

DIFFERENCES IN TEACHER AND STUDENT CHARACTERISTICS BY
ACCOUNTABILITY RATINGS:
A TEXAS STATEWIDE MULTIYEAR STUDY

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DEDICATION

To my wife—my inspiration and my beloved. My wife, Rhonda, gave a new meaning to sacrifice and compromise when she encouraged me to pursue one aspect of my lifelong dream. The better part of that dream was when she said, “I do!” I will never be able to thank her enough for enduring long nights without me while I studied, wrote, read, and presented hundreds of miles away from home. Although I was under the same roof, I must have been miles away in my study. I am grateful for her support and prayers. I am blessed by our Lord and Savior with her in my life.

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To my mother and father-in-law, Margaret and Royce, for their continued support of my family. They were there for my family when I needed their support to allow me to continue my education. When I decided to go back to school, they assisted with the care of my two sons and were always available to provide help to my wife when I was away for several nights working on my doctoral degree. I am blessed by our Lord and Savior with them in my life.

ABSTRACT

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Purpose

Four purposes were present in this journal-ready dissertation. The first purpose was to examine the degree to which the percentage of beginning teachers in traditionally configured elementary, middle, and secondary Texas schools differed as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics). The second purpose was to determine the extent to which differences were present in student ethnic/racial enrollment as a function of two distinction designations for traditionally configured elementary, middle, and secondary Texas schools. The third purpose was to ascertain whether trends were present in the percentage of beginning teachers and student ethnic/racial enrollment with respect to distinction designations in reading and in mathematics. The final purpose was to determine the degree to which prior trends established by Martinez-Garcia and Slate (2010, 2012a, 2012b), Moreno and Slate (2015), and Lopez and Slate (2014) were commensurate with the 2011-2012 through the 2014-2015 school years that were examined in this study.

Method

A non-experimental causal-comparative research design was used in this study. Archival quantitative data were obtained and analyzed from the Texas Academic Performance Reports for the 2012-2013 through the 2015-2016 school years. Only data from traditionally configured public elementary, middle, and high schools were

analyzed. Inferential statistical procedures were calculated to determine the degree to which the percentages of beginning teachers and student ethnicity/race enrollment percentages differed between two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics).

Findings

Statistically significant differences were present in the percentage of beginning teachers between the two different distinction designations. Higher percentages of beginning teachers were present in schools that did not meet the two distinction designations than in schools that did meet the two distinction designations. With respect to student enrollment percentages by ethnicity/race, higher percentages of Asian students and lower percentages of Black students, Hispanic students, and White students were present at schools that met the two distinction designations. Results from this study were congruent with much of the recent empirical literature. Implications for policy and recommendations for research were provided.

KEY WORDS: Beginning teachers, Distinction designation, Elementary schools, Middle Schools, High Schools, Ethnic/racial enrollment, Mathematics, Reading/English Language Arts

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CHAPTER I

Introduction

As early as the 1960s, equity in educational opportunities for Black and Hispanic students was a concern when evaluating student achievement (Jimenez-Castellanos, 2012; Towers, 1992). In response to inequities in educational opportunity, the United States Department of Education commissioned James S. Coleman and a team of researchers to conduct a research study concerning educational equity in the US (Jimenez-Castellanos, 2012; National Center for Education Statistics, 1966; Towers, 1992). In 1966, Coleman and his colleagues published their report entitled *Equality of Educational Opportunity*, more commonly known as *The Coleman Report* (National Center for Education Statistics, 1966; Jimenez-Castellanos, 2012; Towers, 1992). Coleman suggested low student achievement was more related to a student's socioeconomic background than school or teacher characteristics (Jimenez-Castellanos, 2012; Towers, 1992).

Despite the criticism of Coleman's research, the *Coleman Report* did bring attention to the inequities in educational opportunities among students of diverse ethnic and economic backgrounds (Borman & Dowling, 2010; Jimenez-Castellanos, 2012; Whitehurst, 2002). Seventeen years after the publication of *Equality of Educational Opportunity*, the National Commission on Excellence in Education (1983) released *A Nation at Risk: The Imperative for Educational Reform*. In *A Nation at Risk: The Imperative for Educational Reform*, the National Commission on Excellence in Education indicated numerous issues in American public education which included literacy, equity in educational opportunity, increased need for remediation in

mathematics, and a decrease in science test scores (Johanningmeier, 2010; National Commission on Excellence in Education, 1983). Both the *Equality of Educational Opportunity* and *A Nation At Risk: The Imperative for Educational Reform* reports influenced educational policy regarding student achievement among government agencies and educational leaders across the United States (Borman & Dowling, 2010; Hunt, 2008; Johanningmeier, 2010). Consequently, numerous reports concerning educational reform and policy were issued since the release of *Equality of Educational Opportunity* and *A Nation At Risk: The Imperative for Educational Reform* reports (Bullough, Burbank, Gess-Newsome, Kauchak, & Kennedy, 1998). One report, *What Matters Most: Teaching for America's Future*, was issued in 1996 by the National Commission on Teaching & America's Future. The researchers for the National Commission on Teaching & America's Future contended that teacher quality was a priority when addressing the need to reform education and posited the need for setting standards for teachers and students (Bullough et al., 1998; National Commission on Teaching & America's Future, 1996).

For several decades, attention has been focused on improving student achievement (Darling-Hammond, 2000; Shen, Mansberger, & Yang, 2004), especially in light of the release of *A Nation At Risk: The Imperative for Educational Reform* in 1983. *A Nation At Risk* set the stage for subsequent changes in education reform (Hunt, 2008). Accordingly, in 2001, the No Child Left Behind Act (2002) was passed. In the No Child Left Behind Act, accountability standards were a priority for all state and federally funded public K-12 schools when addressing issues involving student achievement (Darling-Hammond & Sykes, 2003; Terry, 2010). However, in December of 2015, the

Every Student Succeeds Act was signed by President Obama replacing the No Child Left Behind Act. The Every Student Succeeds Act is the most recent reauthorization of the Elementary and Secondary Education Act. Consequently, all state and federally funded public K-12 schools are no longer required to ensure highly qualified teachers are hired with the federal government relinquishing much of the responsibility for accountability standards to the states (Alliance for Excellent Education, 2016a; Hanushek, Ruhose, & Woessmann, 2016; Norville, 2016). The Every Student Succeeds Act does require states to outline their policy regarding any educational inequities that may exist in schools with students of color and low income families (Alliance for Excellent Education, 2016a). Nevertheless, many states, including Texas, currently have their own requirements for what qualifies a teacher as highly qualified including standards for accountability of all state funded public schools (Texas Education Code, 2005).

Because of the No Child Left Behind Act and the Every Student Succeeds Act law, numerous researchers (Clotfelter, Ladd, Vigdor, & Wheeler, 2007; Darling-Hammond & Sykes, 2003; Gagnon & Mattingly, 2015; Ingersoll, 2001; Peske & Haycock, 2006; Rivkin, Hanushek, & Kain, 2005; Ronfeldt, Loeb, & Wyckoff, 2013; Terry, 2010) had placed their focus on low performing schools with Hispanic and Black students, as well as students in poverty. Researchers (Clotfelter, Ladd, & Vigdor, 2007; Ronfeldt et al., 2013; Simon & Johnson, 2015) had identified specific demographic characteristics (e.g., socioeconomic status, Hispanic, and Black) as areas of concern due to the high teacher attrition rates and high percentages of inexperienced teachers. Using the National Center for Education Statistics data, Sutchter, Darling-Hammond, and Carver-Thomas (2016) established the presence of an 8% teacher attrition rate in the

United States in the 2012-2013 school year. However, the 8% attrition rate does not necessarily reflect the attrition rates of any particular state. For example, Arizona had the highest attrition rate at 18.8%, compared to an attrition rate of only 3% in Massachusetts (Sutcher et al., 2016). Sutcher et al. (2016) further documented approximately 25% of teachers were in their first or second year of teaching in high-poverty schools in Arizona for the 2012-2013 school year. Because statistically significant relationships have been documented between student achievement and teacher experience, hiring experienced teachers to teach in low performing schools where the need is the greatest is crucial in addressing educational inequities in schools.

Elementary Schools and Teacher Quality Literature Review

Because teacher quality and student achievement are related, the need to have well-qualified teachers in elementary schools is vital to the academic and emotional welfare of students (Brophy, 1988; Darling-Hammond, 2000; Darling-Hammond, 2007; McCormick & O'Connor, 2015; Wright, Horn, & Sanders, 1997). With respect to their cognitive development, students at the elementary level need a solid academic foundation on which to build (Gormley, Phillips, Newmark, Welti, & Adelstein, 2011; Tareilo, 2013; Valsiner, 2005). Teacher quality needs to be a priority at this level by school administrators so that student success is not stifled and students are academically successful (Clotfelter, Ladd, & Vigdor, 2007; Wright et al., 1997).

Due to high-stakes testing and accountability, school administrators are faced with the responsibility of ensuring quality teachers are hired for their school campuses. Because of empirically documented relationships between teacher quality and student achievement (Adamson & Darling-Hammond, 2012; Boyd, Grossman, Lankford, Loeb,

& Wyckoff, 2008; Clotfelter et al., 2007; Darling-Hammond, 2000; Peske & Haycock, 2006), school administrators do not have much flexibility when their campuses receive a poor accountability rating due to low student achievement. Low student performance on standardized state assessments can result in a school receiving a low accountability rating by the state and influence a school's adequate yearly progress (Darling-Hammond & Sykes, 2003, Foley & Nelson, 2011; Terry, 2010). Readers should note that the Every Student Succeeds Act has eliminated this system of accountability. Although the Every Student Succeeds Act had eliminated the adequate yearly progress provision of the No Child Left Behind Act, states that have been identified to need improvement will be allowed up to four years to meet the minimum state requirements "to exit the comprehensive support and improvement status" (Alliance for Excellent Education, 2016a, p. 1). If a campus fails to meet the minimum state mandated criteria at the end of four years, that campus will be required to undergo more intensive intervention as specified by the state.

In light of the No Child Left Behind Act (2002), school leaders and administrators adopted policies to ensure high quality teachers were hired in their campuses (Rutledge, Harris, & Ingle, 2010). Although the provision in the No Child Left Behind Act for highly qualified teachers is no longer a requirement in the Every Student Succeeds Act, the impetus to hire high quality teachers remains to avoid being placed on an improvement status with the state. As such, hiring practices needed to be aligned with the needs of the campus and if the needs of the campus were reflective of low performance, or low student achievement, then hiring quality teachers would be a high priority. In addition to ensuring quality teachers are hired, school administrators should

ensure the teachers being hired possess the necessary experience and pedagogical content skill to address the needs of the teaching assignment (Darling-Hammond, 2008).

In addition, careful deliberations should occur regarding placing first year teachers in low performing schools under consideration for intensive intervention (Alliance for Excellent Education, 2016a; Darling-Hammond, 2008; Foley & Nelson, 2011). Determining where to place first year teachers by school administrators should include attention to the candidate's teaching certification, experience, and any available teacher induction and mentor programs (Darling-Hammond, 2008; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004). Moreover, if new teachers are hired, administrators should ensure systems are in place to support new teachers with induction and mentor programs (Coronado, 2009; Darling-Hammond, 2008; Peske & Haycock, 2006; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004).

Researchers (e.g., Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia, LaPrairie, & Slate, 2011; Martinez-Garcia & Slate, 2012a; Moreno & Slate, 2015) had documented the presence of statistically significantly higher percentages of novice teachers in low performing schools than in higher performing schools. Moreover, beginning teachers were more likely to be placed in schools with students of a diverse population (e.g., Black, Hispanic, and low socioeconomic status) with a poor accountability rating (Alliance for Excellent Education, 2016a; Darling-Hammond, 2008; Foley & Nelson, 2011; Gagnon & Mattingly, 2015). Because novice teachers have little to no teaching experience, novice teachers have greater challenges in their first year.

In fact, researchers (e.g., Clotfelter, Ladd, & Vigdor, 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b, Peske & Haycock, 2006) have documented statistically significant relationships between teaching experience and student achievement. In a recent empirical investigation of Texas elementary schools, Moreno and Slate (2015) revealed that statistically significant differences were present in the percentage of beginning teachers by school accountability rating for the 2010-2011 school year. Moreno and Slate (2015) established that slightly over 3% of teachers in Exemplary Schools were novice, or first year teachers, in comparison to over 7% of the teachers in Academically Unacceptable Schools being novice or first year teachers. In a similar study, Lopez and Slate (2014) revealed that a statistically significant difference was present in the percentage of beginning teachers between elementary schools that received an academic achievement distinction and schools that did not receive a distinction in Texas during the 2013-2014 school year. Lopez and Slate (2014) established that schools that did not receive a Mathematics Achievement Distinction Designation had slightly over 7% beginning teachers in comparison to 6% of beginning teachers in schools that did receive a Mathematics Achievement Distinction Designation. Lopez and Slate (2014) further revealed that schools that did not receive a Reading Achievement Distinction Designation were comprised of slightly over 7% beginning teachers in comparison to 6% of beginning teachers in schools that received a Reading Achievement Distinction Designation.

Similarly documented by the Wisconsin Teacher Distribution Project was the presence of a higher percentage of inexperienced teachers in low performing elementary schools than in higher performing schools (Peske & Haycock, 2006). Peske and Haycock

(2006) revealed that in elementary schools in which students performed poorly in reading in the 2004-2005 school year, 24% of teachers were inexperienced as opposed to 12% of inexperienced teachers in schools in which students performed well in reading. Peske and Haycock (2006) further revealed that in elementary schools in which students performed poorly in mathematics in the 2004-2005 school year, 24% of teachers were inexperienced as opposed to 13% of inexperienced teachers in schools in which students performed well in mathematics. Moreover, Peske and Haycock documented that schools with more than 62% students who were either Black or Hispanic had 26% novice teachers as opposed to 12% novice teachers in schools with less than 7% of students who were either Black or Hispanic.

With regard to teacher quality, Peske and Haycock (2006) revealed that schools in Illinois with the highest percentage Black and Hispanic students were taught by lower quality teachers as contrasted with schools with lower percentage of Black and Hispanic schools with higher quality teachers. Peske and Haycock indicated that teacher quality was measured based on teaching experience, level of education, and academic aptitude. Additionally, schools with higher percentages of Black and Hispanic students were more likely to be low performing schools with low quality teachers (Clotfelter, Ladd, & Vigdor, 2005; Goldhaber, Lavery, & Theobald, 2015; Peske & Haycock, 2006; Simon & Johnson, 2015). In North Carolina, Black and Hispanic students were more likely taught by inexperienced teachers in comparison to White students, indicating an inequitable distribution of experienced teachers “in a way that disadvantages Black students” (Clotfelter et al., 2005, p. 1).

Middle Schools and Teacher Quality Literature Review

Rivkin et al. (2005), in an analysis of teacher experience and student achievement, documented that mathematics achievement was lower in classrooms with beginning teachers with very little to no teaching experience than in classrooms with more experienced teachers. Clotfelter et al. (2006) determined that highly experienced teachers and licensure test scores were a consistent indicator of improved student performance. Gagnon and Mattingly (2015) examined school and student characteristics data in the United States collected from the Civil Rights Data Collection, the Small Area Income and Poverty Estimates, and the 2010 US Census. Gagnon and Mattingly determined schools with a diverse population (e.g., Black, American Indian, and Hispanic) and students from a low socioeconomic background were more likely to have inexperienced teachers than schools with students of a higher socioeconomic background. When examining teacher experience as an indicator for teacher quality, readers should consider that a teacher's most difficult year is their first year in the classroom (Jacob, 2012).

Because teacher experience is related to student achievement, researchers (e.g., Clotfelter et al., 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b, Peske & Haycock, 2006) postulated novice teachers are more likely to experience greater challenges in their first year. Moreover, novice teachers are more likely to be placed in schools with a diverse student population (e.g., Black, Hispanic, and low socioeconomic status) with a low performing status such as a poor accountability rating by federal and state established standards (Alliance for Excellent Education, 2016a; Darling-Hammond, 2008; Foley & Nelson, 2011; Gagnon & Mattingly, 2015). As such, school administrators should use caution when considering

new teachers. School administrators should take into consideration their school's demographic composition, economic background of the students, and accountability status when seeking to hire new teachers. Moreover, if novice teachers are considered, then strong induction and mentor programs should be in place to support novice teachers to reduce the likelihood of teacher attrition and low student performance (e.g., Coronado, 2009; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004).

