box at the exit door for additional anonymity. After all surveys were collected, the survey information was entered in SPSS software and then the surveys were destroyed and discarded.

To gain insight on the second group, the online TAP teacher candidates, surveys were distributed using the internet. All online TAP teacher candidates were sent an email asking for voluntary completion of the self-efficacy survey. So that these students could remain anonymous as well, the students were instructed to follow a link to SurveyMonkey, an online survey host. These electronic surveys were also distributed during the same midpoint in the semester, or after completion of their initial placement.

Research Design

In this quantitative study, the researcher compared Praxis II: Professional Knowledge test scores of the two groups of teacher candidates. The researcher, using a Likert-type survey, also measured the perceptions of self-efficacy of each group. The independent variables in this study included teaching assistant program (TAP) teacher

candidates and traditional route teacher candidates. The dependent variables in this study were the Praxis II test scores and self-efficacy surveys.

The following hypotheses were investigated in this study:

H₁: There is a statistically significant difference between online TAP (Teaching Assistants Program) and traditional face-to-face students' Praxis II: Professional Knowledge test scores.

H₂: There is a statistically significant difference in teachers' perceptions of self-efficacy between TAP teacher candidates and traditional route teacher candidates as identified by the self-efficacy survey completed during their internship at The University of Southern Mississippi.

Participants

For analysis of the Praxis II scores, the participants in this study included 60 TAP online teacher candidates and 564 traditional face-to-face teacher candidates. All TAP teacher candidates were employed in a public school setting working as full-time teaching assistants in an elementary school. They completed all degree program requirements via online methods and had no on-campus interaction. The traditional teacher candidates completed all degree program requirements on the university campus via face-to-face courses. In addition to attending face-to-face courses, these traditional students were assigned to an elementary school, or lab setting, spending approximately six hours per week teaching, tutoring, and assisting elementary school students.

A selection of the participants that completed their teacher internship during the semester of fall 2013, participated in the self-efficacy survey. Participants for the survey included nine TAP and 76 traditional teacher candidates. Surveys were distributed to both

groups at the completion of their initial placement, or midpoint, in their teacher internship. Traditional teacher candidates were invited to participate in the self-efficacy survey available at their professional development seminar (PDS) while TAP students' surveys were distributed via email using SurveyMonkey. Completion of the surveys remained anonymous.

Instrumentation

In addition to analyzing the Praxis II test scores, the researcher employed a self-efficacy survey and measured teacher candidates' perceptions or beliefs to motivate and promote student learning. As research has shown, "there is a marked difference between possessing knowledge and skills and being able to use them well under taxing conditions" (Bandura, 1993, p. 119). The instrument used in this research study was the Teacher Education Preparation Program Exit Survey (Appendix A). Although the author is unknown, permission to use this instrument was requested and granted by Dr. Debbie Stoulig, coordinator of The National Council for Accreditation of Teacher Education (NCATE) Assessment at The University of Southern Mississippi (Appendix B). This survey was developed for research purposes to provide insight on the teacher education programs, as well as guide instructional experiences for teacher education candidates attending USM.

As stated by Bandura (1993) teachers with low self-efficacy may show weak commitment to teaching and academic matters while teachers that have a high sense of self-efficacy devote more time to academic matters and create mastery experiences for their students. The survey used in this research study consisted of a 15-item questionnaire that measured the perceptions of teacher candidates' self-efficacy in the areas of content

knowledge, lesson planning, providing anticipatory sets, using reflection and self-evaluation, classroom management, managing student behavior, attending to instructional needs, providing multiple strategies, handling classroom problems, managing time, implementing standards, using effective assessments, teacher effectiveness, pace, and methodology. Responses to the survey were placed under five categories with 1= *strongly disagree*, 2=*disagree*, 3=*neutral*, 4=*agree*, 5=*strongly agree*.

Teacher candidates responded to each of the 15 items using the five categories. Each teacher candidates' responses were recorded and a mean score was computed for each of the 15 items. The mean scores from each of the two groups were analyzed and compared. The mean score reflected the teacher candidate's perception of his/her own self-efficacy. Scores above the mean indicate teacher candidates' higher confidence in their own teacher self-efficacy while scores below the mean indicate a lower confidence level in teacher self-efficacy.

A reliability analysis was conducted to assess the internal consistency of the survey items. Cronbach's alpha, internal consistency coefficient, that is greater than .70 is considered acceptable (Cronbach, 1950). This self-efficacy survey had a Cronbach alpha of .85, which revealed good internal consistency measures.

Procedures

The collection of data for this research study used multiple sources including SOAR, PDS, and SurveyMonkey. Collection of the data began upon successful completion of the proposal defense and USM's Institutional Review Board (IRB) approval (Appendix C). To access the teacher candidates' Praxis II scores, the researcher collected scores for both traditional route teacher candidates and TAP teacher candidates

from 2009-2013 using SOAR. All teacher candidates' Praxis II scores were reported to The University of Southern Mississippi's database and recorded in SOAR (Southern's Online Accessible Records). This archival data was collected on both, TAP and traditional groups of teacher candidates, and was accessed by the researcher who is also faculty at The University of Southern Mississippi (USM).

Data collection for TAP candidates' self-efficacy survey involved the use of an online survey host. All online TAP teacher candidates were sent an email asking for voluntary completion of the self-efficacy survey. So that these students could remain anonymous, the students were instructed to follow a link to SurveyMonkey. These electronic surveys were also distributed during the same midpoint in the semester or after completion of their initial placement.

Limitations

Subjects in this research study were limited to only those teacher candidates who were students at USM completing either a traditional, face-to-face program on campus or the online TAP (teacher assistant program). Responses were limited to those agreeing to participate in the study.

Data Analysis

The data collected from SOAR and the survey was analyzed using SPSS statistical software. Two two-tailed simple *t*-tests were conducted to determine a statistically significant difference in Praxis II scores and to determine a statistically significant difference in perceptions of teacher self-efficacy. The researcher analyzed the results to determine if there were significant differences in Praxis II scores and self-efficacy among the groups. The probability level, or alpha, was set at .05.

CHAPTER IV

ANALYSIS OF DATA

Introduction

This chapter of the research study presents the analysis of data collected during this study. Teacher education programs for today's classrooms need to prepare teachers to develop values, skills, and knowledge that are universally relevant across different cultures and communities (Wong et al., 2012). The goal of this study was to compare The University of Southern Mississippi teacher candidates, who completed the online teaching assistant program, and traditional teacher candidates, who completed the face-to-face program on campus, to determine if there were significant differences in professional knowledge and skills, as well as significant differences in the two groups' perceptions of teacher self-efficacy.

The first data set included Praxis II scores that were collected for both groups of teacher candidates enrolled at The University of Southern Mississippi obtaining a degree in elementary education from 2009 to 2013. The Praxis II test assesses a beginning teacher's knowledge of human development, learning processes, instructional processes, diverse learners, educational psychology, and professional issues (ETS, 2013).

Approximately 624 Praxis II scores, inclusive of both groups, were collected, compared, and analyzed. These scores help reveal a new teacher's knowledge and understanding of educational practices foundational to beginning a career as a professional educator (ETS, 2013).