Around the ages of 10 to 11, students begin transitioning from elementary to middle school. Additionally, students are beginning the transition from childhood into the early stages of adulthood. The early stages of adulthood, also known as adolescence, present multiple challenges as students begin to experience puberty (Santrock, 2008; Slavin, 2012). This transition involves a variety of physiological and emotional changes that impact a student's social and emotional state (Santrock, 2008; Slavin, 2012). At this juncture in an adolescent's life, transitioning from elementary into middle school, adolescents are becoming more reflective as they begin the challenge of determining who they are and realizing differences in the manner in which they perceive the world around them.

Students transitioning from elementary into middle school may present challenges to new teachers (Martin, Buelow, & Hoffman, 2016; Slavin, 2012; Youngs, Hyun-Seung, & Pogodzinski, 2015). Challenges middle school students face are numerous and can have substantial consequences to their physical and emotional welfare (Slavin, 2012). These challenges include, but are not limited to, bullying, dropping out, drug and alcohol abuse, risk of pregnancy, sexual identity, delinquency, and risk of sexually transmitted diseases (Bracey, 2006; Galambos & Costigan, 2003; Perkins & Borden, 2003; San

Antonio & Salzfass, 2007; Slavin, 2012; Susman, Dorn, & Schiefelbein, 2003). During this time of transition, teachers need to be cognizant of the stresses faced by middle school students. Without the proper training to identify the various signs of emotional disorders, students will struggle academically. Researchers (Kuperminc, Leadbeater, & Blatt, 2001; Midgley, Anderman, & Hicks, 1995; Slavin, 2012) have suggested that the challenges middle school students endure can influence student achievement and result in low student performance. Teachers of middle school students need the pedagogical knowledge and skill to address the many challenges middle school students must endure (Martin et al., 2016; Slavin, 2012).

In addition to the emotional and social challenges of students, teachers must also address the challenges of cultural and ethnic/racial diversity in the student population. Schools that are ethnically/racially diverse with students in poverty, coupled with inexperienced teachers, has been well documented by researchers (Adamson & Darling-Hammond, 2012; Borman & Dowling, 2010; Goldhaber et al., 2015; Schmidt, Cogan, & McKnight, 2011) to be an indicator for low school performance. Goldhaber et al. (2015) established that an inequitable distribution of quality teachers was present in middle schools across a variety of indicators (e.g., low academic performing students, low socioeconomic background, and students who received free or reduced lunch). As measures of teacher quality, Goldhaber et al. (2015) used experience, academic credentials, and estimates of student performance.

High Schools and Teacher Quality Literature Review

The United States has faced many challenges with regard to student achievement and addressing inequities in public education (Darling-Hammond & Sykes, 2003; Terry, 2010). In an attempt to address the educational challenges in American public schools, the United States government has reauthorized the Elementary and Secondary Education Act numerous times. With each reauthorization, public school leaders had to address various policy changes such as requiring teachers to be highly qualified by standards set forth under the No Child Left Behind Act of 2002. More importantly was the mandate of the No Child Left Behind Act to provide potential punitive consequences to schools that failed to meet accountability standards based on high stakes testing. Although the No Child Left Behind Act has been replaced by the Every Student Succeeds Act, the impetus to meet accountability standards remains a driving force for school administrators to hire high quality teachers.

The Every Student Succeeds Act requires states to establish an accountability rating system to identify the lowest performing schools and be prepared to provide an improvement plan for those schools who fail to demonstrate progress (Alliance for Excellent Education, 2016a). As such, pressure remains on school administrators to hire high quality teachers. Because numerous researchers (e.g., Brophy, 1988; Darling-Hammond, 2000; Darling-Hammond, 2007; McCormick & O'Connor, 2015; Wright et al., 1997) have established that teacher quality and student achievement are related, school leaders have emphasized the hiring of high quality teachers to improve the accountability ratings of their schools. However, schools that received a poor accountability rating are more likely to have a high percentage of beginning and

inexperienced teachers teaching in schools with a high percentage of ethnically diverse students (Martinez-Garcia & Slate, 2010, Peske & Haycock, 2006).

Because researchers (e.g., Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia, LaPrairie, & Slate, 2011; Martinez-Garcia & Slate, 2012a, 2012b) had established a relationship between teacher quality and student achievement, the need to place high quality teachers in schools is a critical topic when addressing low performing schools. Statistically significantly lower percentages of beginning teachers have been documented to be employed in high performing schools than in low performing schools. In a recent study, Moreno and Slate (2015) conducted an empirical investigation of teacher characteristics in Texas high schools. In their statewide analysis, they documented the presence of statistically significant differences in the percentage of beginning teachers by school accountability rating in Texas high schools during the 2010-2011 school year. Moreno and Slate established that over 4% of teachers in Exemplary high schools were beginning teachers in comparison to slightly over 9% of teachers in Academically Unacceptable Schools who were beginning teachers. Similarly documented by Martinez-Garcia and Slate (2012b) was the presence of statistically significant differences in the percentage of beginning teachers by accountability rating in three of the five years (i.e., 2003-2004, 2004-2005, and 2007-2008) of data they analyzed in Texas high schools. For example, in the 2003-2004 school year, the percentage of beginning teachers in Exemplary high schools was slightly less than 5% in comparison to almost 13% beginning teachers in Academically Unacceptable high schools. Additionally, in the 2007-2008 school year, Martinez-Garcia and Slate (2012b) determined that the percentage of beginning teachers in Exemplary high schools was

slightly over 6% in comparison to more than 13% beginning teachers in Academically Unacceptable high schools.

Researchers (e.g., Clotfelter et al., 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b; Peske & Haycock, 2006) had documented the presence of statistically significant relationships between student achievement and teaching experience. Gagnon and Mattingly (2015) posited that inexperienced teachers have few pedagogical experiences (e.g., classroom management, curriculum, and instruction) which influence their ability to be effective teachers. In an analysis of student achievement and teacher experience in Texas, Rivkin et al. (2005) established that mathematics was statistically significantly lower in classrooms with inexperienced teachers than in classrooms with more experienced teachers. Clotfelter et al. (2006) further established that experienced teachers in North Carolina were a consistent indicator of improved student achievement. Because beginning teachers have little to no teaching experience, beginning teachers are more likely to experience greater challenges in their first year (Clotfelter et al., 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009). Moreover, Rivkin et al. (2005) noted that the first year of teaching is a transition period wherein the new teacher is adjusting to the profession of education.

Similarly documented by Peske and Haycock (2006) was the presence of a lower percentage of novice teachers in high performing Wisconsin elementary schools as compared to a higher percentage of novice teachers in low performing schools. Peske and Haycock (2006) further established the presence of a high percentage of novice teachers teaching in schools with a high percentage of ethnically/racially diverse schools as compared to a low percentage of novice teachers in schools with a low percentage of

ethnically/racially diverse schools. Schools with more than 62% of their students being ethnically/racially diverse had more than one fourth (i.e., 28%) teachers being novice teachers. This percentage was more than twice the percentage (i.e., 11%) of novice teachers in schools that had less than 1.5% of their students being ethnically/racially diverse.

In an investigation in the state of interest for this article, Texas, Martinez-Garcia and Slate (2010) documented the presence of a high percentage of beginning teachers in Texas high schools with a high percentage of ethnically/racially diverse student population for the 2004-2005 through 2007-2008 school years. For the 2007-2008 school year, schools with slightly less than 60% of their students being ethnically/racially diverse were present in the highest one-third of beginning teacher percentages. This was approximately a 15% difference compared to slightly less than 52% of their students being ethnically/racially diverse in the lowest one-third of beginning teacher percentages. Results for the 2004-2005 through 2006-2007 school years were similar.

Similarly documented by the Illinois Education Council was the presence of a higher percentage of students being ethnically/racially diverse in schools with a low teacher quality index as compared to a low percentage of students being ethnically/racially diverse in schools with a higher teacher quality index (Peske & Haycock, 2006). The Illinois Education Council established a teacher quality index utilizing multiple measures (i.e., teacher experience, education, emergency or provisional credentials, Basic Skills test failures, and average ACT composite scores) that had been documented to be related to student achievement (Peske & Haycock, 2006). The Illinois Education Council used a large database of 140,000 teachers in Illinois from the 2002-

2003 school year. The Illinois Education Council further categorized their results by dividing schools into quartiles based on their teacher quality index rating. Teachers in the top quartile were teachers with a higher teacher quality index rating than teachers in the lower quartile. In the lowest quartile students being ethnically/racially diverse was 88%. This percentage was substantially higher with only 1% of students being ethnically/racially diverse in the highest quartile.

Statement of the Problem

The No Child Left Behind Act (2002) placed tremendous impetus on accountability in the American educational system to address student performance and to narrow the achievement gap (Forte, 2010). As a result, emphasis on placing experienced, quality teachers in low performing schools became and remains an issue in the American educational system (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b). Inequitable distribution of experienced and quality teachers in public schools across the United States had been documented to have statistically significant relationships to student achievement. Additionally, high attrition rates in high-poverty schools the United States had, over the past several decades, created challenges for schools to attract quality teachers (Simon & Johnson; 2015). As a result, difficult-to-staff schools tend to attract beginning and inexperienced teachers (Borman & Dowling, 2008; Clotfelter, Ladd, & Vigdor, 2007; Hanushek, Kain, & Rivkin, 2004; Simon & Johnson, 2015).

The Coleman Report brought about awareness of the educational inequities in the United States with respect to students of diverse economic and ethnic/racial backgrounds (Borman & Dowling, 2010; Jimenez-Castellanos, 2012; Whitehurst, 2002). Furthermore,

A Nation at Risk and *What Matters Most: Teaching for America's Future* illuminated the need for quality teachers in the public schools (Bullough et al., 1998; National Commission on Teaching & America's Future, 1996). With passage of the Every Student Succeeds Act of 2015, the most recent reauthorization of the Elementary and Secondary Education Act, teacher quality continues to be a central focus when addressing federal accountability standards (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b). Although the highly qualified teacher provision of the No Child Left Behind Act is no longer a requirement under the Every Student Succeeds Act, teacher quality remains a priority.

Because the Every Student Succeeds Act allows states to establish their own accountability rating system, experienced quality teachers will continue to be needed in schools with a low performance rating (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b). As such, school administrators are challenged with placing experienced and high quality teachers in low performing schools.

Additionally, novice teachers lack the proper pedagogical training and experience to address the needs of low performing schools (Darling-Hammond, 2008). However, the placement of experienced and high quality teachers in schools with a low performance rating could provide a solution when trying to address the educational inequities in schools (Alliance for Excellent Education 2004; Greenlee & Brown, 2009; Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2012b).

Unfortunately, a high percentage of beginning teachers with little teaching experience are teaching in low performing schools as compared to a low percentage of beginning teachers in high performing schools (Darling-Hammond, 2008; Greenlee &

Brown, 2009; Lopez & Slate, 2014; Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2012a; Moreno & Slate, 2015; Peske & Haycock, 2006). Moreover, a high percentage of low performing schools with a high percentage of ethnically/racially diverse students are taught by beginning teachers (Gagnon & Mattingly, 2015; Peske & Haycock, 2006). Researchers (e.g., Clotfelter et al., 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b; Peske & Haycock, 2006) had well documented and established a relationship between student achievement and teacher experience. Furthermore, schools with a high percentage of beginning teachers and ethnically/racially diverse students had been established by researchers to be an indicator for low performing schools (Adamson & Darling-Hammond, 2012; Borman & Dowling, 2010; Goldhaber et al., 2015; Schmidt et al., 2011).

Schools with student who are economically disadvantaged, ethnically/racially diverse, and employ inexperienced teachers have been documented by researchers to be low performing schools (Adamson & Darling-Hammond, 2012; Borman & Dowling, 2010; Goldhaber et al., 2015; Schmidt et al., 2011). In North Carolina, Clotfelter et al. (2005) documented that Black students were more likely to be taught by inexperienced teachers. In another investigation, Peske and Haycock (2006) revealed that as teacher quality in Illinois schools decreased, the percent of Black and Hispanic students increased. Ethnically/racially diverse students are more likely to be taught by novice teachers (Clotfelter et al., 2005; Goldhaber et al., 2015; Peske & Haycock, 2006; Simon & Johnson, 2015).

Purpose of the Study

Four purposes were present in this journal-ready dissertation. The first purpose was to examine the degree to which the percentage of beginning teachers in traditionally configured elementary, middle, and secondary Texas schools differed as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics). The second purpose was to determine the extent to which differences were present in student ethnic/racial enrollment as a function of two distinction designations for traditionally configured elementary, middle, and secondary Texas schools. The third purpose was to ascertain whether trends were present in the percentage of beginning teachers and student ethnic/racial enrollment with respect to distinction designations in reading and in mathematics. The final purpose was to determine the degree to which prior trends established by Martinez-Garcia and Slate (2010, 2012a, 2012b), Moreno and Slate (2015), and Lopez and Slate (2014) were commensurate with the 2011-2012 through the 2014-2015 school years that were examined in this study.

Significance of the Study

Limited focus has been placed on beginning teachers as a function of accountability ratings in Texas public schools. The most recent studies were conducted by Moreno and Slate (2015), Lopez and Slate (2014), and Martinez-Garcia and Slate (2012a, 2012b). After an extensive search through the academic databases, only one other study by Martinez-Garcia et al. (2011) was available in which the relationship of student demographics and accountability ratings in Texas elementary schools was investigated. No published studies to date were located in which the percentage of

beginning teachers was examined as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for Texas middle and high schools. Additionally, no published studies were located in which the extent to which differences might be present in student enrollment by ethnicity/race as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for Texas middle and high schools was determined. To date, Lopez and Slate (2014) were the only researchers who examined the percentage of beginning teachers as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for Texas elementary schools. Because student achievement and teacher quality have been determined to be related in numerous studies (Adamson & Darling-Hammond, 2012; Boyd et al., 2008; Brophy, 1988; Clotfelter, Ladd, & Vigdor, 2007; Darling-Hammond, 2000), the results of this study may provide valuable information for educational leaders and teacher preparation programs for addressing the needs of prospective teachers.

Definition of Terms

Terms that are important to the three research studies that were conducted in this journal-ready dissertation are defined below.

Academic Achievement in Mathematics

The Texas Education Agency (2014a) defined Academic Achievement in Mathematics as a distinction label awarded to Texas public school “campuses for outstanding academic achievement in mathematics based on performance in the top 25 percent of its campus comparison group” (p. 56).

Academic Achievement in Reading/English Language Arts

The Texas Education Agency (2014a) defined Academic Achievement in Reading/English Language Arts as a distinction label awarded to Texas public school “campuses for outstanding achievement in reading/English language arts (ELA) based on performance in the top 25 percent of its campus comparison group” (p. 54).

Asian

The Texas Education Agency (2010) defined a person of Asian ethnicity as “a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam” (p. 7).

Beginning Teacher

The Texas Education Agency (2014b) defined beginning teachers as “a teacher reported with zero years of experience” (p. 27).

Black

The Texas Education Agency (2010) defined a person of Black ethnicity as “a person having origins in any of the black racial groups of Africa” (p. 7).

Distinction Designation

Distinction designations are awarded to campuses and districts for high performance on indicators other than the indicators that are used to determine accountability ratings. Distinction designations are awarded in English language arts, math, science, social studies, student progress, closing the performance gap, and postsecondary readiness (Texas Education Agency, 2014b, p. 7). Emphasis for earning a distinction designation is based on students performing at a higher level in contrast to

students performing at a minimum satisfactory level of performance. Three labels for classifying distinction designations include *Distinction Earned*, *No Distinction Earned*, and *Not Eligible* (Texas Education Agency, 2015).

Distinction Earned

The Texas Education Agency (2014a) defined a campus or district as *distinction earned* if the campus or district earned a rating as *Met Standard* and achieved a distinction designation. Campuses must achieve an acceptable rating in all four indexes (i.e., student achievement, student progress, closing performance gaps, and postsecondary readiness) to be classified as Met Standard. Additionally, to qualify for any given distinction label (i.e., English language arts, math, science, social studies, student progress, closing the performance gap, and postsecondary readiness) campuses' attendance rates, assessments, and participation in advanced courses (Advanced Placement or International Baccalaureate) are evaluated with respect to grade level (Texas Education Agency, 2015).

Ethnicity

The Texas Education Agency (2014b) defined ethnicity as any individual belonging to any of the following groups: (a) Black; (b) Hispanic; (c) White; (d) American Indian; (e) Asian; (f) Pacific Islander; and (g) two or more races.

Hispanic

The Texas Education Agency (2010) defined a person of Hispanic ethnicity as “a person of Cuban, Mexican, Puerto Rican, South or Central American, other Spanish culture or origin, regardless of race” (p. 7).

Met Standard

A rating of Acceptable is assigned to districts and campuses that meet the target on all indexes (i.e., student achievement, student progress, closing performance gaps, and postsecondary readiness) for which it has performance data available (Texas Education Agency, 2014b, p. 13). A met standard label is the minimum requirement for a campus to be eligible for consideration in any of the following distinction designations: (a) English language arts; (b) math; (b) science; (c) social studies; (d) student progress; (e) closing the performance gap; or (f) postsecondary readiness (Texas Education Agency, 2014b, p. 53).

White

The Texas Education Agency (2010) defined a person of White ethnicity as “a person having origins in any of the original peoples of Europe, the Middle East, or North Africa.” (p. 7).

Theoretical Framework

A theoretical framework for this journal-ready dissertation was provided by the theory of social justice in education. Social justice is about equity and fairness in society with regard to various types of social groups identified by gender, gender identity, ethnicity/race, disability, and class who may have been marginalized, oppressed, or exploited by other members of society (Blackmore, 2013). Within social justice theory is the theory of equity of access. Equity of access is about providing equal opportunity to all members of society with regard to learning (Shields, 2013). Shield (2013) posited that equity of access can include more than just opportunity to learning such as access to all educational programs for all members of society. Additionally, social justice theorists

propose reform within society to address the inequities in society (Bates, 2013; Blackmore, 2013; Cazden, 2012; Shields, 2013). Due to the inequitable access to experienced and quality teachers for students of diverse ethnic/racial backgrounds, social justice theory in education provided the premise for this journal-ready dissertation (Borman & Dowling, 2010; Clotfelter et al., 2005; Jimenez-Castellanos, 2012; Whitehurst, 2002).

Procedures

Following approval by the dissertation committee, approval was then sought from the Sam Houston State University Institutional Review Board. Once the Sam Houston State University Institutional Review Board approved this research study, archival data were then acquired from the Texas Academic Performance Reports. Archival data were downloaded from the 2012-2013, 2013-2014, and 2014-2015 school years for all traditionally configured (i.e., K-5, 6-8, and 9-12) schools. The Texas Academic Performance Report dataset provided was converted into a SPSS data file for analyses purposes.

Literature Review Search Procedures

For the purpose of this journal-ready dissertation, the literature regarding teacher and student characteristics and their relationship to accountability ratings was examined. Phrases that were used in the search for relevant literature were: *beginning teachers*, *accountability rating*, *low performing*, *teacher quality*, and *teacher effectiveness*. All searches were conducted through the EBSCO Host database for scholarly (peer reviewed) articles. Recent academic journals that contained scholarly peer reviewed articles were reviewed.

Key word searches for *beginning teachers* yielded 19,889 results and by narrowing the range from 2000 to 2016 yielded and limiting articles to include only peer reviewed articles, the search was reduced 7,850. This number was reduced to one result when the term *accountability rating* was added to the search. For this reason, when the term *low performing* was used in place of accountability rating, the results were reduced to 16 articles. A key word search for *teacher quality* between 2000 and 2016 and limiting articles to scholarly peer reviewed articles yielded 13,154 articles, but was reduced to 573 and 1,351 respectively when *beginning teacher* and *teacher experience* were also included in the search. A key word search for *novice teacher* between 2000 and 2016 and limiting articles to scholarly peer reviewed articles yielded 4,452 results and was reduced to 346 articles when the term *teacher quality* was added to the search.

Delimitations

The three research studies in this journal-ready dissertation were delimited to the use of two academic distinction designations (i.e., Achievement in Reading/English Language Arts and Mathematics) in the Texas Academic Performance Reports. These two academic distinction designations are accountability ratings assigned to schools by the Texas Education Agency. Data analyzed in this journal-ready dissertation were entirely quantitative data that were available at the Texas Academic Performance Reports. For the first study in this journal-ready dissertation, data for the 2012-2013 and 2014-2015 school years were analyzed. For the second and third studies, data for the 2012-2013 through the 2014-2015 school years were analyzed.

The focus of the three research investigations was on the degree to which differences were present in the percentage of beginning teachers and in the percentage of

student enrollment of the four major ethnic/racial groups (i.e., Asian, Black, Hispanic, and White) in Texas public schools. As such, data were delimited to these teacher and student characteristics. Finally, analyses were delimited to traditionally configured (i.e., K-5, 6-8, and 9-12) schools. In the first article, data on only elementary schools were examined. In the second and third articles, the emphasis was placed on middle school and on high schools, respectively.

Limitations

For the purpose of this journal-ready dissertation, the degree to which teacher (i.e., beginning teachers) and student (i.e., ethnicity/race) characteristics by accountability ratings (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) in all traditionally configured schools (i.e., K-5, 6-8, & 9-12) in Texas might differ were examined. As such, the independent variables (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) in this study were limited to two of the seven distinction designations in Texas' accountability rating system. Additionally, the sample in this study was limited to traditionally configured schools (i.e., K-5, 6-8, & 9-12) excluding all other types of public schools. Moreover, the independent variables and the dependent variables (i.e., percentages of beginning teachers and student demographics) were not controlled due to the causal-comparative nature of the study (Johnson & Christensen, 2012).

Assumptions

For the purpose of this journal-ready dissertation, the assumption was made that student demographic, teacher demographic, and accountability rating data from Texas public schools were accurately reported to the Texas Education Agency. Another

assumption was that these data in the Texas Academic Performance Reports were accurate. The consistency in which all Texas public schools collect and report teacher and student data was assumed to be consistent and accurate statewide. A final assumption was that the Texas Education Agency's use of audits, when irregularities in data reporting and collection by local education agencies exist, results in corrections made by the local education agencies to ensure accuracy in the reporting and collection of data.

Organization of the Study

In this journal-ready dissertation, three research investigations were generated. In the first journal-ready dissertation article, the research questions that were addressed were on the degree to which differences were present in the percentage of beginning teachers and in student enrollment percentage by ethnicity/race (i.e., Asian, Black, Hispanic, and White) as a function of academic achievement distinction (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) in Texas traditionally configured elementary schools for the 2012-2013 and 2014-2015 school years. In the second journal-ready dissertation article, the research questions that were answered were on the extent to which differences existed in the percentage of beginning teachers and in the percentage of student enrollment by ethnicity/race (i.e., Asian, Black, Hispanic, and White) as a function of academic achievement distinction (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) in Texas traditionally configured middle schools for the 2012-2013 through 2014-2015 school years. In the third journal-ready dissertation article, the research questions that were examined were on the degree to which differences existed in the

percentage of beginning teachers and in the percentage of student enrollment by ethnicity/race (i.e., Asian, Black, Hispanic, and White) as a function of academic achievement distinction (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) in Texas traditionally configured high schools for the 2012-2013 through 2014-2015 school years.

For this journal-ready dissertation, five chapters are present with three different manuscripts. Chapter I included the statement of the problem, purpose of the study, significance of the study, definition of terms, theoretical framework, procedures, literature review and search procedures, delimitations, limitations, assumptions, and organization of the study. Chapter II is comprised of the research investigation on the differences in beginning teacher percentages and student ethnic/racial groups as a function of academic achievement distinctions in elementary schools. Chapter III is comprised of the research investigation on the differences in beginning teacher percentages and student ethnic/racial groups as a function of academic achievement distinctions in middle schools. Chapter IV is comprised of the research investigation on the differences in beginning teacher percentages and student ethnic/racial groups as a function of academic achievement distinctions in high schools. Finally, in Chapter V, an overview of the results of the three research articles was provided. Additionally, implications for future practice and policy, along with recommendations for future research from the three research articles, was provided.

CHAPTER II

DIFFERENCES IN TEACHER AND STUDENT CHARACTERISTICS BY TEXAS ELEMENTARY SCHOOL DISTINCTION DESIGNATIONS

This dissertation follows the style and format of *Research in the Schools (RITS)*.

Abstract

In this investigation, the degree to which the percentage of beginning teachers and student ethnicity/race enrollment percentages in elementary schools differed between two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) was determined. Data were obtained from the Texas Academic Performance Reports for the 2012-2013 through the 2015-2016 school years. In all analyses, statistically significant differences were present in the percentage of beginning teachers as a function of distinction designation. Higher percentages of beginning teachers were present in elementary schools that did not meet the two distinction designations than in schools that did meet the two distinction designations. With respect to student enrollment percentages by ethnicity/race, higher percentages of Asian students and lower percentages of Black and White students were present at schools that met the two distinction designations.

Keywords: Beginning teachers, Distinction designation, Elementary schools, Ethnic/racial enrollment, Mathematics, Reading/English Language Arts

DIFFERENCES IN TEACHER AND STUDENT CHARACTERISTICS BY TEXAS ELEMENTARY SCHOOL DISTINCTION DESIGNATIONS

For several decades, attention has been focused on improving student achievement (Darling-Hammond, 2000; Shen, Mansberger, & Yang, 2004), especially in light of the release of *A Nation At Risk: The Imperative for Educational Reform* in 1983. *A Nation At Risk* set the stage for subsequent changes in education reform (Hunt, 2008). Accordingly, in 2001, the No Child Left Behind Act (2002) was passed. In the No Child Left Behind Act, accountability standards were a priority for all state and federally funded public K-12 schools when addressing issues involving student achievement (Darling-Hammond & Sykes, 2003; Terry, 2010). However, in December of 2015, the Every Student Succeeds Act was signed by President Obama replacing the No Child Left Behind Act. The Every Student Succeeds Act is the most recent reauthorization of the Elementary and Secondary Education Act. Consequently, all state and federally funded public K-12 schools are no longer required to ensure highly qualified teachers are hired with the federal government relinquishing much of the responsibility for accountability standards to the states (Alliance for Excellent Education, 2016a; Hanushek, Ruhose, & Woessmann, 2016; Norville, 2016). The Every Student Succeeds Act does require states to outline their policy regarding any educational inequities that may exist in schools with students of color and low income families (Alliance for Excellent Education, 2016a). Nevertheless, many states, including Texas, currently have their own requirements for what qualifies a teacher as highly qualified including standards for accountability of all state funded public schools (Texas Education Code, 2005).

Because of the No Child Left Behind Act and the Every Student Succeeds Act law, numerous researchers (Clotfelter, Ladd, Vigdor, & Wheeler, 2007; Darling-Hammond & Sykes, 2003; Gagnon & Mattingly, 2015; Ingersoll, 2001; Peske & Haycock, 2006; Rivkin, Hanushek, & Kain, 2005; Ronfeldt, Loeb, & Wyckoff, 2013; Terry, 2010) had placed their focus on low performing schools with Hispanic and Black students, as well as students in poverty. Researchers (Clotfelter et al., 2007; Ronfeldt et al., 2013; Simon & Johnson, 2015) had identified specific demographic characteristics (e.g., socioeconomic status, Hispanic, and Black) as areas of concern due to the high teacher attrition rates and high percentages of inexperienced teachers. Using the National Center for Education Statistics data, Sutchter, Darling-Hammond, and Carver-Thomas (2016) established the presence of an 8% teacher attrition rate in the United States in the 2012-2013 school year. However, the 8% attrition rate does not necessarily reflect the attrition rates of any particular state. For example, Arizona had the highest attrition rate at 18.8%, compared to an attrition rate of only 3% in Massachusetts (Sutchter et al., 2016). Sutchter et al. (2016) further documented approximately 25% of teachers were in their first or second year of teaching in high-poverty schools in Arizona for the 2012-2013 school year. Because statistically significant relationships have been documented between student achievement and teacher experience, hiring experienced teachers to teach in low performing schools where the need is the greatest is crucial in addressing educational inequities in schools.

Elementary Schools and Teacher Quality

Because teacher quality and student achievement are related, the need to have well-qualified teachers in elementary schools is vital to the academic and emotional

welfare of students (Brophy, 1988; Darling-Hammond, 2000; Darling-Hammond, 2007; McCormick & O'Connor, 2015; Wright, Horn, & Sanders, 1997). With respect to their cognitive development, students at the elementary level need a solid academic foundation on which to build (Gormley, Phillips, Newmark, Welte, & Adelstein, 2011; Tareilo, 2013; Valsiner, 2005). Teacher quality needs to be a priority at this level by school administrators so that student success is not stifled and students are academically successful (Clotfelter et al., 2007; Wright et al., 1997).

Due to high-stakes testing and accountability, school administrators are faced with the responsibility of ensuring quality teachers are hired for their school campuses. Because of empirically documented relationships between teacher quality and student achievement (Adamson & Darling-Hammond, 2012; Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2008; Clotfelter et al., 2007; Darling-Hammond, 2000; Peske & Haycock, 2006), school administrators do not have much flexibility when their campuses receive a poor accountability rating due to low student achievement. Low student performance on standardized state assessments can result in a school receiving a low accountability rating by the state and influence a school's adequate yearly progress (Darling-Hammond & Sykes, 2003, Foley & Nelson, 2011; Terry, 2010). Readers should note that the Every Student Succeeds Act has eliminated this system of accountability. Although the Every Student Succeeds Act has eliminated the adequate yearly progress provision of the No Child Left Behind Act, states that have been identified to need improvement will be allowed up to four years to meet the minimum state requirements "to exit the comprehensive support and improvement status" (Alliance for Excellent Education, 2016a, p. 1). If a campus fails to meet the minimum state mandated criteria at the end of

four years, that campus will be required to undergo intensive intervention as specified by the state.

In light of the No Child Left Behind Act (2002), school leaders and administrators adopted policies to ensure high quality teachers were hired in their campuses (Rutledge, Harris, & Ingle, 2010). Although the provision in the No Child Left Behind Act for highly qualified teachers is no longer a requirement in the Every Student Succeeds Act, the impetus to hire high quality teachers remains to avoid being placed on an improvement status with the state. As such, hiring practices needed to be aligned with the needs of the campus, and if the needs of the campus were reflective of low performance or low student achievement, then hiring quality teachers would be a high priority. In addition to ensuring quality teachers are hired, school administrators should ensure the teachers being hired possess the necessary experience and pedagogical content skill to address the needs of the teaching assignment (Darling-Hammond, 2008).

In addition, careful deliberations should occur regarding placing first year teachers in low performing schools under consideration for intensive intervention (Alliance for Excellent Education, 2016a; Darling-Hammond, 2008; Foley & Nelson, 2011). Determining where to place first year teachers by school administrators should include attention to the candidate's teaching certification, experience, and any available teacher induction and mentor programs (Darling-Hammond, 2008; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004). Moreover, if new teachers are hired, administrators should ensure systems are in place to support new teachers with induction and mentoring programs (Coronado, 2009; Darling-Hammond, 2008; Peske &

Haycock, 2006; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004).

Beginning Teachers and Student Demographics

Researchers (e.g., Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia, LaPrairie, & Slate, 2011; Martinez-Garcia & Slate, 2012a; Moreno & Slate, 2015) documented the presence of statistically significantly higher percentages of novice teachers in low performing schools than in higher performing schools. Moreover, beginning teachers were more likely to be placed in schools with students of a diverse population (e.g., Black, Hispanic, and low socioeconomic status) with a poor accountability rating (Alliance for Excellent Education, 2016a; Darling-Hammond, 2008; Foley & Nelson, 2011; Gagnon & Mattingly, 2015). Because novice teachers have little to no teaching experience, novice teachers have greater challenges in their first year.