Determining if both sets of teacher candidates had the necessary knowledge and skills needed to effectively teach all children was an important aspect of this research study; however, determining if both groups had strong perceptions of teacher self-

efficacy was also a critical component of research. In addition to the analysis of the Praxis II test scores, the researcher employed another measure to gain more insight on the two groups of teacher candidates. The second part of the research study involved comparing perceptions of teacher self-efficacy among the two groups of teacher candidates. Using a teacher self-efficacy survey, the researcher compared teacher candidates' perceptions of self-efficacy between TAP teacher candidates and traditional route teacher candidates. Teacher self-efficacy can be defined as a teacher's judgment about whether he or she is capable of the actions that will positively impact student learning (Mitchell, 2011). The self-efficacy survey consisted of a 15-item questionnaire that measured the perceptions of teacher candidates' self-efficacy in the areas of lesson planning, professional knowledge, classroom management, instructional strategies, assessment, and reflection. Responses to the survey were placed under five categories with 1= strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

One hundred twenty-five self-efficacy surveys were distributed at the Professional Development Seminar (PDS) in fall 2013. The researcher collected 76 completed surveys from traditional teacher candidates at the conclusion of the seminar.

Thirteen self-efficacy surveys were distributed to the online TAP teacher candidates via SurveyMonkey. Nine completed surveys were collected from these candidates using SurveyMonkey.

All data sets, Praxis II and self-efficacy surveys, were analyzed using SPSS software. The data sets were analyzed using two two-tailed *t* tests to address the proposed hypotheses. The Praxis II data set included 60 TAP online teacher candidates and 564

traditional face-to-face teacher candidates. The self-efficacy data set included nine TAP and traditional 76 teacher candidates.

Descriptive

The Praxis II data set included TAP (n=60) online teacher candidates and traditional (n=564) face-to-face teacher candidates. As shown in Table 1, the mean of scores for TAP was 166.92 with a standard deviation of 9.98. The mean of scores for traditional teacher candidates was 171.83 with a standard deviation of 10.44. National test scores on the Praxis II can range from 100-200 with a minimum qualifying score of 160 for licensure in Mississippi (ETS, 2013).

Table 1

Praxis II Test Scores

	group	n	Mean	Std. Deviation	Std. Error Mean
Praxis II	TAP	60	166.92	9.98	1.29
	EE	564	171.83	10.44	.44

Note. Range of scores 100-200; 160 for Mississippi licensure

The self-efficacy data set included TAP (n=9) online teacher candidates and traditional (n=76) face-to-face teacher candidates. The set of participants in this part of the research study were limited to only those candidates that were in their teacher internship during the fall 2013. At the time of survey distribution the teacher candidates had completed the first half of their internship, or were midpoint, in the completion of the internship. The self-efficacy survey consisted of a 15-item questionnaire that measured the perceptions of teacher candidates' self-efficacy. Responses to the survey were placed under five categories with 1= strongly disagree, 2=disagree, 3=neutral, 4=agree,

5=strongly agree. As shown in Table 2, the mean score for TAP was 4.20 with a standard deviation of .34. The mean score for traditional teacher candidates was 4.31 with a standard deviation of .50.

Table 2

Self-Efficacy Survey

	group	n	Mean	Std. Deviation	Std. Error Mean
Survey	TAP	9	4.20	.34	.11
	EE	76	4.31	.50	.06

Note. 1= strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

The survey attempted to measure the perceptions of teacher candidates' self-efficacy in the areas of content knowledge, lesson planning, providing anticipatory sets, using reflection and self-evaluation, classroom management, managing student behavior, attending to instructional needs, providing multiple strategies, handling classroom problems, managing time, implementing standards, using effective assessments, teacher effectiveness, pace, and methodology. Using the responses from the five categories, 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree, Table 3 reveals a mean range from 3.33 to 4.67 on the various items of the survey for TAP teacher candidates. According to Table 4, the mean scores for traditional teacher candidates range from 3.84 to 4.66 for items on the survey.

Table 3

TAP Self-efficacy Survey (n=9)

	Mean	Std. Deviation
Q1: Content knowledge	4.56	.53
Q2: Lesson planning	4.33	1.00
Q3: Anticipatory set	4.67	.50
Q4: Self-evaluation	3.78	1.10
Q5: Classroom management	4.33	.50
Q6: Student behavior	3.67	1.32
Q7: Instructional needs	4.67	.50
Q8: Strategies	4.44	.53
Q9: Classroom problems	4.33	.50
Q10: Time	3.33	1.00
Q11: Standards	4.33	1.00
Q12: Assessment	4.22	.67
Q13: Effectiveness	4.11	.33
Q14: Pace	4.11	.60
Q15: Methodology	4.11	.60
total	4.20	.34

Table 4

Traditional Candidates' Self-efficacy Survey (n=76)

	Mean	Std. Deviation
Q1: Content knowledge	4.43	.70
Q2: Lesson plans	4.66	.79
Q3: Anticipatory set	4.55	.60
Q4: Self-evaluation	4.28	.90
Q5: Classroom management	4.41	.79
Q6: Student behavior	4.17	1.04
Q7: Instructional needs	4.09	1.11
Q8: Strategies	4.13	.91
Q9: Classroom problems	4.46	.62
Q10: Time	3.84	1.08
Q11: Standards	4.50	.62
Q12: Assessment	4.11	1.03
Q13: Effectiveness	4.42	.62
Q14: Pace	4.36	.76
Q15: Methodology	4.27	.95
total	4.31	.50

Statistical

In this study, the researcher wanted to determine if there were significant differences in Praxis II scores and self-efficacy among the two groups, TAP and traditional teacher candidates.

The following hypotheses were investigated in this study:

H₁: There is a statistically significant difference between online TAP (Teaching Assistants Program) and traditional face-to-face students' Praxis II: Professional Knowledge test scores.

H₂: There is a statistically significant difference in teachers' perceptions of self-efficacy between TAP teacher candidates and traditional route teacher candidates as identified by the self-efficacy survey completed during their internship at The University of Southern Mississippi.

Two two-tailed *t* tests were computed using SPSS statistical software. For the first data set, H₁: There is a statistically significant difference between online TAP (Teaching Assistants Program) and traditional face-to-face students' Praxis II: Professional Knowledge test scores, the *t* test was used to establish whether the two means of Praxis II scores for TAP and traditional teacher candidates were significantly different. Hypothesis 1 was accepted [$t(622) = -3.49, p = .001$].

Therefore, the results of this research indicate there is a difference in Praxis II tests scores among TAP and traditional teacher candidates.

As shown in Table 1, the mean of scores for TAP was 166.92 with a standard deviation of 9.98. The mean of scores for traditional teacher candidates was 171.83 with a standard deviation of 10.44. Since the mean score for traditional teacher candidates is higher, we can conclude that traditional teacher candidates score higher, as a group, than TAP teacher candidates. This may indicate that traditional teacher candidates exit the teacher education program at USM with more knowledge and skills needed for the

classroom while TAP teacher candidates may lack adequate knowledge and skills needed for the classroom.