In fact, researchers (e.g., Clotfelter, Ladd, & Vigdor, 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b; Peske & Haycock, 2006) documented statistically significant relationships between teaching experience and student achievement. In a recent empirical investigation of Texas elementary schools, Moreno and Slate (2015) revealed that statistically significant differences were present in the percentage of beginning teachers by school accountability rating for the 2010-2011 school year. Moreno and Slate (2015) established that slightly over 3% of teachers in Exemplary Schools were novice, or first year teachers, in comparison to over 7% of the teachers in Academically Unacceptable Schools being novice or first year teachers. In a similar study, Lopez and Slate (2014) revealed that a statistically significant difference was present in the percentage of beginning teachers between elementary schools that

received an academic achievement distinction and schools that did not receive a distinction in Texas during the 2013-2014 school year. Lopez and Slate (2014) established that schools that did not receive a Mathematics Achievement Distinction Designation had slightly over 7% beginning teachers in comparison to 6% of beginning teachers in schools that did receive a Mathematics Achievement Distinction Designation. Lopez and Slate (2014) further revealed that schools that did not receive a Reading Achievement Distinction Designation were comprised of slightly over 7% beginning teachers in comparison to 6% of beginning teachers in schools that received a Reading Achievement Distinction Designation.

Similarly documented by the Wisconsin Teacher Distribution Project was the presence of a higher percentage of inexperienced teachers in low performing elementary schools than in higher performing schools (Peske & Haycock, 2006). Peske and Haycock (2006) revealed that in elementary schools in which students performed poorly in reading in the 2004-2005 school year, 24% of teachers were inexperienced as opposed to 12% of inexperienced teachers in schools in which students performed well in reading. Peske and Haycock (2006) further revealed that in elementary schools in which students performed poorly in mathematics in the 2004-2005 school year, 24% of teachers were inexperienced as opposed to 13% of inexperienced teachers in schools in which students performed well in mathematics. Moreover, Peske and Haycock documented that schools with more than 62% students who were either Black or Hispanic had 26% novice teachers as opposed to 12% novice teachers in schools with less than 7% of students who were either Black or Hispanic.

With regard to teacher quality, Peske and Haycock (2006) revealed that schools in Illinois with the highest percentage Black and Hispanic students were taught by lower quality teachers as contrasted with schools with lower percentage of Black and Hispanic schools with higher quality teachers. Peske and Haycock indicated that teacher quality was measured based on teaching experience, level of education, and academic aptitude. Additionally, schools with higher percentages of Black and Hispanic students were more likely to be low performing schools with low quality teachers (Clotfelter, Ladd, & Vigdor, 2005; Goldhaber, Lavery, & Theobald, 2015; Peske & Haycock, 2006; Simon & Johnson, 2015). In North Carolina, Black and Hispanic students were more likely taught by inexperienced teachers in comparison to White students, indicating an inequitable distribution of experienced teachers “in a way that disadvantages Black students” (Clotfelter et al., 2005, p. 1).

Statement of the Problem

The No Child Left Behind Act (2002) placed tremendous impetus on accountability in the American educational system to address student performance and narrowing the achievement gap (Forte, 2010). As a result, placing experienced, quality teachers in low performing schools became and remains an issue in the American educational system (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b). Inequitable distribution of experienced and quality teachers in public schools across the United State had been documented to have statistically significant relationships to student achievement. Additionally, high attrition rates in high-poverty schools the United States had, over the past several decades, created challenges for schools to attract quality teachers (Simon & Johnson; 2015). As a result,

difficult-to-staff schools tend to attract beginning and inexperienced teachers (Borman & Dowling, 2008; Clotfelter, Ladd, & Vigdor, 2007; Hanushek, Kain, & Rivkin, 2004; Simon & Johnson, 2015).

Schools with students who are economically disadvantaged, ethnically/racially diverse, and employ inexperienced teachers have been documented by researchers (Adamson & Darling-Hammond, 2012; Borman & Dowling, 2010; Goldhaber et al., 2015; Schmidt, Cogan, & McKnight, 2011) to be a statistically significant indicator of low performing schools. In North Carolina, Clotfelter et al. (2005) documented that Black students were more likely to be taught by inexperienced teachers. In another investigation, Peske and Haycock (2006) revealed that as teacher quality in Illinois schools decreased, the percent of Black and Hispanic students increased. Ethnically diverse students are more likely to be taught by novice teachers (Clotfelter et al., 2005; Goldhaber et al., 2015; Peske & Haycock, 2006; Simon & Johnson, 2015).

Purpose of the Study

Four purposes were present in this investigation. The first purpose was to examine the degree to which the percentage of beginning teachers in Texas elementary schools differed as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics). The second purpose was to determine the extent to which differences were present in the percentage of student enrollment by ethnicity/race as a function of two distinction designations for Texas elementary schools. The third purpose was to ascertain whether trends were present for the percentage of beginning teachers and student demographic characteristics with respect to distinction designations in reading

and in mathematics. The final purpose was to determine the degree to which prior trends established by Martinez-Garcia and Slate (2010, 2012a, 2012b), Moreno and Slate (2015), and Lopez and Slate (2014) were commensurate with the 2012-2013 through the 2015-2016 school years that were examined in this study.

Significance of the Study

Limited focus had been placed on beginning teachers at the elementary level in Texas public schools. The most recent studies were conducted by Moreno and Slate (2015) and by Lopez and Slate (2014). Prior to their studies, Martinez-Garcia and Slate (2012a) conducted an empirical investigation in Texas. After an extensive search through the academic databases, only one other study by Martinez-Garcia et al. (2011) was available in which the relationship of student demographics and accountability ratings in Texas elementary schools was investigated. Because student achievement and teacher quality were correlated in numerous studies (Adamson & Darling-Hammond, 2012; Boyd et al., 2008; Brophy, 1988; Clotfelter, Ladd, & Vigdor, 2007; Darling-Hammond, 2000), valuable information for educational leaders and teacher preparation programs for addressing the needs of prospective teachers were provided in the results of this study.

Research Questions

The following research questions were addressed in this study: (a) What is the difference in the percentage of beginning teachers at Texas elementary schools between schools that earned a distinction designation (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) and schools that did not earn a distinction designation in the 2012-2013, 2014-2015, and

2015-2016 school years?; and (b) What is the difference in the overall student enrollment percentages by ethnicity/race (i.e., Asian, White, Hispanic, and Black) for Texas elementary schools between schools that earned a distinction designation and schools that did not earn a distinction designation in the 2012-2013, 2013-2014, 2014-2015, and the 2015-2016 school years? The extent to which the findings for the percentages of beginning teachers in Texas elementary schools by accountability rating were similar for the two school years of data analyzed was examined. Furthermore, the degree to which the findings for the student demographic characteristics in Texas elementary schools by accountability rating were similar for the three school years of data was determined.

Method

Research Design

A non-experimental causal-comparative research design was used in this study (Cresswell, 2014; Johnson & Christensen, 2012). Due to the nature of non-experimental causal-comparative research, no manipulation of the independent variables occurred (Johnson & Christensen, 2012). The data obtained and analyzed in this study were archival quantitative data. Independent variables for this study were represented by distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for traditionally configured elementary schools in Texas whereas the dependent variables were represented by school characteristics (i.e., percentages of beginning teachers and student demographic percentages). The two distinction designations correspond to the current accountability ratings assigned to Texas schools by the Texas Education Agency.

Participants

Data from the Texas Academic Performance Reports for all traditionally configured (i.e., K-5) public elementary schools for the 2012-2013 through the 2015-2016 school years in the State of Texas were utilized in this study. Only data from traditional public elementary schools were analyzed. Not present in this investigation were data on any non-traditional or charter schools because of substantial differences between them and traditional schools.

Data specific to the percentages of beginning teachers as a function of Academic Achievement in Reading/English Language Arts and Mathematics distinction designations in the Texas Academic Performance Reports were obtained for analysis. Distinction designation labels included *Distinction Earned*, *No Distinction Earned*, and *Not Eligible* (Texas Education Agency, 2014a). Only schools that earned a *Met Standard* accountability rating may qualify for the aforementioned distinction label of *Distinction Earned*. The Texas Education Agency uses five accountability rating categories: (a) Met Standard; (b) Met Alternative Standard; (c) Improvement Required; (d) Not Rated; and (e) Not Rated: Data Integrity Issues. Distinction designations, as defined by the Texas Education Agency (2014a), were “awarded in recognition of outstanding achievement in specific areas” (p. 53) such as Academic Achievement in Reading/English Language Arts or Academic Achievement in Mathematics. Each academic distinction designation is awarded based on outstanding achievement (Texas Education Agency, 2014a). Additionally, The Texas Education Agency (2014b) defined a beginning teacher as “a teacher reported with zero years of experience” (p. 27).

Procedures

Archival data were downloaded from the Texas Academic Performance Reports in the Texas Education Agency's website. Data were acquired on all Texas public elementary schools with a K-5 grade span configuration from the 2012-2013 through the 2015-2016 school years. Specific variables on which information were downloaded were: (a) percent of beginning teachers; (b) distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics); and (c) student enrollment percentages by student demographics (i.e., Asian, Black, Hispanic, and White) were obtained.

The Texas Education Agency's distinction designations were awarded based on a variety of qualifications, or indicators, by school level. The Academic Achievement in Reading/English Language Arts distinction was awarded for academic achievement in Reading/English Language Arts based on four indicators for the elementary level. The Texas Education Agency (2014a) utilized the following indicators to determine eligibility: (a) Attendance rate; (b) Greater than expected growth in reading/English language arts; (c) Grade 3 reading performance (Level III); and (d) Grade 4 writing performance (Level III). The Academic Achievement in Mathematics was awarded for academic achievement in mathematics based on three indicators for the elementary level. The Texas Education Agency (2014a) utilized the following indicators to determine eligibility: (a) Attendance rate; (b) Greater than expected growth in mathematics; and (c) Grade 5 math performance (Level III).

Results

Prior to conducting inferential statistics to determine whether differences were present for beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, checks were conducted to determine the extent to which these data were normally distributed. Because the majority of the normality values were within the limits of normality, ± 3 (Onwuegbuzie & Daniel, 2002), parametric independent samples *t*-tests were conducted to answer the first research question.

For the 2012-2013 school year for Texas elementary schools, the parametric independent samples *t*-test revealed a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(1844.37) = 3.43, p = .001$. This difference represented a below small effect size (Cohen's *d*) of 0.14 (Cohen, 1988). Elementary schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (5.79%) than did elementary schools that earned a distinction designation (5.05%). Readers are directed to Table 2.1 for the descriptive statistics for this analysis.

 Insert Table 2.1 about here

Concerning the 2013-2014 school year for Texas elementary schools, the parametric independent samples *t*-test revealed a statistically significant difference in the

percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(2673.52) = 5.10, p < .001$. This difference represented a below small effect size (Cohen's d) of 0.17 (Cohen, 1988). Similar to the previous school year, elementary schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (8.85%) than did elementary schools that earned a distinction designation (7.15%). Table 2.1 contains the descriptive statistics for this analysis.

With respect to the 2014-2015 school year for Texas elementary schools, a statistically significant difference was revealed in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(1632.53) = 8.04, p < .001$. This difference represented a small effect size (Cohen's d) of 0.33 (Cohen, 1988). Similar to the previous two school years, elementary schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (7.23%) than did elementary schools that earned a distinction designation (5.29%). Delineated in Table 2.1 are the descriptive statistics for this analysis.

Regarding the 2015-2016 school year for Texas elementary schools, a statistically significant difference was yielded in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(1541.40) = 6.79, p < .001$. This difference represented a small effect size (Cohen's d) of 0.28 (Cohen, 1988). Congruent

with the previous three school years, elementary schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (6.88%) than did elementary schools that earned a distinction designation (5.26%). Presented in Table 2.1 are the descriptive statistics for this analysis.

Next, the percentage of beginning teachers for Texas elementary schools was examined between schools that earned a distinction designation in mathematics and schools that did not earn such a distinction. Concerning the 2012-2013 school year for Texas elementary schools, the parametric independent samples *t*-test revealed a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation, $t(1180.79) = 3.54, p < .001$. This difference represented a below small effect size (Cohen's *d*) of 0.16 (Cohen, 1988). Elementary schools in Texas that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of beginning teachers (5.75%) than did elementary schools that earned a distinction designation (4.94%). Readers are directed to Table 2.2 for the descriptive statistics for this analysis.

 Insert Table 2.2 about here

Concerning the 2013-2014 school year for Texas elementary schools, a statistically significant difference was yielded in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did

not earn this distinction designation, $t(1470.03) = 2.56, p = .011$. This difference represented a below small effect size (Cohen's d) of 0.10 (Cohen, 1988). Similar to the previous school year, elementary schools in Texas that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of beginning teachers (8.54%) than did elementary schools that earned a distinction designation (7.54%). Table 2.2 contains the descriptive statistics for this analysis.

With respect to the 2015-2016 school year for Texas elementary schools, a statistically significant difference was yielded in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation, $t(971.51) = 4.98, p < .001$. This difference represented a small effect size (Cohen's d) of 0.22 (Cohen, 1988). Congruent with the previous two school years, elementary schools in Texas that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of beginning teachers (6.71%) than did elementary schools that earned a distinction designation (5.41%). Presented in Table 2.2 are the descriptive statistics for this analysis.

With respect to the second research question, the dependent variable consisted of the percentages of student enrollment of four student demographic groupings (i.e., Asian, Black, Hispanic, and White). As such, a multivariate analysis of variance (MANOVA) statistical analysis was conducted separately for the Academic Achievement in Reading/English Language Arts and for the Academic Achievement in Mathematics designation distinctions. Prior to conducting the MANOVA procedures, the underlying assumptions for normality of the four dependent variables for each independent variable were checked. Specifically examined were Box's Test of Equality of Covariance and the

Levene's Test of Equality of Error Variances. Although these assumptions were not met, Field (2013) contends that the MANOVA is sufficiently robust that a violation can be withstood.

For the 2012-2013 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = 1.00$, $p = .02$, partial $\eta^2 = .004$, in student enrollment percentages by ethnicity/race for Texas elementary schools between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, the effect size that was present was a below small effect size. Univariate follow-up analysis of variance (ANOVA) procedures were then calculated to determine which particular student ethnic/racial grouping (i.e., Asian, Black, Hispanic, and White) differed between the two school distinction designations. The ANOVA yielded statistically significant difference in the percentage of Asian student enrollment between schools that earned a distinction in Reading/English Language Arts and schools that did not earn this distinction, $F(4, 2655) = 5.98$, $p = .02$, partial $\eta^2 = .002$. A below small effect size was present for the Asian student group. Elementary schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Asian students (4.05%) than did elementary schools that did not earn this distinction designation (3.28%).

Statistically significant differences were not present, however, in the percentage of Black student enrollment, $F(4, 2655) = 1.54$, $p = .21$; in the percentage of Hispanic student enrollment, $F(4, 2655) = 1.22$, $p = .27$, and in the percentage of White student enrollment, $F(4, 2655) = 1.51$, $p = .22$. Similar percentages of Black, Hispanic, and

White students were enrolled in both the elementary schools that meet this particular distinction designation and in elementary schools that did not meet this particular distinction designation. Readers are directed to Table 2.3 for the descriptive statistics for this analysis.

 Insert Table 2.3 about here

Concerning the 2013-2014 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .98$, $p < .001$, partial $\eta^2 = .02$, in overall student enrollment percentages by ethnicity/race for Texas elementary schools between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn this distinction for the percentage of Asian students, $F(4, 4216) = 76.94$, $p < .001$, partial $\eta^2 = .02$; and for the percentage of White students, $F(4, 4216) = 9.81$, $p = .002$, partial $\eta^2 = .002$. The effect sizes for these two statistically significant differences were small and below small, respectively. Although not statistically significant at the conventional .05 level, near-statistically significant differences were present in the percentage of Black students, $F(4, 4216) = 3.34$, $p = .07$; and in the percentage of Hispanic students, $F(4, 4216) = 3.25$, $p = .07$.

Similar to the previous school year, elementary schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly

higher percentage of Asian students (4.67%) than did elementary schools that did not earn this distinction designation (2.62%). Elementary schools that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of White students (30.54%) than did elementary schools that earned this distinction (27.67%). Similar percentages of Black and Hispanic students were enrolled in both elementary schools that met this particular distinction designation and in elementary schools that did not meet this particular distinction designation. Table 2.4 contains the descriptive statistics for this analysis.

Insert Table 2.4 about here

Regarding the 2014-2015 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .98$, $p < .001$, partial $\eta^2 = .02$, in overall student enrollment percentages by ethnicity/race for Texas elementary schools between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn a distinction in the percentage of Asian students, $F(4, 2698) = 18.87$, $p < .001$, partial $\eta^2 = .007$; and in the percentage of Black students, $F(4, 2698) = 28.04$, $p < .001$, partial $\eta^2 = .01$. The effect size for Asian students was below small, whereas the effect size for Black students was small (Cohen, 1988). Statistically

significant differences were not present in the percentage of Hispanic students, $F(4, 2698) = 2.09, p = .15$; and in the percentage of White students, $F(4, 2698) = 0.06, p = .80$.

Similar to the previous two school years, elementary schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Asian students (4.94%) than did elementary schools that did not earn this distinction designation (3.38%). Elementary schools that did not earn a distinction designation in Reading/English Language Arts had a statistically higher percentage of Black students (12.85%) than did elementary schools that earned this distinction designation (9.04%). Similar percentages of Hispanic and Black students were enrolled in both elementary school types. Delineated in Table 2.5 are the descriptive statistics for this analysis.

 Insert Table 2.5 about here

With respect to the 2015-2016 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .99, p < .001$, partial $\eta^2 = .01$, in overall student enrollment percentages by ethnicity/race for Texas elementary schools between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn a distinction in the percentage of Asian students, $F(4, 2759) = 20.92, p < .001$, partial $\eta^2 = .008$; and in the percentage of Black students, $F(4, 2759) =$

9.08, $p = .003$, partial $\eta^2 = .003$. Both effect sizes were in the below small range (Cohen, 1988). Statistically significant differences were not present in the percentages of Hispanic students, $F(4, 2759) = 0.009$, $p = .92$; and in the percentage of White students, $F(4, 2759) = 0.11$, $p = .75$.

Congruent with the previous three school years, elementary schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Asian students (5.15%) than did elementary schools that did not earn this distinction designation (3.47%). Commensurate with the previous school year's results, elementary schools that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Black students (12.41%) than did elementary schools that earned this distinction designation (10.27%). Presented in Table 2.6 are the descriptive statistics for this analysis.

 Insert Table 2.6 about here

For the 2012-2013 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .99$, $p < .001$, partial $\eta^2 = .01$, in student enrollment percentages by ethnicity/race for Texas elementary schools between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up ANOVAs yielded statistically significant differences between schools that earned a distinction in mathematics and schools that did not earn a distinction for the percentage of Asian

students, $F(4, 2655) = 26.48, p < .001$, partial $\eta^2 = .01$; and for the percentage of Black students, $F(4, 2655) = 4.89, p = .03$, partial $\eta^2 = .002$. A small effect size was present for the Asian student group and a below small effect size was present for the Black student group. Statistically significant differences were not present in the percentage of Hispanic students, $F(4, 2655) = 0.54, p = .46$; and in the percentage of White students, $F(4, 2655) = 0.50, p = .48$. Table 2.7 contains the descriptive statistics for this analysis.

 Insert Table 2.7 about here

Elementary schools in Texas that earned a distinction designation in mathematics had statistically significantly higher percentage of Asian students (4.87%) than did elementary schools that did not earn this distinction designation (3.10%). Elementary schools that did not earn a distinction designation in mathematics had a statistically higher percentage of Black students (12.12%) than did elementary schools that earned this distinction designation (10.45%). Similar percentages of Hispanic and Black students were enrolled in both elementary school types.

Concerning the 2013-2014 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .98, p < .001$, partial $\eta^2 = .02$, in overall student enrollment percentages by ethnicity/race for Texas elementary schools between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. Follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in mathematics and schools that did not earn a

distinction for the percentage of Asian students, $F(4, 4138) = 63.98, p < .001$, partial $\eta^2 = .02$; and for the percentage of White students, $F(4, 4138) = 9.97, p = .002$, partial $\eta^2 = .002$. A small effect size was present for the Asian student group and a below small effect size was present for the White student group. Statistically significant differences were not present in the percentage of Black students, $F(4, 4138) = 0.73, p = .39$; and in the percentage of Hispanic students, $F(4, 4138) = 2.34, p = .13$.

Similar to the previous school year, elementary schools in Texas that earned a distinction designation in mathematics had statistically significantly higher percentage of Asian students (4.89%) than did elementary schools that did not earn this distinction designation (2.80%). Elementary schools that did not earn a distinction designation in mathematics had a statistically higher percentage of White students (30.08%) than did elementary schools that earned this distinction designation (26.88%). Similar percentages of Hispanic and Black students were enrolled in both elementary school types. Delineated in Table 2.8 are the descriptive statistics for this analysis.

 Insert Table 2.8 about here

Regarding the 2015-2016 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .98, p < .001$, partial $\eta^2 = .02$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. Follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a

distinction in mathematics and schools that did not earn a distinction for the percentage of Asian students, $F(4, 2759) = 38.70, p < .001$, partial $\eta^2 = .01$; and for the percentage of Black students, $F(4, 2759) = 13.42, p < .001$, partial $\eta^2 = .005$. A small effect size was present for the Asian student group and a below small effect size was present for the White student group. Although not statistically significant at the conventional .05 level, near-statistically significant differences were present in the percentage of Hispanic students, $F(4, 2759) = 3.42, p = .07$; and in the percentage of White students, $F(4, 2759) = 3.40, p = .07$.

Congruent with the previous two school years, elementary schools in Texas that earned a distinction designation in mathematics had a statistically significantly higher percentage of Asian students (5.95%) than did elementary schools that did not earn this distinction designation (3.42%). Commensurate with the previous school year's results, elementary schools that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of Black students (12.41%) than did elementary schools that earned this distinction designation (9.52%). Table 2.9 contains the descriptive statistics for this analysis.

 Insert Table 2.9 about here

Discussion

In this empirical, multiyear statewide investigation, the degree to which differences were present in the percentage of beginning teachers between two Texas school accountability ratings was examined. Additionally, student enrollment

percentages by ethnicity/race were compared between two different school accountability ratings for Texas elementary schools. Furthermore, trends for both the percentage of beginning teachers and for student enrollment ethnic/racial percentages were determined. Finally, the results of this investigation and the new Texas accountability system were compared with the results from the Martinez-Garcia and Slate (2010, 2012a, 2012b) and Moreno and Slate (2015) studies on the previous Texas accountability system. In the next section, results will be summarized.

Texas elementary schools that did not earn the Academic Achievement in Reading/English Language Arts and the Academic Achievement in Mathematics distinction designations had statistically significantly higher percentages of beginning teachers than did elementary schools that earned this distinction in all four years of data that were analyzed. To determine the magnitude of the differences in the percentages of beginning teachers between schools that earned a distinction designation and schools that did not earn a distinction designation, Cohen's *ds* were calculated (Cohen, 1988). The array of the Cohen's *d* calculations in the percentages of beginning teachers for elementary schools that earned, or did not earn, the Reading/English Language Arts distinction designation analyses was from a low of 0.14 to a high of 0.33, with the average being 0.23 for the four years of data analyzed. As such, the average degree of practical significance of the statistically significant results was small. Though small, readers should note that the analyses conducted in this investigation consisted of aggregated data on thousands of Texas elementary school students. Students who were enrolled in elementary schools that did not meet the distinction designations had higher percentages of beginning teachers than did students who were enrolled in schools that did

meet these distinction designations. Table 2.10 contains the Cohen's d effect size calculations for the percentages of beginning teachers for elementary schools that earned, or did not earn, the Reading/English Language Arts distinction designation.

 Insert Table 2.10 about here

With regard to the mathematics distinction designation, the array of Cohen's d calculations in the percentages of beginning teachers for elementary schools that earned, or did not earn, this distinction designation analyses was from a low of 0.16 to a high of 0.22, with the average being 0.16 for the three years of data analyzed. As such, the average degree of practical significance of the statistically significant results was below small. Students who were enrolled in elementary schools that did not meet the distinction designations had higher percentages of beginning teachers than did students who were enrolled in schools that did meet these distinction designations. Table 2.10 contains the Cohen's d effect size calculations for the percentages of beginning teachers for elementary schools that earned, or did not earn, the mathematics distinction designation.

With respect to student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White), statistically significant differences between schools that earned a distinction designation in Reading/English Language Arts and mathematics schools and schools that did not earn these distinction designation, were present. Although statistically significant differences between two different distinction designations were present in this investigation, statistically significant differences were not present in all ethnic/racial student groups. Statistically significant differences were

not present in all four years analyzed for Hispanic students between the two different distinction designations. Additionally, the percentages of student enrollment for Black and White students were not consistently statistically significant across all four years analyzed. However, for all four school years analyzed, statistically significant differences were present for Asian students between the two different distinction designations.

Although not discussed in the Results section of this investigation, differences were clearly evident in the number of schools in the 2012-2013 school year that met and did not meet the Reading/English Language Arts distinction designation. The number of elementary schools that did not meet this distinction designation were 1,807, which was more than twice as many schools that did meet this distinction, 851. With respect to the 2013-2014 school year, schools that did not meet this distinction designation were 2,986, again more than twice as many schools that did meet this distinction, 1,232. Regarding the 2014-2015 school year, schools that did not meet this distinction designation were 1,976, again more than twice as many schools that did meet this distinction designation, 725. For the 2015-2016 school year, schools that did not meet this distinction designation were 2,018, again almost three times as many schools that did meet this distinction designation, 737.

Similarly, with regard to the mathematics distinction designation, differences were clearly evident in the number of schools in the 2012-2013 school year that met and did not meet this distinction designation. The number of elementary schools that did not meet this distinction designation were 2,018, which was more than three times as many schools that did meet this distinction, 640. With respect to the 2013-2014 school year,

schools that did not meet this distinction designation were 3,228, nearly three times as many schools that did meet this distinction, 912. For the 2015-2016 school year, schools that did not meet this distinction designation were 2,207, more than four times as many schools that did meet this distinction designation, 547.

Connections with Existing Literature

Researchers (e.g., Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2012a; Moreno & Slate, 2015) had documented the presence of statistically significantly higher percentages of novice teachers in low performing schools than in higher performing schools. Results of this multiyear, statewide investigation were congruent with the results of other researchers (Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2010, 2012a, 2012b; Moreno & Slate, 2015; Peske & Haycock, 2006) who established the presence of statistically significantly higher percentages of beginning teachers in lower performing schools than in higher performing schools. Similarly, results delineated herein were commensurate with Lopez and Slate (2014) who documented statistically significant differences in the percentage of beginning teachers between elementary schools that did not earn distinction designations in Reading/English Language Arts and mathematics and schools that did meet these distinctions designations. Comparatively, Peske and Haycock (2006) revealed that elementary schools in which students performed poorly in reading had a higher percentage of inexperienced teachers than in schools that performed well in reading.

Readers should be aware, however, that other researchers (e.g., Clotfelter et al., 2005; Goldhaber et al., 2015; Peske & Haycock, 2006) had not produced results entirely congruent with the results of this multiyear, statewide investigation. Findings in this

study were partially consistent with prior research regarding the overall student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White) for Texas elementary schools between schools that earned a distinction designation and schools that did not earn a distinction. For student characteristics, prior researchers (Clotfelter et al., 2005; Goldhaber et al., 2015; Peske & Haycock, 2006; Simon & Johnson, 2015) indicated racially/ethnically diverse students (i.e., Black and Hispanic) were more likely to be taught by novice teachers.

Implications for Policy and Practice

Based on the results of this empirical, multiyear statewide investigation, several implications for policy and practice can be made. First, Texas public school administrators should consider establishing policies to encourage placing more qualified and experienced teachers in low performing schools (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012a, 2012b). Second, hiring practices should be aligned with the needs of the campus. If the needs of the campus were reflective of consistently low student performance, then hiring experienced, quality teachers to fit the needs of the campus should take precedence over hiring inexperienced teachers.

Due to the inequitable distribution of quality teachers, educational leaders should examine their policies with regard to how their schools are staffed. As such, difficult-to-staff schools tend to be less attractive to well qualified and experienced teachers. If beginning teachers are to be considered for hire within low performing schools, educational leaders should be mindful of candidate's teaching certification, experience, and availability of a mentoring and induction program (Darling-Hammond, 2008;

Ingersoll & Smith, 2004; Ingersoll & Strong, 2011). Due to relationships established by researchers (e.g., Clotfelter et al., 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b, Peske & Haycock, 2006) between teaching experience and student achievement, ensuring new teachers are supported in their first year is crucial. Providing support to new teachers could reduce the likelihood of low student performance (Coronado, 2009; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004).

Recommendations for Future Research

In this study, the degree to which differences were present in the percentages of beginning teachers by school accountability rating for Texas elementary schools was examined. Given the consistent results that were obtained in this investigation of elementary schools, researchers should consider extending this study to middle schools and to high schools. The extent to which results delineated herein would generalize to middle schools or to high schools is not known. Another suggestion for future research would be to repeat this study in other states. The degree to which the results obtained herein would be generalizable to other states is not known. Furthermore, this study could also be extended to other teacher characteristics (i.e., route to being credentialed and certified, ethnicity/race, and content area) than just beginning teachers. Additionally, investigations could be conducted in which student demographic characteristics such as economic disadvantage, at-risk status, and English Language Learner are examined..

Conclusion

In this multiyear, Texas analysis, the degree to which the percentage of beginning teachers and student ethnicity/race enrollment percentages in Texas elementary schools

differed between two different distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) was addressed. Archival data were obtained for the 2012-2013 through the 2015-2016 school years for all traditionally configured schools. In all statistical analyses performed, statistically significant differences were yielded in the percentage of beginning teachers between the two different distinction designations. For each school year, higher percentages of beginning teachers were present in elementary schools that did not meet the two distinction designation. With regard to student enrollment percentages, lower percentages of Black students and White students were present in schools that did not meet the two distinction designation. Higher percentages of Asian students were present in schools that did meet the two distinction designations.