For statistical analysis of perceptions of teacher self-efficacy, H_2 : There is a statistically significant difference in teachers' perceptions of self-efficacy between TAP teacher candidates and traditional route teacher candidates, a simple t -test was again employed to determine a significant difference among the two groups in their teacher self-efficacy in the areas of lesson planning, professional knowledge, classroom management, instructional strategies, assessment, and reflection. Hypothesis 2 was rejected [$t(83) = -.647, p = .52$].

Therefore, the results of this research indicate there is not a significant difference in self-efficacy among the two groups of teacher candidates.

The overall findings of this research study show that while there was a significant difference in teacher candidates' professional knowledge based on their Praxis II test scores, there is no significant difference in their confidence levels or self-efficacy for the teaching field. The results of this research indicate that traditional teacher candidates outperform, or possess more knowledge and skills, than TAP teacher candidates on the Praxis II test.

Ancillary Findings

Based on the researcher's personal observations while working with the two groups of teacher candidates over the past five years, the researcher wanted more evidence and/or explanation on the findings of the statistical difference of the Praxis II scores. Although each program is unique with advantages and disadvantages of the

respective program, a significant difference among scores is somewhat alarming to an instructor in both programs.

Advantages that the TAP teacher candidates have include a minimum of two years internship while progressing through the online program at USM. These TAP teacher candidates have more exposure to many day-to-day classroom issues including subject area content knowledge of the classroom they are in, observation of daily lesson planning and teaching, classroom management, managing student behavior, handling classroom problems, managing time and pace, observing teacher effectiveness and sometimes non-effectiveness, and oftentimes attending to instructional needs of the students in the classroom. A study conducted by Stricklin and Hulbert (2011) revealed that upon entry into the teacher education program paraprofessionals applied theory and practice more effectively than traditional route students. These researchers also noted that since paraprofessionals were already in the classroom, they thereby had a longer internship than the traditional route students.

A disadvantage that traditional students face is that they are limited in their lab experiences, spending only approximately six hours per week in a classroom. However, advantages that traditional teacher candidates have include more time in the college classroom with an instructor learning theories before applying them in real-life settings. They also have more time in class engaging in lecture and demonstrations that are often hard to convey to online students, who have a more limited connection with their online instructors.

To gain a starting point for all teacher candidates, the researcher accessed the teacher candidates' records in SOAR again, this time for ACT scores and/or Praxis I

scores. “The ACT® college readiness assessment is a curriculum and standards-based educational and career planning tool that assesses students' academic readiness for college (ACT, 2014).

The Praxis I® Pre-Professional Skills Tests (PPST®) measure basic skills in reading, writing and mathematics and include multiple-choice questions and an essay question on the Writing test. The tests are designed to evaluate whether you have the academic skills needed to prepare for a career in education. Colleges and universities may use the Praxis I tests to evaluate individuals for entry into teacher education programs. The assessments are generally taken early in your college career. Many states also require Praxis I scores as part of their teacher licensing process. (ETS, 2013)

Entry into the teacher education program at USM requires candidates to take the Praxis I and earn passing scores in reading, math, and writing subtests. However, students who score a 21 or higher on the ACT, with no subscore less than 18, are exempt from this requirement. Based upon this information, the researcher collected available scores to determine if there was a significant difference in the two groups. Traditional (n=498) teacher candidates' ACT and Praxis I scores were collected along with TAP (n=47) teacher candidates' scores.

According to Table 5, 207 traditional teacher candidates, or 41.6%, were exempt from taking the Praxis I, and entry was based upon their 21 or higher ACT score. The remaining 291 traditional teacher candidates, or 58.4%, were required to take the Praxis I test upon entry into the teacher education program.

For TAP teacher candidates, only 11 students, or 23.4%, were exempt from the requirement based on their ACT scores. The remaining 36 teacher candidates, or 76.6%, were required to take the Praxis I. According to Table 5, there is a significant difference in the number of students that were required to take the Praxis I among the two groups of teacher candidates, $X^2(N=545, df=1)=5.903, p=.015$, showing that more TAP students were required to take the Praxis I in comparison to the traditional route teacher candidates. A conclusion of these results may indicate that traditional teacher candidates begin the teacher education program at a more advanced level than the TAP teacher candidates, thereby explaining the significant difference at the conclusion of the teacher education program.

Table 5

ACT & Praxis I Descriptive Statistics

		group		Total	
		EE	TAP		
praxis	exempt	Count	207	11	218
		% within group	41.6%	23.4%	40.0%
	required	Count	291	36	327
		% within group	58.4%	76.6%	60.0%
Total	Count	498	47	545	
	% within group	100.0%	100.0%	100.0%	

CHAPTER V

DISCUSSION

Summary

This chapter presents a summary of the research study. Addressed in this chapter include the purpose of this research study, the guiding research questions and a discussion of the results. Implications for future research and recommendations for policy are also identified.

Since the beginning of our nation, education has been a source of concern for families, communities, and policymakers (Mondale, 2002). Research has shown that the most significant factor for improving education, among all variables present, is the teacher who has largest influence on student achievement (Darling-Hammond, 2006; Delors, 1998; Gamage & Walsh, 2003; Good et al., 2006; Grodsky & Gamoran, 2003). Gendall (2001) and Lingam (2010) agreed that the professional competence of teachers depend on the quality of the teacher education program. They suggest the coursework should be relevant and should align with the responsibilities of teachers inside and outside of the classroom. To aid in the development of the competent teacher, teacher education programs must enable candidates to gain knowledge and skills needed to effectively teach all children (Cochran-Smith, 2006).

Cuddapah and Burtin (2012) claimed we have an ethical responsibility to prepare teachers and give them adequate time to develop pedagogical experiences, especially in challenging schools so that teachers can promote academic achievement for all students. Given the significance of teacher knowledge, as well as student progress, teacher

education programs must continue to be a starting point for educational reform (Kleickmann et al., 2013).

The purpose of this study was to compare The University of Southern Mississippi elementary education online and traditional route programs to determine if there was a significant difference in professional knowledge and skills using Praxis II test scores. The participants in this study included 60 TAP online teacher candidates and 564 traditional face-to-face teacher candidates. This study also compared the two groups' perceptions of teacher self-efficacy. A selection of the participants that completed their teacher internship during the fall 2013, participated in the self-efficacy survey. Participants for the survey included nine TAP and 76 traditional teacher candidates. The instrument used in this part of the research study was the Teacher Education Preparation Program Exit Survey (Appendix A).

Conclusion and Discussion

The following hypotheses were investigated in this study:

H₁: There is a statistically significant difference between online TAP (Teaching Assistants Program) and traditional face-to-face students' Praxis II: Professional Knowledge test scores.

H₂: There is a statistically significant difference in teachers' perceptions of self-efficacy between TAP teacher candidates and traditional route teacher candidates as identified by the self-efficacy survey completed during their internship at The University of Southern Mississippi.

First, the scores of both TAP and traditional teacher candidates were compared. A two-tailed *t* test was computed using SPSS statistical software. For H₁, the *t* test was used

to establish whether the two means of Praxis II scores for TAP and traditional teacher candidates were significantly different. These scores help reveal a new teacher's knowledge and understanding of educational practices foundational to beginning a career as a professional educator (ETS, 2013).