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Table 2.1

Descriptive Statistics for the Percentages of Beginning Teachers Between Schools That Met and Did Not Meet the Reading/English Language Arts Distinction Designation for the 2012-2013 Through the 2015-2016 School Years

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
2012-2013			
Met Distinction	851	5.05	4.96
Did Not Meet Distinction	1,807	5.79	5.55
2013-2014			
Met Distinction	1,232	7.15	9.37
Did Not Meet Distinction	2,986	8.85	11.00
2014-2015			
Met Distinction	725	5.29	5.15
Did Not Meet Distinction	1,976	7.23	6.57
2015-2016			
Met Distinction	737	5.26	5.28
Did Not Meet Distinction	2,018	6.88	6.28

Table 2.2

Descriptive Statistics for the Percentages of Beginning Teachers Between Schools That Met and Did Not Meet the Mathematics Distinction Designation for the 2012-2013 Through the 2015-2016 School Years

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
2012-2013			
Met Distinction	640	4.94	4.94
Did Not Meet Distinction	2,018	5.75	5.49
2013-2014			
Met Distinction	912	7.54	10.37
Did Not Meet Distinction	3,228	8.54	10.41
2014-2015			
Met Distinction	N/A	N/A	N/A
Did Not Meet Distinction	N/A	N/A	N/A
2015-2016			
Met Distinction	547	5.41	5.21
Did Not Meet Distinction	2,208	6.71	6.24

Table 2.3

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2012-2013 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	852	4.05	9.22
Black	852	11.13	16.61
Hispanic	852	57.13	31.93
White	852	25.36	25.74
Did Not Meet Distinction			
Asian	1,808	3.28	6.70
Black	1,808	12.00	16.79
Hispanic	1,808	55.70	30.63
White	1,808	26.70	26.40

Table 2.4

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2013-2014 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	1,233	4.67	9.46
Black	1,233	11.50	16.02
Hispanic	1,233	53.62	31.88
White	1,233	27.67	26.42
Did Not Meet Distinction			
Asian	2,988	2.62	5.54
Black	2,988	12.55	17.42
Hispanic	2,988	51.75	30.10
White	2,988	30.54	27.54

Table 2.5

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2014-2015 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	726	4.94	10.19
Black	726	9.04	13.68
Hispanic	726	58.06	32.30
White	726	25.38	25.35
Did Not Meet Distinction			
Asian	1,977	3.38	7.41
Black	1,977	12.85	17.49
Hispanic	1,977	56.13	30.16
White	1,977	25.10	25.53

Table 2.6

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2015-2016 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	738	5.15	11.08
Black	738	10.27	15.50
Hispanic	738	56.75	32.45
White	738	25.19	25.68
Did Not Meet Distinction			
Asian	2,026	3.47	7.46
Black	2,026	12.41	16.88
Hispanic	2,026	56.63	29.68
White	2,026	24.84	24.64

Table 2.7

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2012-2013 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	641	4.87	10.09
Black	641	10.45	15.14
Hispanic	641	55.34	31.90
White	641	26.90	26.11
Did Not Meet Distinction			
Asian	2,019	3.10	6.57
Black	2,019	12.12	17.19
Hispanic	2,019	56.41	30.78
White	2,019	26.07	26.22

Table 2.8

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2013-2014 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	913	4.89	9.77
Black	913	11.89	16.29
Hispanic	913	53.88	31.29
White	913	26.88	25.89
Did Not Meet Distinction			
Asian	3,230	2.80	5.96
Black	3,230	12.44	17.26
Hispanic	3,230	52.13	30.42
White	3,230	30.08	27.39

Table 2.9

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2015-2016 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	547	5.95	12.93
Black	547	9.52	14.63
Hispanic	547	58.81	32.54
White	547	23.18	23.73
Did Not Meet Distinction			
Asian	2,217	3.42	7.06
Black	2,217	12.41	16.94
Hispanic	2,217	56.13	29.88
White	2,217	25.37	25.19

Table 2.10

Cohen's ds for the Percentages of Beginning Teachers Between Schools That Met and Did Not Meet the Reading/English Language Arts and Mathematics Distinction Designation by School Year

School Year	Cohen's <i>d</i>	%age Point Difference
2012-2013		
Reading/English Language Arts	0.14	1.15
Mathematics	0.16	1.16
2013-2014		
Reading/English Language Arts	0.17	1.24
Mathematics	0.10	1.13
2014-2015		
Reading/English Language Arts	0.33	1.37
Mathematics	N/A	N/A
2015-2016		
Reading/English Language Arts	0.28	1.31
Mathematics	0.22	1.24

CHAPTER III

DIFFERENCES IN TEACHER AND STUDENT CHARACTERISTICS BY MIDDLE SCHOOL ACCOUNTABILITY RATING: A TEXAS STATEWIDE MULTIYEAR ANALYSIS

This dissertation follows the style and format of *Research in the Schools (RITS)*.

Abstract

In this investigation, the degree to which the percentage of beginning teachers and student ethnicity/race enrollment percentages in Texas middle schools differed between two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) was addressed. Data for the 2012-2013 through the 2015-2016 school years were obtained from the Texas Academic Performance Reports. Statistically significant differences were yielded in the percentage of beginning teachers as a function of distinction designation. Higher percentages of beginning teachers were present in middle schools that did not meet the two distinction designations than in schools that did meet the two distinction designations. With respect to student enrollment percentages by ethnicity/race, higher percentages of Asian students and Hispanic students and lower percentages of Black students and White students were present at schools that met the two distinction designations.

Keywords: Beginning teacher, Distinction designation, Ethnic/racial enrollment, Mathematics, Middle schools, Reading/English Language Arts

DIFFERENCES IN TEACHER AND STUDENT CHARACTERISTICS BY MIDDLE SCHOOL ACCOUNTABILITY RATING: A TEXAS STATEWIDE MULTIYEAR ANALYSIS

As early as the 1960s, equity in educational opportunities for Black and Hispanic students was a concern when evaluating student achievement (Jimenez-Castellanos, 2012; Towers, 1992). In response to inequities in educational opportunity, the United States Department of Education commissioned James S. Coleman and a team of researchers to conduct a research study concerning educational equity in the United States (Jimenez-Castellanos, 2012; National Center for Education Statistics, 1966; Towers, 1992). In 1966, Coleman and his colleagues published their report entitled *Equality of Educational Opportunity*, more commonly known as *The Coleman Report* (Jimenez-Castellanos, 2012; National Center for Education Statistics, 1966; Towers, 1992). Coleman suggested low student achievement was more a result of a student's socioeconomic background than school or teacher characteristics (Jimenez-Castellanos, 2012; National Center for Education Statistics, 1966; Towers, 1992).

Despite the criticism of Coleman's research, the *Coleman Report* did bring attention to the inequities in educational opportunities among students of diverse ethnic and economic backgrounds (Borman & Dowling, 2010; Jimenez-Castellanos, 2012; Whitehurst, 2002). Seventeen years after the publication of *Equality of Educational Opportunity*, the National Commission on Excellence in Education (1983) released *A Nation At Risk: The Imperative for Educational Reform*. In *A Nation At Risk: The Imperative for Educational Reform*, the National Commission on Excellence in Education indicated numerous issues in American public education which included

literacy, equity in educational opportunity, increased need for remediation in mathematics, and a decrease in science test scores (Johanningmeier, 2010; National Commission on Excellence in Education, 1983). Both the *Equality of Educational Opportunity* and *A Nation At Risk: The Imperative for Educational Reform* reports influenced educational policy regarding student achievement among government agencies and educational leaders across the United States (Borman & Dowling, 2010; Hunt, 2008; Johanningmeier, 2010). Consequently, numerous reports concerning educational reform and policy were issued since the release of *Equality of Educational Opportunity* and *A Nation At Risk: The Imperative for Educational Reform* reports (Bullough, Burbank, Gess-Newsome, Kauchak, & Kennedy, 1998). One report, *What Matters Most: Teaching for America's Future*, was issued in 1996 by the National Commission on Teaching & America's Future (1996). The researchers for the National Commission on Teaching & America's Future contended that teacher quality was a priority when addressing the need to reform education and posited the need for setting standards for teachers and students (Bullough et al., 1998; National Commission on Teaching & America's Future, 1996).

Defining teacher quality has changed over the past several decades and varies in definition from person to person (Laczko-Kerr & Berliner, 2002). Part of the reason for this variability in defining teacher quality is due, in part, to the variety of variables that may be considered in one study and not in another study (Hanushek, 2011). Some consensus, however, does exist among researchers (e.g., Bransford, Darling-Hammond, & LePage, 2005; Darling-Hammond, 2000; Hanushek, 1999; Hanushek & Rivkin, 2012; Laczko-Kerr & Berliner, 2002) concerning characteristics of teacher quality. These

characteristics include level of education, route to certification, subject and pedagogical mastery, and the ability and capacity to function and collaborate well in an educational institution (Bransford et al., 2005; Darling-Hammond, 2000; Hanushek, 1999; Hanushek & Rivkin, 2012; Laczko-Kerr & Berliner, 2002;). Numerous researchers (Bransford et al., 2005; Darling-Hammond, 2000; Goldhaber, 2016; Hanushek, 1999; Hanushek & Rivkin, 2012; Laczko-Kerr & Berliner, 2002) had documented the presence of relationships between teacher quality, teacher experience, and student achievement.

In an effort to address student achievement, researchers (e.g., Adamson & Darling-Hammond, 2012; Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2008; Clotfelter, Ladd, & Vigdor, 2007; Darling-Hammond, 2000; Hanushek, 2011) have examined teacher quality as a function of student achievement and have consistently demonstrated relationships between teacher quality and student achievement. As such, the federal government has reauthorized the Elementary and Secondary Education Act of 1965 numerous times including the No Child Left Behind Act of 2001 and more recently with the Every Student Succeeds Act of 2015. With each reauthorization of the Elementary and Secondary Education Act, legislators sought to enact laws to address the growing concerns of student achievement and educational equity (Darling-Hammond & Sykes, 2003; Ingersoll, 2004). The Every Student Succeeds Act of 2015, signed into law by President Barack Obama on December 10, 2015, reauthorized the Elementary and Secondary Act of 1965. Much like the No Child Left Behind Act, accountability remains a key component of the Every Student Succeeds Act of 2015. However, differences are present between the two pieces of legislation. One key aspect within the Every Student Succeeds Act is the removal of federal requirements for teachers to be highly qualified

(Alliance for Excellent Education, 2016b; Every Student Succeeds Act, 2015). In the Every Student Succeeds Act, federal lawmakers relinquished all authority to the states to determine certifying standards for educators. Notwithstanding, many states currently have their own certifying requirements.

Rivkin, Hanushek, and Kain (2005), in an analysis of teacher experience and student achievement, documented that mathematics achievement was lower in classrooms with beginning teachers with very little to no teaching experience than in classrooms with more experienced teachers. Clotfelter, Ladd, and Vidgor (2006) determined that highly experienced teachers and licensure test scores were a consistent indicator of improved student performance. Gagnon and Mattingly (2015) examined school and student characteristics data in the United States collected from the Civil Rights Data Collection, the Small Area Income and Poverty Estimates, and the 2010 US Census. Gagnon and Mattingly determined schools with a diverse population (e.g., Black, American Indian, and Hispanic) and students from a low socioeconomic background were more likely to have inexperienced teachers than schools with students of a higher socioeconomic background. When examining teacher experience as an indicator for teacher quality, readers should consider that a teacher's most difficult year is their first year in the classroom (Jacob, 2012).

Because teacher experience is related to student achievement, researchers (e.g., Clotfelter et al., 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b, Peske & Haycock, 2006) postulated novice teachers are more likely to experience greater challenges in their first year. Moreover, novice teachers are more likely to be placed in schools with a diverse student population (e.g., Black,

Hispanic, and low socioeconomic status) with a low performing status such as a poor accountability rating by federal and state established standards (Alliance for Excellent Education, 2016a; Darling-Hammond, 2008; Foley & Nelson, 2011; Gagnon & Mattingly, 2015). As such, school administrators should use caution when considering new teachers. School administrators should take into consideration their school's demographic composition, economic background of the students, and accountability status when seeking to hire new teachers. Moreover, if novice teachers are considered, then strong induction and mentor programs should be in place to support novice teachers to reduce the likelihood of teacher attrition and low student performance (e.g., Coronado, 2009; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004).

Middle School Challenges

Around the ages of 10 to 11, students begin transitioning from elementary to middle school. Additionally, students are beginning the transition from childhood into the early stages of adulthood. The early stages of adulthood, also known as adolescence, present multiple challenges as students begin to experience puberty (Santrock, 2008; Slavin, 2012). This transition involves a variety of physiological and emotional changes that impact a student's social and emotional state (Santrock, 2008; Slavin, 2012). At this juncture in an adolescent's life, transitioning from elementary into middle school, adolescents are becoming more reflective as they begin the challenge of determining who they are and realizing differences in the manner in which they perceive the world around them.

Students transitioning from elementary into middle school may present challenges to new teachers (Martin, Buelow, & Hoffman, 2016; Slavin, 2012; Youngs, Hyun-Seung,

& Pogodzinski, 2015). Challenges middle school students encounter are numerous and can have substantial consequences to their physical and emotional welfare (Slavin, 2012). These challenges include, but are not limited to, bullying, dropping out, drug and alcohol abuse, risk of pregnancy, sexual identity, delinquency, and risk of sexually transmitted diseases (Bracey, 2006; Galambos & Costigan, 2003; Perkins & Borden, 2003; San Antonio & Salzfass, 2007; Slavin, 2012; Susman, Dorn, & Schiefelbein, 2003). During this time of transition, teachers need to be cognizant of the stresses faced by middle school students. Without the proper training to identify the various signs of emotional disorders, students will struggle academically. Researchers (Kuperminc, Leadbeater, & Blatt, 2001; Midgley, Anderman, & Hicks, 1995; Slavin, 2012) have suggested that the challenges middle school students endure can influence student achievement and result in low student performance. Teachers of middle school students need the pedagogical knowledge and skill to address the many challenges middle school students must endure (Martin et al., 2016; Slavin, 2012).

In addition to the emotional and social challenges of students, teachers must also address the challenges of cultural and ethnic/racial diversity in the student population. Schools that are ethnically/racially diverse with students in poverty, coupled with inexperienced teachers, has been well documented by researchers (Adamson & Darling-Hammond, 2012; Borman & Dowling, 2010; Goldhaber, Lavery, & Theobald, 2015; Schmidt, Cogan, & McKnight, 2011) to be an indicator for low school performance. Goldhaber et al. (2015) established that an inequitable distribution of quality teachers was present in middle schools across a variety of indicators (e.g., low academic performing students, low socioeconomic background, and students who received free or reduced

lunch). As measures of teacher quality, Goldhaber et al. (2015) used experience, academic credentials, and estimates of student performance.

Statement of the Problem

The Coleman Report brought about awareness of the educational inequities in the United States with respect to students of diverse economic and ethnic backgrounds (Borman & Dowling, 2010; Jimenez-Castellanos, 2012; Whitehurst, 2002). Furthermore, *A Nation at Risk* and *What Matters Most: teaching for America's Future* illuminated the need for quality teachers in the public schools (Bullough et al., 1998; National Commission on Teaching & America's Future, 1996). With passage of the Every Student Succeeds Act of 2015, the most recent reauthorization of the Elementary and Secondary Education Act, teacher quality continues to be a central focus when addressing federal accountability standards (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b). Although the highly qualified teacher provision of the No Child Left Behind Act is no longer a requirement under the Every Student Succeeds Act, teacher quality remains a priority.

Because the Every Student Succeeds Act allows states to establish their own accountability rating system, experienced quality teachers will continue to be needed in schools with a low performance rating (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b). As such, school administrators are challenged with placing experienced and high quality teachers in low performing schools. Additionally, novice teachers lack the proper pedagogical training and experience to address the needs of low performing schools (Darling-Hammond, 2008). However, the placement of experienced and high quality teachers in schools with a low performance

rating could provide a solution when trying to address the educational inequities in schools (Alliance for Excellent Education 2004; Greenlee & Brown, 2009; Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2012b).

Purpose of the Study

For this study, four purposes were present in this investigation. The first purpose was to examine the degree to which the percentage of beginning teachers in Texas middle schools differed as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics). The second purpose was to determine the extent to which differences were present in the percentage of student enrollment by ethnicity/race as a function of two distinction designations for Texas middle schools. The third purpose was to ascertain whether trends were present for the percentage of beginning teachers and in the percentage of student enrollment by ethnicity/race for the two distinction designations examined in this multiyear investigation. The final purpose was to determine the degree to which prior trends established by Martinez-Garcia and Slate (2010, 2012a, 2012b) and Moreno and Slate (2015) were commensurate with the 2012-2013 through 2015-2016 years that were examined in this study.

Significance of the Study

To date, no published studies were located in which the percentage of beginning teachers was examined as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for Texas middle schools. Additionally, no published studies were located in which the extent to which differences might be present in student enrollment by

ethnicity/race as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for Texas middle schools was determined. To date, Lopez and Slate (2014) were the only researchers who examined the percentage of beginning teachers as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for Texas elementary schools. Prior to this study, Martinez-Garcia and Slate (2012a) and Moreno and Slate (2015) conducted an empirical investigation of beginning teachers as a function of the previous accountability rating system in Texas prior to the 2012 school year.

Research Questions

The following research questions were addressed in this study: (a) What is the difference in the percentage of beginning teachers at Texas middle schools between schools that earned a distinction designation (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) and schools that did not earn a distinction designation in the 2012-2013 through the 2015-2016 school years?; and (b) What is the difference in the overall student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White) for Texas middle schools between schools that earned a distinction designation and schools that did not earn a distinction designation in the 2012-2013 through the 2015-2016 school years? The extent to which the findings for the percentages of beginning teachers in Texas middle schools by accountability rating were similar for the four school years of data analyzed was examined. Furthermore, the degree to which the findings for the student

demographic characteristics in Texas middle schools by accountability rating were similar for the four school years of data was determined.