The results of this research indicate there is a difference in Praxis II tests scores among TAP and traditional teacher candidates. According to the first Table, the mean score for traditional teacher candidates is higher, revealing that traditional teacher candidates scored higher, as a group, than TAP teacher candidates.

Next, a comparison of the self-efficacy survey data was analyzed to determine if there was a significant difference in the teacher candidates' perceptions of teacher self-efficacy. Teacher self-efficacy can be defined as a teacher's judgment about whether he or she is capable of the actions that will positively impact student learning (Mitchell, 2011). "Teacher's beliefs in their personal self-efficacy to motivate and promote learning affects the types of learning environments they create and the level of academic progress their students achieve" (Bandura, 1993, p. 117).

For statistical analysis of the self-efficacy, H_2 , a simple t -test was again employed to determine if there was a significant difference among the two groups in their self-efficacy for the areas of lesson planning, professional knowledge, classroom management, instructional strategies, assessment, and reflection. Therefore, the results of this research indicate there is not a significant difference in teacher self-efficacy among the two groups of teacher candidates.

The overall findings of this research study show that while there was a significant difference in teacher candidates' professional knowledge based on their Praxis II test

scores, there was no significant difference in perceptions of teacher self-efficacy. While both groups have similar perceptions of self-efficacy, the traditional teacher candidates outperformed TAP on the Praxis II: Professional Knowledge and Skills test. The two programs at USM, online and traditional education program, revealed a statistical difference in the amount of knowledge and skills students gain depending on their respective program. As research shows, all programs should enable candidates to have the knowledge and skills needed to be successful. As identified by Wong et al. (2012) there are six factors that should be present in all teacher education programs: (a) student learning and the development of how students learn, (b) lesson planning or how to develop the scope and sequence of goals and objectives for the days, weeks, and year, (c) instructional support and when to facilitate and scaffold so that students can create their own understanding, (d) accommodating diversity and creating lessons that offer differentiated activities to meet the needs of each student, (e) classroom management, and (f) care and concern for all students. With these factors in mind, the challenge of preparing outstanding teachers remains an issue for all teacher education programs, as well as policymakers (Wong et al., 2012).

To aid in the development of the competent teacher, teacher education programs must enable candidates to gain knowledge and skills needed to effectively teach all children (Cochran-Smith, 2006). Scannell (1999) identified the six most important factors in teacher education programs: (a) examples of pedagogy that are present in class and in field experiences; (b) theory is interwoven with practice; (c) more experiences and longer periods of time in field experiences; (e) a strong connection is made with schools and the university; and (f) instruction and assessment are comprehensive.

Cuddapah and Burtin (2012) claimed we have an ethical responsibility to prepare teachers and give them adequate time to develop pedagogical experiences, especially in challenging schools so that teachers can promote academic achievement for all students. Lingam (2012) stated that teacher preparation programs should serve as the first phase of professional development since many teachers often do not have the opportunity for in-service professional development after completing most programs.

Looking at the results from the two hypotheses, one could conclude that the traditional teacher education program with on-campus interactions, face-to-face classrooms, and a limited amount of lab settings produce a more qualified beginning teacher. Results show that this group has the same amount of teacher self-efficacy but possesses a greater amount of knowledge and skills, thereby making them more qualified teachers. However, a different conclusion could be made after reviewing prior data.

Although it was shown that the traditional teacher candidates outperformed the TAP students on the Praxis II test, it should be noted that in the ancillary findings of this study that there may be an underlying cause to the significant difference of Praxis II scores. Entry into the teacher education program at USM requires candidates to take the Praxis I and earn passing scores in reading, math, and writing subtests. However, students who score a 21 or higher on the ACT, with no subscore less than 18, are exempt from this requirement. Traditional (n=498) teacher candidates' ACT and Praxis I scores were collected along with TAP (n=47) teacher candidates' scores. This data set revealed that more traditional teacher candidates, or 41.6%, were exempt from taking the Praxis I entrance exam based upon their 21 or higher ACT score. For TAP students, only 23.4% were exempt from the requirement based on their ACT scores. These findings suggest

that traditional teacher candidates possibly enter the program at a more advanced level or possibly more prepared than the TAP teacher candidates.

Limitations

Subjects in this research study were limited to only those teacher candidates who were students at USM completing either a traditional, face-to-face program or the online teacher assistant program (TAP). Responses were limited to those agreeing to participate in the study.

Importance of Study for Educational Leadership

Public education today is a product of reform and revisions that have occurred over the past century (Mondale, 2002). In each era of time, visionary leaders, such as Horace Mann, John Dewey, and Deborah Meier, have taken the lead and transformed the educational system to what it has become today (Mondale, 2002). The role of leadership in education involves helping others to grow and develop to their utmost potential, students and teachers alike. By means of this leadership, leaders have focused on guiding the talents and energies of teachers, students, and parents toward a common goal; promoting academic success for each individual student (Dalal & Rani, 2013).

Today's educational leaders must operate with the most important concern for the student. From that perspective, educational leaders must work to improve educational systems that provide academic success for all. As stated previously, teachers are the single most important factor for improving education (Darling-Hammond, 2006; Delors, 1998; Gamage & Walsh, 2003; Good et al., 2006; Grodsky & Gamoran, 2003). Therefore, nurturing and developing teachers is a fundamental component of educational leadership in today's schools.

The teacher's role in creating academic gains for each student, school, and district is colossal. Past research has revealed that there is a strong correlation between leadership, teaching, and student achievement. Dalal and Rani (2013) suggested that nearly 60% of a school's impact on student achievement is attributable to leadership and teacher effectiveness, with principals accounting for 25% of a school's total impact on achievement. Through educational leadership, a vision for academic success becomes a common goal. This vision often becomes a starting point for reform beginning with the most influential factor, the teacher.

Educational leadership in today's schools is defined by the strategic plans and amount of support administrators provide to the teachers of their school. At the beginning of each school year, administrators are faced with the reality of novice first-year teachers entering the classrooms. Although qualified, these inexperienced teachers face the same responsibilities as veteran teachers. Challenges that all teachers may face include management of students, behaviors, intellectual engagement, materials, time, etc.; however, inexperienced teachers are often overwhelmed with these set of challenges. As the leader of the school, administrators must address this reality and provide solutions to these challenges.

The first step in providing educational leadership is by addressing the issues that plague these inexperienced teachers. Strategies that counteract this inexperience include providing support for the new teachers while introducing them to the profession of teaching. Other strategies include limiting new teachers to teach only one subject so they can refine their skills, assigning them to content areas that they know best, assigning less extracurricular activities, providing mentors within the same area/grade level, and

providing opportunities to observe more experienced teaching. However, as this research study reveals, using online education to transition our current teaching assistants to teacher certification may be a strategy that helps develop beginning teachers that are knowledgeable and skillful but also have experience in the classroom.

Recommendations for Practice

Research has shown that paraprofessionals are often an untapped resource of teacher candidates for teacher education programs (Payton, 2012). As the number of paraprofessionals continues to grow, paraprofessionals will remain an increasingly significant group of support staff in schools (Bignold & Barbera, 2012). A recommendation for practice is to continue to help transition these paraprofessionals, or teaching assistants, to become certified teachers as they are already in the schools, have experience in the classroom, have developed some pedagogical skills, and often have been exposed to various types of professional development (Payton, 2012).

Transitioning paraprofessionals may help avert the challenges that many new teachers face. Often beginning teachers have problems shifting from theory to practice. In spite of the program from which new teachers came, new teachers will face a multitude of challenges and many of those challenges can only be averted by gaining more experience as well as learning on the job (Wong et al., 2012). Unlike paraprofessionals, many new teacher candidates have limited experience in the classroom. Surveys of beginning teachers revealed that they encountered problems in the following areas including classroom discipline, dealing with individual differences, motivating students, relations with parents, organizations of class work, assessing student work, and

insufficient materials and supplies (Veenman, 1984), all of which may be experiences paraprofessionals have encountered.

The challenges that beginning teachers face, explained by Gavish and Friedman (2010), can be due to the absence of organizational efforts to orient them, as well as defects in teacher training programs. Wong et al. (2012) suggested that one challenge is to understand the relationship between pedagogical strategies and theories of learning. Other challenges that new teachers face include a feeling of professional incompetence, feelings of failure, and a low self-efficacy that often leads to disillusionment and ambivalence towards their chosen profession (Cuddapah & Burtin, 2012; Gavish & Friedman, 2010). These new teachers have few points of reference for how to fulfill their role as a teacher, effectively be responsible for their own students, judge their performance, and make realistic assessments of their progress (Roberson & Roberson, 2009). Gavish and Friedman stated that beginning teachers are often not well acquainted with school procedures, teachers' rights, obligations, or responsibilities.

Beginning teachers are often unprepared for the complexity of the teaching duties they experience in their first years on the job (Cuddapah & Burtin, 2012). Teacher education programs often fail at providing adequate experiences in pedagogy and rely heavily on theory, which does not always help teacher candidates learn *how to teach* or develop skills in pedagogy (Cuddapah & Burtin, 2012). It is during the first years of teaching that are critical in the development of effective teachers (Inman & Marlow, 2004). It is also during these first years of teaching that teachers may begin to feel the effects of burnout, or the progressive buildup of stress, that may be due to the complexity of the teaching duties (Gavish & Friedman, 2010). Some beginning teachers identified

burnout as “terrible exhaustion, strain, alienation from students, and feelings of professional failure” (Gavish & Friedman, 2010, p. 161).

Research has shown that being inadequately prepared for teaching leads to high teacher turnover, teacher attrition, and an overall dissatisfaction for the job (Brownell et al., 2005). Genzuk (1995) and White (2004) claimed that many paraprofessionals often have the desire to be educators, which contributes to the reduction of fiscal and pedagogical concerns of teacher attrition. They also asserted that teaching assistants represent a more diverse staff in schools, which may lead to an increase in teacher candidates from underrepresented groups helping to avert teacher shortages of those traditionally underrepresented groups. Teaching assistants are often seen as a solution for problems with diversity and teacher shortages, in both special education and traditionally underrepresented shortage areas (White, 2004). White (2004) also suggested that paraprofessionals are often part of the local community, which may promise higher retention rates, and they often have proven performance of their duties as a teaching assistant.

A recommendation of policy among administrators, universities, and policy leaders is to create partnerships that place all teacher candidates in the positions of teaching assistants in all public schools in the state of Mississippi. This recommendation would provide the public schools with assistant teachers that are in training to become certified teachers, learning pedagogy and best practices, while also gaining experience in the classroom. The public schools would benefit from having another classroom teacher and/or a reduction in teacher-student ratio as well as the benefit of having a university level mentor to help guide these assistants removing the burden most administrators feel

when hiring a new teacher with no experience. The teaching assistant would gain more hands-on teaching experience, which would help to relieve some of the burdens most beginning teachers face. As Roberson and Roberson (2009) explained, beginning teachers, even in their first year, often assume the exact same responsibilities as twenty-year veterans.

One way to accomplish these recommendations is by allowing the teaching assistants to remain in the classrooms while engaging with the university through online learning (Carr, 2012; Rakap, 2010). With online learning, teaching assistants become teacher interns learning the necessary knowledge and skills needed while also practicing pedagogy in their current classroom. This may also provide a solution to many of the issues that beginning teachers and administrators face today. An average district spends between \$8,000 and \$48,000 dollars on teacher attrition costs for hiring, placement, induction, separation, and replacement of beginning teachers (Benner, 2000). Transitioning assistants may also be a means for producing higher academic gains in student achievement as the teaching assistants transition to a beginning teacher but with experience, knowledge of best practices, and devotion to the field of education.

Recommendations for Future Research

Despite strong state standards, Mississippi students are not catching up to the rest of the nation, ranking last in a school performance evaluation placing Mississippi 51st among the states and Washington, D.C. (Amy, 2013). Research has shown that the most significant factor for improving education is the teacher, who has largest influence on student achievement (Darling-Hammond, 2006; Delors, 1998; Gamage & Walsh, 2003; Good et al., 2006; Grodsky & Gamoran, 2003). Gendall (2001) and Lingam (2010)

further stated that the professional competence of teachers depend on the quality of the teacher education program. Cuddapah and Burtin (2012) claimed we have an ethical responsibility to prepare teachers and give them adequate time to develop pedagogical experiences so that teachers can promote academic achievement for all students. Given the significance of teacher knowledge, as well as student progress, teacher education programs must continue to be a starting point for educational reform (Kleickmann et al., 2013) and future research.

Future research must focus on how to effectively train teacher candidates by studying the various teacher education programs. Current traditional programs give students opportunities to practice their newly acquired skills and knowledge by participating in appropriate coursework, lab settings, and teacher internship (Cuddapah & Burtin, 2012). However, many beginning teachers report that this training is insufficient once they assume the full responsibilities of the classroom. As Roberson and Roberson (2009) explained, beginning teachers, even in their first year, often assume the exact same responsibilities as twenty-year veterans. Future research must provide insight on how to effectively provide the necessary knowledge and skills needed to become an effective teacher.

In contrast to the traditional teacher education programs, alternate route programs should be a topic of future research. Although alternate route programs were developed from necessity to avert teacher shortages, they may have even more disadvantages as they have often had less training in pedagogy and even less experience in the classroom. Because alternate route programs lack many traditional program components, alternate route teachers often need consistent guidance on how to teach content, frequent

opportunities to learn from experts, and help with the logistical aspects of teaching (Cuddapah & Burtin, 2012). Future research should provide information on the best practices for teachers who gain licensure through alternative methods.

A trend in teacher education programs that has emerged in the last decade is the online teacher education programs. Future research should focus on its effectiveness in preparing teachers for the classroom. Future research must examine the most effective means for training teachers that produce effective educational leaders helping students achieve academic success for a lifetime of opportunities.

Another aspect of research that could be further explored is the perceptions of the principals concerning certified teachers and their respective former teacher education programs. Guiding questions for this research could involve noting differences in pedagogy and handling the day-to-day tasks of teaching based on how they were trained. Are traditional candidates more or less prepared for the career of teaching? Are there significant differences in self-efficacy among traditional, alternate, and online education teacher candidates? Are their differences in the level of administrative support needed for graduates of the different types of teacher education programs? Future research that tracks beginning teachers and their prior educational training could provide a plethora of information for teacher training programs as well as administrators.