Method

Research Design

A non-experimental causal-comparative research design was used in this study (Cresswell, 2014; Johnson & Christensen, 2012). Due to the nature of non-experimental causal-comparative research, no manipulation of the independent variables occurred (Johnson & Christensen, 2012). The data obtained and analyzed in this study were archival quantitative data. Independent variables for this study were represented by distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for traditional middle schools in Texas whereas the dependent variables were represented by school characteristics (i.e., percentages of beginning teachers and student demographic percentages). The two distinction designations correspond to the current accountability ratings assigned to Texas schools by the Texas Education Agency.

Participants

Data from the Texas Academic Performance Reports for all traditionally configured (i.e., 6-8) public middle schools for the 2012-2013 through the 2015-2016 school years in the State of Texas were utilized in this study. Only data from traditional public middle schools were analyzed. Not present in this investigation were data on any non-traditional or charter schools because of substantial differences between them and traditional schools.

Data specific to the percentages of beginning teachers as a function of Academic Achievement in Reading/English Language Arts and Mathematics distinction designations in the Texas Academic Performance Reports were obtained for analysis. Distinction designation labels include *Distinction Earned*, *No Distinction Earned*, and *Not Eligible* (Texas Education Agency, 2014a). Only schools that earned a *Met Standard* accountability rating may qualify for the aforementioned distinction label of *Distinction Earned*. The Texas Education Agency uses five accountability rating categories: (a) Met Standard; (b) Met Alternative Standard; (c) Improvement Required; (d) Not Rated; and (e) Not Rated: Data Integrity Issues. Distinction designations, as defined by the Texas Education Agency (2014a), were “awarded in recognition of outstanding achievement in specific areas” (p. 53) such as Academic Achievement in Reading/English Language Arts or Academic Achievement in Mathematics. Each academic distinction designation is awarded based on outstanding achievement (Texas Education Agency, 2014a). Additionally, The Texas Education Agency (2014b) defined a beginning teacher as “a teacher reported with zero years of experience” (p. 27).

Procedures

Archival data were downloaded from the Texas Academic Performance Reports in the Texas Education Agency’s website. Data were acquired on all Texas public middle schools with Grades 6-8 from the 2012-2013 through the 2015-2016 school years. Specific variables on which information were downloaded were: (a) percent of beginning teachers; (b) distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics); and (c) percentages of

student enrollment by ethnicity/race (i.e., Asian, Black, Hispanic, and White) were obtained.

The Texas Education Agency's distinction designations are awarded based on a variety of qualifications, or indicators, by school level. The Academic Achievement in Reading/English Language Arts distinction is awarded for academic achievement in Reading/English Language Arts based on four indicators for the middle school level. The Texas Education Agency (2014a) utilizes the following indicators to determine eligibility: (a) Attendance rate; (b) Greater than expected growth in reading/English language arts; (c) Grade 7 writing performance (Level III); and (d) Grade 8 reading performance (Level III). The Academic Achievement in Mathematics is awarded for academic achievement in mathematics based on four indicators for the middle school level. The Texas Education Agency (2014a) utilizes the following indicators to determine eligibility: (a) Attendance rate; (b) Greater than expected growth in mathematics; (c) Algebra I by grade 8 performance (Level III); and (d) Algebra I by grade 8 participation.

Results

Prior to conducting inferential statistics to determine whether differences were present in the percentage of beginning teachers between Texas middle schools that earned a distinction designation in Reading/English Language Arts and Texas middle schools that did not earn a distinction designation, checks were conducted to determine the extent to which these data were normally distributed. Because the majority of the normality values were within the limits of normality, ± 3 (Onwuegbuzie & Daniel, 2002),

parametric independent samples *t*-tests were conducted to answer the first research question.

For the 2012-2013 school year for Texas middle schools, the parametric independent samples *t*-test revealed a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(762.75) = 3.31, p = .001$. This difference represented a small effect size (Cohen's *d*) of 0.21 (Cohen, 1988). Middle schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (8.18%) than did middle schools that earned a distinction designation (6.74%). Readers are directed to Table 3.1 for the descriptive statistics for this analysis.

 Insert Table 3.1 about here

Concerning the 2013-2014 school year for Texas middle schools, the parametric independent samples *t*-test revealed a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(1093.42) = 2.78, p = .004$. This difference represented a below small effect size (Cohen's *d*) of 0.15 (Cohen, 1988). Similar to the previous school year, middle schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (10.45%) than did

middle schools that earned a distinction designation (8.86%). Table 3.1 contains the descriptive statistics for this analysis.

With respect to the 2014-2015 school year for Texas middle schools, a statistically significant difference was revealed in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(639.83) = 5.81, p < .001$. This difference represented a small effect size (Cohen's d) of 0.38 (Cohen, 1988). Similar to the previous two school years, middle schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (9.38%) than did middle schools that earned a distinction designation (6.88%). Delineated in Table 3.1 are the descriptive statistics for this analysis.

Regarding the 2015-2016 school year for Texas middle schools, a statistically significant difference was yielded in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(594.41) = 5.07, p < .001$. This difference represented a small effect size (Cohen's d) of 0.34 (Cohen, 1988). Congruent with the previous three school years, middle schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (8.96%) than did middle schools that earned a distinction designation (6.78%). Presented in Table 3.1 are the descriptive statistics for this analysis.

Next, the percentage of beginning teachers for Texas middle schools was examined between schools that earned a distinction designation in mathematics and schools that did not earn such a distinction. For the 2012-2013 school year for Texas middle schools, the parametric independent samples *t*-test revealed a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation, $t(451.86) = 3.00, p = .003$. This difference represented a small effect size (Cohen's *d*) of 0.21 (Cohen, 1988). Middle schools in Texas that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of beginning teachers (8.02%) than did middle schools that earned a distinction designation (6.64%). Table 3.2 contains the descriptive statistics for this analysis.

Insert Table 3.2 about here

Concerning the 2013-2014 school year for Texas middle schools, the parametric independent samples *t*-test did not reveal a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation, $t(848.77) = 1.36, p = .17$. Similar percentages of beginning teachers were employed in both middle school types. Table 3.2 contains the descriptive statistics for this analysis.

With respect to the 2014-2015 school year for Texas middle schools, a statistically significant difference was revealed in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did

not earn this distinction designation, $t(604.95) = 3.23, p = .001$. This difference represented a small effect size (Cohen's d) of 0.22 (Cohen, 1988). Similar to the 2012-2013 school year, middle schools in Texas that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of beginning teachers (9.17%) than did middle schools that earned a distinction designation (7.66%).

Delineated in Table 3.2 are the descriptive statistics for this analysis.

Regarding the 2015-2016 school year for Texas middle schools, a statistically significant difference was yielded in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation, $t(334.83) = 2.91, p = .004$. This difference represented a small effect size (Cohen's d) of 0.22 (Cohen, 1988). Congruent with the 2012-2013 and 2014-2015 school years, middle schools in Texas that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of beginning teachers (8.69%) than did middle schools that earned a distinction designation (7.21%). Presented in Table 3.2 are the descriptive statistics for this analysis.

With respect to the second research question, the dependent variable consisted of the percentages of student enrollment of four student demographic groupings (i.e., Asian, Black, Hispanic, and White). As such, a multivariate analysis of variance (MANOVA) statistical analysis was conducted separately for the Academic Achievement in Reading/English Language Arts and for the Academic Achievement in Mathematics designation distinctions. Prior to conducting the MANOVA procedures, the underlying assumptions for normality of the four dependent variables for each independent variable were checked. Specifically examined were Box's Test of Equality of Covariance and the

Levene's Test of Equality of Error Variances. Although these assumptions were not met, Field (2013) contends that the MANOVA is sufficiently robust that a violation can be withstood.

For the 2012-2013 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .96$, $p < .001$, partial $\eta^2 = .04$, in student enrollment percentages by ethnicity/race between schools that earned a distinction designation in Reading/English Language Arts schools and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. Univariate follow-up analysis of variance (ANOVA) procedures were then calculated to determine which particular student ethnic/racial grouping (i.e., Asian, Black, Hispanic, and White) percentages differed between the two school distinction designations. The ANOVAs yielded statistically significant differences in the percentage of Asian student enrollment between schools that earned a distinction in Reading/English Language Arts and schools that did not earn this a distinction, $F(4, 1032) = 30.71$, $p < .001$, partial $\eta^2 = .03$. A small effect size was present (Cohen, 1988). Middle schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Asian students (4.24%) than did middle schools that did not earn this distinction designation (2.13%). Although not statistically significant at the conventional .05 level, near-statistically significant differences were present in the percentage of Black students, $F(4, 1032) = 3.31$, $p = .069$. Statistically significant differences were not present, however, in the percentage of Hispanic student enrollment, $F(4, 1032) = 0.13$, $p = .72$; and in the percentage of White student enrollment, $F(4, 1032) = 0.24$, $p = .62$. Similar percentages of Black, Hispanic, and White students were enrolled in both the

middle schools that meet this particular distinction designation and in middle schools that did not meet this particular distinction designation. Readers are directed to Table 3.3 for the descriptive statistics for this analysis.

 Insert Table 3.3 about here

Concerning the 2013-2014 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .96$, $p < .001$, partial $\eta^2 = .04$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn this distinction in the percentage of Asian students, $F(4, 1635) = 52.58$, $p < .001$, partial $\eta^2 = .03$; in the percentage of Hispanic students, $F(4, 1635) = 4.06$, $p = .04$, partial $\eta^2 = .002$; and in the percentage of White students, $F(4, 1635) = 7.31$, $p = .007$, partial $\eta^2 = .004$. A small effect size was present for the Asian student group and a below small effect size was present for the Hispanic and White student groups (Cohen, 1988). Statistically significant differences were not present in the percentage of Black students, $F(4, 1635) = 1.75$, $p = .19$.

Similar to the previous school year, middle schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Asian students (4.14%) than did middle schools that did not earn

this distinction designation (2.08%). Middle schools that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Hispanic students (47.20%) than did middle schools that did not earn this distinction (47.20%). Middle schools that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of White students (35.87%) than did middle schools that earned this distinction (31.92%). Similar percentages of Black students were enrolled in both middle school groupings. Table 3.4 contains the descriptive statistics for this analysis.

 Insert Table 3.4 about here

Regarding the 2014-2015 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .95$, $p < .001$, partial $\eta^2 = .05$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn a distinction in the percentage of Asian students, $F(4, 1041) = 41.87$, $p < .001$, partial $\eta^2 = .04$; and in the percentage of Black students, $F(4, 1041) = 4.74$, $p = .03$, partial $\eta^2 = .005$. A small effect size was present for the Asian student group and a below small effect size was present for the Black student group (Cohen, 1988). Statistically

significant differences were not present in the percentage of Hispanic students, $F(4, 1041) = 0.42, p = .52$; and in the percentage of White students, $F(4, 1041) = 1.20, p = .27$.

Similar to the previous two school years, middle schools in Texas that earned a distinction designation in Reading/English Language Arts had statistically significantly higher percentage of Asian students (5.28%) than did middle schools that did not earn this distinction designation (2.14%). Middle schools that did not earn a distinction designation in Reading/English Language Arts had a statistically higher percentage of Black students (11.27%) than did middle schools that earned this distinction designation (10.26%). Similar percentages of Hispanic and White students were enrolled in both middle school types. Delineated in Table 3.5 are the descriptive statistics for this analysis.

 Insert Table 3.5 about here

With respect to the 2015-2016 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .93, p < .001$, partial $\eta^2 = .07$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a moderate effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn a distinction in the percentage of Asian students, $F(4, 1061) = 68.87, p < .001$, partial $\eta^2 = .06$; and in the percentage of Black students, $F(4, 1061) = 7.76, p =$

.005, partial $\eta^2 = .007$. A moderate effect size was present for the Asian student group and below small effect size was present for the Black student group (Cohen, 1988). Statistically significant differences were not present in the percentages of Hispanic students, $F(4, 1061) = 0.03, p = .86$; and in the percentage of White students, $F(4, 1061) = 0.16, p = .69$.

Congruent with the previous three school years, middle schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Asian students (5.99%) than did middle schools that did not earn this distinction designation (2.17%). Commensurate with the previous school year's results, middle schools that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Black students (11.50%) than did middle schools that earned this distinction designation (8.75%). Similar percentages of Hispanic and White students were enrolled in both middle school types. Presented in Table 3.6 are the descriptive statistics for this analysis.

 Insert Table 3.6 about here

For the 2012-2013 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .91, p < .001$, partial $\eta^2 = .09$, in student enrollment percentages by ethnicity/race between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a moderate effect size was present. The follow-up ANOVAs yielded statistically significant differences between schools that earned a distinction in mathematics and

schools that did not earn a distinction in the percentage of Asian students, $F(4, 1032) = 91.13, p < .001$, partial $\eta^2 = .08$; and in the percentage of White students, $F(4, 1032) = 3.94, p = .05$, partial $\eta^2 = .004$. A moderate effect size was present for the Asian student group and a below small effect size was present for the White student group. Statistically significant differences were not present in the percentage of Black students, $F(4, 1032) = 0.27, p = .60$; and in the percentage of Hispanic students, $F(4, 1032) = 0.05, p = .83$. Readers are directed to Table 3.7 for the descriptive statistics for this analysis.

 Insert Table 3.7 about here

Middle schools in Texas that earned a distinction designation in mathematics had statistically significantly higher percentage of Asian students (5.89%) than did middle schools that did not earn this distinction designation (1.93%). Middle schools that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of White students (39.79%) than did middle schools that earned this distinction designation (30.62%). Similar percentages of Black and Hispanic students were enrolled in both middle school types.

Concerning the 2013-2014 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .93, p < .001$, partial $\eta^2 = .07$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a moderate effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that

earned a distinction in mathematics and schools that did not earn a distinction for the percentage of Asian students, $F(4, 1635) = 108.59, p < .001$, partial $\eta^2 = .06$; and for the percentage of White students, $F(4, 1635) = 11.62, p = .001$, partial $\eta^2 = .007$. A moderate effect size was present for the Asian student group and a below small effect size was present for the White student group. Statistically significant differences were not present in the percentage of Black students, $F(4, 1635) = 0.31, p = .58$; and in the percentage of Hispanic students, $F(4, 1635) = 0.97, p = .33$.

Similar to the previous school year, middle schools in Texas that earned a distinction designation in mathematics had statistically significantly higher percentage of Asian students (4.90%) than did middle schools that did not earn this distinction designation (1.88%). Middle schools that did not earn a distinction designation in mathematics had a statistically higher percentage of White students (36.06%) than did middle schools that earned this distinction designation (30.90%). Similar percentages of Black and Hispanic students were enrolled in both middle school types. Delineated in Table 3.8 are the descriptive statistics for this analysis.

 Insert Table 3.8 about here

Regarding the 2014-2015 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .94, p < .001$, partial $\eta^2 = .06$, in student enrollment percentages by ethnicity/race between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a moderate effect size was present. The univariate ANOVAs yielded

statistically significant differences in the percentage of Asian student enrollment between schools that earned a distinction in mathematics and schools that did not earn this a distinction, $F(4, 1039) = 2092.05, p < .001$, partial $\eta^2 = .05$. A small effect size was present for the Asian student group. Statistically significant differences were not present, however, in the percentage of Black student enrollment, $F(4, 1039) = 1.03, p = .31$; in the percentage of Hispanic student enrollment, $F(4, 1039) = 0.34, p = .56$; and in the percentage of White student enrollment, $F(4, 1039) = 2.83, p = .09$.

Similar to the previous two school years, middle schools in Texas that earned a distinction designation in mathematics had a statistically significantly higher percentage of Asian students (5.28%) than did middle schools that did not earn this distinction designation (2.14%). Similar percentages of Black, Hispanic, and White students were enrolled in both middle school groupings. Readers are directed to Table 3.9 for the descriptive statistics for this analysis.

 Insert Table 3.9 about here

With respect to the 2015-2016 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .94, p < .001$, partial $\eta^2 = .06$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a moderate effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in mathematics and schools that did not earn a distinction in the

percentage of Asian students, $F(4, 1061) = 56.01, p < .001$, partial $\eta^2 = .05$. A small effect size was present for the Asian student group. Although not statistically significant at the conventional .05 level, near-statistically significant differences were present in the percentage of Black students, $F(4, 1061) = 3.16, p = .08$. Statistically significant differences were not present in the percentages of Hispanic students, $F(4, 1061) = 0.87, p = .35$; and in the percentage of White students, $F(4, 1061) = 0.01, p = .91$.