As revealed from this teacher education program study, training paraprofessionals, who are already in the classrooms, should also continue to be a focus of future research. Bignold and Barbera (2012) stated that training paraprofessionals and identifying the needs of paraprofessionals are areas that are often underresearched (Bignold & Barbera, 2012). Future research should begin with an inventory of the

support staff in our schools and should address the needs as well as goals of current teaching assistants. Through inventories and questionnaires, an inventory of current teaching assistants could be analyzed along with their future career goals. A specific focus could detail how becoming a teaching assistant became the starting point for their career as an educator and/or how this path has led them to the teacher certification process. Furthermore, future research could detail the genesis of a teaching assistant's career and their projected trajectory. Could it be possible that many teaching assistants do not want to become certified teachers? Could it be possible that many perceive the teaching assistant position as a stepping stone to becoming a certified teacher but hold the position for financial or other reasons? Through this research, administrators could gain an understanding of the needs and goals of teaching assistants that are such a vital component of support staff in today's schools.

As the needs and goals of current teaching assistants are identified, future research should also focus on how to effectively create partnerships between local schools and universities. Ingersoll (2012) revealed the importance of school and university partnerships during the first few years into the profession as a means of "intervention for retention" (p. 48). As reported by Ingersoll and Smith (2003) past research showed that inadequate support was one of the main factors in a beginning teacher's departure from the teaching profession. Research on effective partnerships where universities work with beginning teachers, removing this burden from administrators, to help retain beginning teachers by providing support would be a crucial component of this research. Hudson's (2012) research reported a lack of support and

disconnect existed between the university and the real world of teaching, so future research could provide details on the most effective way to forge those partnerships.

As discussed in this study, future research should continue to focus on self-efficacy. Teacher self-efficacy can be defined as a teacher's judgment about whether he or she is capable of the actions that will positively impact student learning (Mitchell, 2011). "Teacher's beliefs in their personal self-efficacy to motivate and promote learning affects the types of learning environments they create and the level of academic progress their students achieve" (Bandura, 1993, p. 117). As revealed in this study there was no significant difference in the perceptions of self-efficacy between the two programs. However, because the teaching assistants have more experience and understanding of the duties, perhaps their self-efficacy measurements were more realistic while traditional teacher candidates' perceptions were inflated or overly confident due to lack of experience. A longitudinal study tracking these teacher candidates throughout their first three years as teachers would be a great focus of research. Would the traditional teacher candidates' perceptions of self-efficacy remain elevated after their first, second, and even third year as teachers? Would the teaching assistants' perceptions change as they assume full responsibilities of the classroom? And most importantly would there be a significant difference among the two groups' perceptions as they progress through the beginning of their career?

As a continuation of a longitudinal study following the subjects of this study, a target of future research could also focus on rates of attrition and reported burn-out among these two groups of beginning teachers. With teacher attrition, or leaving the profession of teaching early on in the teaching career, would there be differences in the

rate of attrition among the two groups? Also, would these teacher candidates feel the effects of teacher burn-out that leads to attrition at the same rate?

Future research should continue to focus on teacher candidates and teacher education programs. This current research as well as future research suggestions are hoped to provide insight and guidance for educational leaders. Through leadership and research, an improvement to the educational systems can be a starting point for reform and an exploration for new possibilities.

APPENDIX A

Elementary Education Exit Interview

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I am adequately prepared to teach in the content/subject area(s) of my degree.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I am not prepared to write clear, creative, effective, and interesting lesson plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I can begin each subject/class with an effective introduction/anticipatory set.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I have difficulty self-evaluating and reflecting on teaching processes to determine the need for change and/or improvement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I can effectively develop classroom management techniques.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I am concerned with my ability to manage student behavior in my classroom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7. I am not confident in my ability to accommodate the instructional needs of most students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I know I can implement successful strategies for handling special learning needs (special needs, gifted, non-readers, multicultural/diverse needs, early/late finishers, various learning styles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I can solve most classroom management and instructional problems which I encounter during a day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I may have difficulty covering instructional content in the time allocated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I know how to write instructional plans based on the State Curriculum or subject area frameworks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
12. I have limited knowledge of various forms of assessment strategies to monitor and adjust my instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I can evaluate my teaching and plan ways to improve my effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I feel confident in my ability to pace a lesson that will keep most learners engaged.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. My knowledge of teaching methodology will adequately prepare me for the classroom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX B

PERMISSION TO USE DATA

**THE UNIVERSITY OF
SOUTHERN MISSISSIPPI.**

COLLEGE OF EDUCATION AND PSYCHOLOGY

118 College Drive #5023 | Hattiesburg, MS 39406-0001

Phone: 601.266.4539 | Fax: 601.266.4175 | Deborah.Stoulig@usm.edu | www.usm.edu/cep

July 9, 2013

Billie Tingle
The University of Southern Mississippi
Curriculum, Instruction, and Special Education
118 College Dr. #5028
Hattiesburg, MS 39406-5028

Dear Billie:

Permission is hereby granted to use data from surveys collected in Tk20 and Praxis scores from teacher candidates for the purpose of completing requirements for doctoral research.

Sincerely,

A handwritten signature in cursive script that reads "Debbie Stoulig".

Debbie Stoulig, Ph.D.
Coordinator of NCATE Assessment

APPENDIX C

IRB LETTER



INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.6820 | Fax: 601.266.4377 | www.usm.edu/irb

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 13100402
PROJECT TITLE: Using Online Education to Transition Teaching Assistants to Teacher Certification: Examining the Differences among Teacher Education Programs
PROJECT TYPE: New Project
RESEARCHER(S): Billie Tingle
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Educational Leadership
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 10/09/2013 to 10/08/2014

Lawrence A. Hosman, Ph.D.
Institutional Review Board

REFERENCES

- Adams, S., & Garrett, J. L. (1969). *To be a teacher: An introduction to education*. Upper Saddle River, NJ: Prentice-Hall.
- Addison, A. W. (2010). *A study of the effects of the length of student-teaching experiences on new teacher efficacy*. (Doctoral dissertation, East Tennessee State University) Retrieved from ProQuest Digital Dissertations database. (848643870).
- Allen, J. M. (2009). Valuing practice over theory: How beginning teachers re-orient their practice in the transition from the university to the workplace. *Teaching and Teacher Education*, 25(5), 647-654.
- American College Testing. (2014). The ACT. Retrieved from <http://www.act.org>
- American Federation of Teachers. (2008). *Standards for a profession*. Washington, DC: Paraprofessional and School Related Personnel Division.
- Amy, J. (2013). Mississippi schools get lowest achievement ranking in U.S. *Hattiesburg American*. Retrieved from <http://www.hattiesburgamerican.com>
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117-148.
- Bedford, D., Jackson, C., & Wilson, E. (2008). New partnerships for learning: Teachers' perspectives on their developing professional relationships with teaching assistants in England. *Journal of In-Service Education*, 34(1), 7-25.
- Benner, A.D. (2000). *The cost of teacher turnover*. Austin, TX: Texas Center for Educational Research.
- Bezzina, C. (2006). Views from the trenches: Beginning teachers' perceptions about their professional development. *Professional Development in Education*, 32(4), 411-430.

- Bignold, W., & Barbera, J. (2012). Teaching assistants and teacher education in England: Meeting their continuing professional development needs. *Professional Development in Education, 38*(3), 365-375.
- Boe, E. E. (2006). Long-term trends in the national demand, supply, and shortage of special education teachers. *Journal of Special Education, 40*(3), 138-150.
- Bornfreund, L. (2012). Preparing teachers for the early grades. *Educational Leadership, 69*(8), 36-40.
- Bransford, J., Darling-Hammond, L., & LePage, P. (2005). Introduction. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp.1-39). San Francisco, CA: Jossey-Bass.
- Brownell, M. T., Bishop, A. M., & Sindelar, P. T. (2005). NCLB and the demand for highly qualified teachers: Challenges and solutions for rural schools. *Rural Special Education Quarterly, 24*(1), 9-15.
- Budig, G. A. (2006). A perfect storm. *Phi Delta Kappan, 88*(2), 114-116.
- Butt, G., & Lance, A. (2005). Modernizing the roles of support staff in primary schools: Changing focus, changing function. *Educational Review, 57*(2), 39-49.
- Carr, N. (2012). The crisis in higher education. *Technology Review, 115*(6), 32-40.
- Caywood, K., & Duckett, J. (2003). Online vs. on-campus learning in teacher education. *Teacher Education and Special Education, 26*(2), 98-105.
- Chaudhuri, N. (2009). *Math science teacher preparation, recruitment and retention in Texas: Educational reform implications from a 2008 survey study*. Paper

presented at the annual meeting of the Southern Political Science Association,
New Orleans, LA.

Chen, X., Knepper, P. R., Geis, S., & Henke, R. R. (2000). *Progress through the teacher pipeline 1992-93 college graduates and elementary secondary school teaching as of 1997*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Cochran-Smith, M. (2006). Taking stock in 2006: Evidence, evidence everywhere. *Journal of Teacher Education*, 57(1), 6-12.

Cronbach, L. J. (1950). Statistical methods for multi-score tests. *Journal of Clinical Psychology*, 6(1), 21-26.

Cuddapah, J. L., & Burtin, A. S. (2012). What all novices need. *Educational Leadership*, 69(8), 66-69.

Dalal, S., & Rani, M. S. (2013). A study of leadership quality in teaching profession. *International Journal of Scientific and Research Publications*, 3(11), 1-4.

Darling-Hammond, L. (1999). *The role of universities in the preparation of teacher*. London, UK: Falmer Press.

Darling-Hammond, L. (2006). Constructing 21st century teacher education. *Journal of Teacher Education*, 57(3), 300-314.

Darling-Hammond, L. (2010). Recruiting and retaining teachers: Turning around the race to the bottom in high-needs schools. *Journal of Curriculum and Instruction*, 4(1), 16-32.

- Delors, J. (1998). *Learning: The treasure within*. International Commission on Education for the twenty-first century: Report to UNESCO of the International Commission on Education for the twenty-first century. Paris, France.
- Educational Testing Services. (2013). *The praxis series*. Retrieved from <http://www.ets.org>
- Feistritzer, C. E. (2011). *Profile of teachers in the US, 2011*. National Center for Education Information.
- Fiemann-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, 103(6), 1,013-1,055.
- Gamage, D., & Walsh, F. (2003). The significance of professional development and practice: Towards a better public education system. *Teacher Development*, 7(3), 363-379. doi:10.1080/13664530300300318
- Gardner, D. P. (1983). A nation at risk. *The National Commission on Excellence in Education*, U.S. Department of Education, Washington, DC.
- Gavish, B., & Friedman, I. A. (2010). Novice teachers' experiences of teaching: A dynamic aspect of burnout. *Social Psychology of Education*, 13(2), 141-167.
- Gendall, L. (2001). Issues in pre-service mathematics education. The New Zealand Association for Research in Education Conference, Christchurch, 6-9 December.
- Genzok, S.M. (1995). *Integration factors affecting commitment to educational and occupational goals for Latino paraeducators*. (Doctoral dissertation, University of Southern California). Retrieved from ProQuest Digital Dissertations database. (304233486)

- Giangreco, M. F. (2007). *Guidelines for selecting alternatives to overreliance on paraprofessionals*. Paper presented at a symposium conducted at the U.S. Department of Education, Office of Special Education Programs Project Director's Meeting, Washington, DC.
- Goldhaber, D., & Anthony, E. (2003). Indicators of teacher quality. *ERIC Clearinghouse*, ED478408.
- Good, T. L., McCaslin, M., Tsang, H. Y., Zhang, J., Wiley, C. R., Bozack, A. R., & Hester, W. (2006). How well do 1st-year teachers teach: Does type of preparation make a difference? *Journal of Teacher Education*, 57(4), 410-430. doi: 10.1177/0022487106291566
- Grissmer, D., & Kirby, S. (1997). Teacher turnover and teacher quality. *The Teachers College Record*, 99(1), 45-56.
- Grodsky, E., & Gamoran, A. (2003). The relationship between professional development and professional community in American schools. *School Effectiveness and School Improvement*, 14(1), 1-29.
- Guttek, G. (1970). *An historical introduction to American education*. NY: Crowell.
- Harris, D. N., & Sass, T. R. (2011). Teacher training, teacher quality and student achievement. *Journal of Public Economics*, 95(7), 798-812.
- Hawkins, T. D. (2008). *The preparation requirements for effective paraprofessionals: A case study of a program to certify paraprofessionals under No Child Left Behind* (Doctoral dissertation, New York University). Retrieved from ProQuest Digital Dissertations database. (304526105)

- Hochschild, J. L., & Scovronick, N. (2004). *The American dream and the public schools*. New York, NK: Oxford University Press.
- Hope, W. (1999). Principal's orientation and induction activities as factors in teacher retention. *The Clearing House*, 73(1), 54-56.
- Horn, A. (1994). Teacher development as a nation's development. *Fijian Teachers Association Journal*, 60, 82-85.
- Hudson, P. (2012). How can universities support beginning teachers? *Journal of Higher Education Theory and Practice*, 12(3), 50-59.
- Hudson, S., Beutel, D., & Hudson, P. (2009). Teacher induction in Australia: A sample of what's really happening. *Research in Comparative and International Education*, 4(1), 53-62.
- Ingersoll, R.M. (2001). *Teacher turnover, teacher shortages, and the organizations of schools*. Center for the Study of Teaching and Policy. University of Washington. Retrieved from <http://depts.washington.edu/ctpmail/PDFs/Turnover-Ing-01-2001.pdf>
- Ingersoll, R. M. (2011). Do we produce enough mathematics and science teachers? *Phi Delta Kappan*, 92(6), 37-41.
- Ingersoll, R. M. (2012). Beginning teacher induction: What the data tell us. *Phi Delta Kappan*, 93(8), 47-51.
- Ingersoll, R. M., & May, H.; & Consortium for Policy Research in Education (2011). *Recruitment, retention and the minority teacher shortage*. CPRE Research Report # RR-69. Consortium for Policy Research in Education.

- Ingersoll, R. M., Merrill, L., & May, H. (2012). Retaining teachers: How preparation matters. *Educational Leadership*, 69(8), 30-34.
- Ingersoll, R. M., & Perda, D. (2013). *How high is teacher turnover and is it a problem?* Consortium for Policy Research in Education, Philadelphia, PA: University of Pennsylvania.
- Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational Leadership*, 60(8), 30-33.
- Ingersoll, R. M., & Strong, M. (2011). The impact of induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Educational Research*, 81(2), 201-233.
- Inman, D., & Marlow, L. (2004). Teacher retention: Why do beginning teachers remain in the profession? *Education*, 124(4), 605-614.
- Isaacs, M. L., Elliot, E. M., McConney, A., Wachholz, P., Greene, P., & Greene, M. (2012). Evaluating quality methods of filling the teacher gap: Results of a pilot study with early career teachers. *Journal of the National Association for Alternative Certification*, 2(2), 5-22.
- Johnson, J., & Briden, M. (2004). Rio Salado College online post-baccalaureate teacher preparation program. *Community College Journal of Research and Practice*, 28(1), 41-42.
- Kang, S., & Berliner, D. C. (2012). Characteristics of teacher induction programs and turnover rate of beginning teachers. *Teacher Education*, 47(4), 268-282.
- Kleickmann, T., Richter, D., Kunter, M., Elsner, J., Besser, M., Krauss, S., & Baumert, J. (2013). Teachers' content knowledge and pedagogical content knowledge: The

- role of structural differences in teacher education. *Journal of Teacher Education*, 64(1), 90-106.
- Lawlor, S. (1990). *Teachers mistaught: Training in theories or education in objects?* London, UK: Centre for Policy Studies.
- Lingam, G. I. (2010). Teachers equip with new skills. *Solomon Star*, 4, 12.
- Lingam, G. I. (2012). Beginning teachers' perceptions of their training programme. *Creative Education*, 3(4), 439-447.
- Major, C. H. (2010). Do virtual professors dream of electric students? University faculty experiences with online distance education. *Teacher College Record*, 112(8), 2,154-2,208.
- McKenzie, K., & Locke, L. (2009). Becoming a leader for equity and excellence: It starts with instruction. In S. Douglass Horsford (Ed.), *New Perspectives in educational leadership: Exploring social, political, and community contexts and meaning* (pp.27-58). New York, NY: Peter Lang.
- Milner, C. A. (1998). *Paraprofessionals in inclusive classrooms: Working without a net* (Doctoral dissertation, The University of North Dakota). Retrieved from ProQuest Digital Dissertations database. (304441957)
- Mississippi Department of Education. (2013). Licensure. Retrieved from <http://www.mde.k12.ms.us/educator-licensure>
- Mitchell, M. (2011). *Closing the gap: The effects of alternative certification programs on intern self-efficacy* (Doctoral dissertation, Loyola Marymount University). Retrieved from ProQuest Digital Dissertations database. (896134360)

- Moody, F. B. (1967). *Teacher aide: A description and analysis of a new staff position in selected Pennsylvania schools* (Doctoral dissertation, Pennsylvania State University). Retrieved from ProQuest Digital Dissertations database. (288358606)
- Mondale, S. (2002). *School: The story of American public education*. Boston, MA: Beacon Press.
- Morgan, R. L., Forbush, D. E., & Nelson, J. (2003). Special education teacher and paraprofessional training using live, internet-based courses delivered to four distant sites. *Teacher Educator*, 39(2), 115-130.
- Murname, R. Singer, J., Willet, J., Kemple, J., & Olsen, R. (1991). *Who will teach? Policies that matter*. Cambridge, MA: Harvard University Press.
- Myers, B., Cruickshank, D., & Kennedy, J. (1974). *Problems of teachers graduated from OSU as teacher education curricular indicators*. Columbus, OH: Ohio State University.
- National Center for Education Statistics. (2007). *Projections of education statistics*. Washington, DC: U.S. Department of Education, Office of Educational Research and Statistics.
- No Child Left Behind. (2001). Retrieved from U.S. Department of Education website <http://www2.ed.gov/nclb/overview/intro/execsumm.html>
- Payton, C. B. (2012). *Classroom management styles: The differences among traditionally-licensed teachers who were formally paraprofessionals and alternatively-licensed teachers*. (Doctoral dissertation, The University of Southern Mississippi). Retrieved from ProQuest Dissertations Digital database. (1021724379)

- Rakap, S. (2010). Impacts of learning styles and computer skills on adult students' learning online. *TOJET: The Turkish Online Journal of Educational Technology*, 9(2), 108-115.
- Roberson, S., & Roberson, R. (2009). The role and practice of the principal in developing novice first-year teachers. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 82(3), 113-118.
- Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, 50(1), 4-36.
- Samruayruen, B. (2010). Improving instructional design for online learning by using the online top-down modeling model. *Society for Information Technology*, 10(1), 838-842.
- Scannell, D. P. (1999). *Models of teacher education*. Washington, DC: American Council on Education.
- Schlechty, P. C., & Vance, V. S. (1981). Do academically able teachers leave education? The North Carolina case. *The Phi Delta Kappan*, 63(2), 106-112.
- Skrla, L., McKenzie, K., & Scheurich, J. (2009). *Using equity audits to create equitable and excellent schools*. Thousand Oaks, CA: Corwin.
- Stanulis, R. V., Burrill, G., Ames, K. T., & O'Brien, J. (2007). Fitting in and learning to teach: Tensions in developing a vision for a university-based induction program for beginning teachers. *Teacher Education Quarterly*, 34(3), 135-147.
- Stricklin, K., & Hulbert, H. (2011). Lessons learned: Data analysis comparing online and face to face student knowledge. *Proceedings of World Conference on Educational*

Multimedia, Hypermedia and Telecommunications 2011, AACE: Chesapeake, VA.

Tallent-Runnels, M. K., Thomas, J. A., & Lan, W. Y. (2006). Teaching courses online: A review of the research. *Review of Educational Research*, 76(1), 93-115.

Tyack, D. B., & Hansot, E. (1992). *Learning together: A history of coeducation in American public schools*. New York, NY: Russell Sage Foundation Publications.

Veenman, S. (1984). Perceived problems of beginning teachers. *Review of Educational Research*, 54(2), 143-178.

Vygotsky, L. S. (1978). *Mind and society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.

White, R. (2004). The recruitment of para-educators into the special education profession. *Remedial and Special Education*, 25(4), 214-218.

Wilson, S. M., Floden, R. E., & Ferrini-Mundy, J. (2001). Teacher preparation research: Current knowledge, gaps and recommendations. A research report prepared for the U. S. Department of Education and The Office for Educational Research and Improvement. Washington, DC.

Wong, A. F., Chong, S., Choy, D., & Lim, K. M. (2012). Investigating changes in pedagogical knowledge and skills from pre-service to the initial year of teaching. *Educational Research for Policy and Practice*, 11(2), 105-117.