Congruent with the previous three school years, middle schools in Texas that earned a distinction designation in mathematics had a statistically significantly higher percentage of Asian students (6.20%) than did middle schools that did not earn this distinction designation (2.41%). Similar percentages of Black, Hispanic, and White students were enrolled in both elementary school types. Presented in Table 3.10 are the descriptive statistics for this analysis.

 Insert Table 3.10 about here

Discussion

In this statewide, multiyear analysis, an investigation was conducted to determine whether differences were present in beginning teacher percentages between two Texas middle school accountability ratings. Additionally, differences in student enrollment percentages by ethnicity/race between two different school accountability ratings for Texas middle schools were determined. Moreover, trends were ascertained for both the percentages of beginning teachers and for student enrollment in ethnic/racial percentages. Finally, the degree to which prior trends established by Martinez-Garcia and Slate (2010,

2012a, 2012b) and Moreno and Slate (2015) were compared with the results examined in this study. Results will be summarized in the next section.

Texas middle schools that did not earn the Academic Achievement in Reading/English Language Arts and the Academic Achievement in Mathematics distinction designations had statistically significantly higher percentages of beginning teachers than did middle schools that earned this distinction in all four years of data analyzed. The magnitude of the differences in the percentages of beginning teachers between schools that earned a distinction designation and schools that did not earn a distinction designation were ascertained by calculating Cohen's *ds* (Cohen, 1988). The array of the Cohen's *d* calculations in the percentages of beginning teachers for middle schools that earned, or did not earn, the Reading/English Language Arts distinction designation analyses was from a low of 0.15 to a high of 0.38, with the average being 0.27 for the four years of data analyzed. As such, the average degree of practical significance of the statistically significant results was small. Though small, readers should note that the analyses conducted in this investigation consisted of aggregated data on thousands of Texas middle school students. Students who were enrolled in middle schools that did not meet the distinction designations had higher percentages of beginning teachers than did students who were enrolled in schools that did meet these distinction designations. Table 3.11 contains the Cohen's *d* effect size calculations for the percentages of beginning teachers for middle schools that earned, or did not earn, the Reading/English Language Arts distinction designation.

Insert Table 3.11 about here

With regard to the mathematics distinction designation, the array of Cohen's d calculations in the percentages of beginning teachers for middle schools that earned, or did not earn, this distinction designation analyses was from a low of 0.21 to a high of 0.22, with the average being 0.22 for the three years of data analyzed. As such, the average degree of practical significance of the statistically significant results was small. Students who were enrolled in middle schools that did not meet the distinction designations had higher percentages of beginning teachers than did students who were enrolled in schools that did meet these distinction designations. Table 3.11 contains the Cohen's d effect size calculations for the percentages of beginning teachers for middle schools that earned, or did not earn, the mathematics distinction designation.

With respect to student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White), statistically significant differences between schools that earned a distinction designation in Reading/English Language Arts and mathematics schools and schools that did not earn these distinction designation were present. Although statistically significant differences between two different distinction designations were present in this investigation, statistically significant differences were not present in all ethnic/racial student groups. Percentages of student enrollment for Black, Hispanic, and White students were not consistently statistically significant across all four years analyzed. However, for all four school years analyzed, statistically

significant differences were present for Asian students between the two different distinction designations.

Although not discussed in the Results section of this investigation, differences were clearly evident in the number of schools in the 2012-2013 school year that met and did not meet the Reading/English Language Arts distinction designation. The number of middle schools that did not meet this distinction designation were 701, which was more than twice as many schools that did meet this distinction, 335. With respect to the 2013-2014 school year, schools that did not meet this distinction designation were 1,097, again, more than twice as many schools that did meet this distinction, 538. Regarding the 2014-2015 school year, schools that did not meet this distinction designation were 778, nearly three times as many schools that did meet this distinction designation, 264. For the 2015-2016 school year, schools that did not meet this distinction designation were 788, again, nearly three times as many schools that did meet this distinction designation, 272.

Similarly, with regard to the mathematics distinction designation, differences were clearly evident in the number of schools in the 2012-2013 school year that met and did not meet this distinction designation. The number of middle schools that did not meet this distinction designation were 805, which was more than three times as many schools that did meet this distinction, 231. With respect to the 2013-2014 school year, schools that did not meet this distinction designation were 1,164, more than twice as many schools that did meet this distinction, 471. Regarding the 2014-2015 school year, schools that did not meet this distinction designation were 747, again, more than twice as many schools that did meet this distinction designation, 294. For the 2015-2016 school year,

schools that did not meet this distinction designation were 851, more than four times as many schools that did meet this distinction designation, 209.

Connections with Existing Literature

The presence of statistically significantly higher percentages of beginning teachers in low performing schools than in higher performing schools had been documented by researchers (e.g., Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia, LaPrairie, & Slate, 2011; Martinez-Garcia & Slate, 2012a; Moreno & Slate, 2015). In this multiyear, statewide investigation, results were congruent with the results of other researchers (Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2010, 2012a, 2012b; Peske & Haycock, 2006) who established the presence of statistically significantly higher percentages of beginning teachers in lower performing schools than in higher performing schools. Similarly, results delineated herein were commensurate with Moreno and Slate (2015) who documented statistically significant differences in the percentage of beginning teachers by school accountability ratings for the 2010-2011 school year. As such, an inequitable distribution of experienced, quality teachers is becoming more of an issue in middle schools. Results of this empirical, multiyear investigation were congruent with Goldhaber et al. (2015) who determined that quality teachers were not equitably distributed among middle schools in the state of Washington.

Readers should recognize, however, that the results herein were not entirely congruent with other researchers (Alliance for Excellent Education, 2016a; Darling-Hammond, 2008; Foley & Nelson, 2011; Gagnon & Mattingly, 2015). Regarding the overall student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White) for Texas middle schools between schools that earned a distinction designation

and schools that did not earn a distinction, findings in this study were partially consistent with prior research. With respect to student characteristics, researchers (Alliance for Excellent Education, 2016a; Darling-Hammond, 2008; Foley & Nelson, 2011; Gagnon & Mattingly, 2015) documented beginning teachers were more likely to be placed in schools rated by federal and state standards with low performing status with predominantly Black and Hispanic students.

Implications for Policy and Practice

Regarding the results of this empirical, multiyear statewide investigation, several implications for policy and practice can be made. First, school administrators should use caution when considering where to place new teachers. School administrators should take into consideration their school's demographic composition, economic background of the students, and accountability status when seeking to hire new teachers. Second, if novice teachers are considered, then strong induction and mentor programs should be in place to support beginning teachers to reduce the likelihood of teacher attrition and low student performance (e.g., Coronado, 2009; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004).

Because the Every Student Succeeds Act required states to establish their own accountability rating system, experienced quality teachers continue to be needed in schools with a low performance rating (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b). As such, a third implication would be to place experienced and high quality teachers in schools with a low accountability rating. Placing experienced and high quality teachers in low performing schools could provide a solution for the inequitable distribution of experienced, high quality teachers (Alliance

for Excellent Education 2004; Greenlee & Brown, 2009; Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2012b). A final implication for consideration would be to adopt better hiring practices aligned with the needs of the school to provide a more attractive campus for alluring more experienced and qualified teachers.

Recommendations for Future Research

Examined in this study were the degree to which differences were present in the percentages of beginning teachers by school accountability rating for Texas middle schools. Due to the consistent results that were obtained in this investigation of middle schools, researchers should consider extending this study to elementary schools, as well as to high schools. The extent to which results from this study of middle schools would generalize to elementary schools or to high schools is not known. Researchers are also encouraged to replicate this multiyear investigation in other states. The degree to which the results obtained herein on Texas middle schools would be generalizable to middle schools in other states is not known. Researchers are also encouraged to expand the student demographic characteristics that they analyze. For example, student economic disadvantage, at-risk status, and English Language Learner status as a percent of the total student enrollment could be analyzed with respect to the percent of beginning teachers. Finally, this study could be extended to other teacher characteristics (e.g., postsecondary degree, gender, ethnicity/race) rather than the sole focus on the percentage of beginning teachers that was present in this article.

Conclusion

In this multiyear, statewide investigation, the degree to which the percentage of beginning teachers and student ethnicity/race enrollment percentages in Texas middle

schools differed between two different distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) was addressed. Archival data were analyzed for the 2012-2013, 2013-2014, 2014-2015, and the 2015-2016 school years for all traditionally configured middle schools. Statistically significant differences were yielded in all statistical analyses performed for the percentage of beginning teachers between the two different distinction designations. Higher percentages of beginning teachers were present in middle schools that did not meet the two distinction designation for each school year. With regard to student enrollment percentages, lower percentages of Black students and White students were present in schools that did not meet the two distinction designation. Higher percentages of Asian students and Hispanic students were present in schools that did meet the two distinction designations.

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Table 3.1

Descriptive Statistics for the Percentages of Beginning Teachers Between Schools That Met and Did Not Meet the Reading/English Language Arts Distinction Designation for the 2012-2013 Through the 2015-2016 School Years

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
2012-2013			
Met Distinction	335	6.74	6.19
Did Not Meet Distinction	701	8.18	7.28
2013-2014			
Met Distinction	538	8.86	10.40
Did Not Meet Distinction	1,097	10.45	10.69
2014-2015			
Met Distinction	264	6.88	5.41
Did Not Meet Distinction	778	9.38	7.64
2015-2016			
Met Distinction	272	6.78	5.65
Did Not Meet Distinction	788	8.96	7.20

Table 3.2

Descriptive Statistics for the Percentages of Beginning Teachers Between Schools That Met and Did Not Meet the Mathematics Distinction Designation for the 2012-2013 Through the 2015-2016 School Years

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
2012-2013			
Met Distinction	231	6.64	5.85
Did Not Meet Distinction	805	8.02	7.24
2013-2014			
Met Distinction	471	9.36	10.53
Did Not Meet Distinction	1,164	10.16	10.53
2014-2015			
Met Distinction	294	7.66	6.55
Did Not Meet Distinction	747	9.17	7.44
2015-2016			
Met Distinction	209	7.21	6.51
Did Not Meet Distinction	851	8.69	6.96

Table 3.3

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2012-2013 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	335	4.24	8.20
Black	335	10.20	13.33
Hispanic	335	50.15	30.89
White	335	33.24	27.71
Did Not Meet Distinction			
Asian	702	2.13	4.05
Black	702	12.07	16.40
Hispanic	702	49.44	30.12
White	702	34.16	28.49

Table 3.4

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2013-2014 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	539	4.14	7.72
Black	539	11.46	14.41
Hispanic	539	50.31	29.69
White	539	31.92	26.41
Did Not Meet Distinction			
Asian	1,101	2.08	3.78
Black	1,101	12.55	16.31
Hispanic	1,101	47.20	29.12
White	1,101	35.87	28.44

Table 3.5

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2014-2015 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	296	5.28	10.16
Black	296	10.26	12.74
Hispanic	296	51.91	31.49
White	296	30.35	23.34
Did Not Meet Distinction			
Asian	748	2.14	3.93
Black	748	11.27	15.11
Hispanic	748	50.72	29.15
White	748	33.54	28.03

Table 3.6

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2015-2016 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	276	5.99	10.50
Black	276	8.75	11.42
Hispanic	276	51.31	31.09
White	276	31.50	26.44
Did Not Meet Distinction			
Asian	790	2.17	4.45
Black	790	11.50	14.98
Hispanic	790	51.68	29.18
White	790	32.26	27.39

Table 3.7

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2012-2013 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	231	5.89	9.92
Black	231	11.93	14.31
Hispanic	231	49.28	29.82
White	231	30.62	25.13
Did Not Meet Distinction			
Asian	806	1.93	3.44
Black	806	11.33	15.82
Hispanic	806	49.78	30.53
White	806	39.79	29.01

Table 3.8

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2013-2014 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	473	4.90	8.53
Black	473	12.53	14.78
Hispanic	473	49.34	29.74
White	473	30.90	26.05
Did Not Meet Distinction			
Asian	1,167	1.88	3.20
Black	1,167	12.06	16.08
Hispanic	1,167	47.77	29.17
White	1,167	36.06	28.41

Table 3.9

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2014-2015 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	296	5.28	10.16
Black	296	10.26	12.74
Hispanic	296	51.91	31.49
White	296	30.35	26.34
Did Not Meet Distinction			
Asian	748	2.14	3.93
Black	748	11.27	15.11
Hispanic	748	50.72	29.15
White	748	33.54	28.03

Table 3.10

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2015-2016 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	212	6.20	11.81
Black	212	9.24	11.71
Hispanic	212	49.89	31.17
White	212	32.26	26.74
Did Not Meet Distinction			
Asian	854	2.41	4.48
Black	854	11.18	14.72
Hispanic	854	52.01	29.29
White	854	32.01	27.25

Table 3.11

Cohen's ds for the Percentages of Beginning Teachers Between Schools That Met and Did Not Meet the Reading/English Language Arts and Mathematics Distinction Designation by School Year

School Year	Cohen's <i>d</i>	%age Point Difference
2012-2013		
Reading/English Language Arts	0.21	1.21
Mathematics	0.21	1.21
2013-2014		
Reading/English Language Arts	0.15	1.18
Mathematics	N/A	N/A
2014-2015		
Reading/English Language Arts	0.38	1.36
Mathematics	0.22	1.20
2015-2016		
Reading/English Language Arts	0.34	1.32
Mathematics	0.22	1.21

CHAPTER IV
DIFFERENCES IN TEACHER AND STUDENT CHARACTERISTICS BY
DISTINCTION DESIGNATIONS IN TEXAS HIGH SCHOOLS

This dissertation follows the style and format of *Research in the Schools (RITS)*.

Abstract

Analyzed in this study was the degree to which the percentage of beginning teachers and student ethnicity/race enrollment percentages in Texas high schools differed as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) was examined. Archival data were obtained from the Texas Academic Performance Reports for the 2012-2013, 2013-2014, 2014-2015, and 2015-2016 school years. Statistically significant differences were present in the percentage of beginning teachers as a function of distinction designation. Higher percentages of beginning teachers were present in high schools that did not meet the two distinction designations than in schools that met either distinction designations. With respect to student enrollment percentages by ethnicity/race, higher percentages of Asian students and lower percentages of Black and Hispanic students were present at schools that met the two distinction designations. Implications of results and recommendations for future research were provided.

Keywords: Beginning teacher, Distinction designation, Ethnic/racial enrollment, High schools, Mathematics, Reading/English Language Arts

DIFFERENCES IN TEACHER AND STUDENT CHARACTERISTICS BY DISTINCTION DESIGNATIONS IN TEXAS HIGH SCHOOLS

The United States has faced many challenges with regard to student achievement and addressing inequities in public education (Darling-Hammond & Sykes, 2003; Terry, 2010). In an attempt to address the educational challenges in American public schools, the United States government has reauthorized the Elementary and Secondary Education Act numerous times. With each reauthorization, public school leaders had to address various policy changes such as requiring teachers to be highly qualified by standards set forth under the No Child Left Behind Act of 2002. More importantly was the mandate of the No Child Left Behind Act to provide potential punitive consequences to schools that failed to meet accountability standards based on high stakes testing. Although the No Child Left Behind Act has been replaced by the Every Student Succeeds Act, the impetus to meet accountability standards remains a driving force for school administrators to hire high quality teachers.

The Every Student Succeeds Act requires states to establish an accountability rating system to identify the lowest performing schools and be prepared to provide an improvement plan for those schools who fail to demonstrate progress (Alliance for Excellent Education, 2016a). As such, pressure remains on school administrators to hire high quality teachers. Because numerous researchers (e.g., Brophy, 1988; Darling-Hammond, 2000; Darling-Hammond, 2007; McCormick & O'Connor, 2015; Wright, Horn, & Sanders, 1997) have established that teacher quality and student achievement are related, school leaders have emphasized the hiring of high quality teachers to improve the accountability ratings of their schools. However, schools that received a poor

accountability rating are more likely to have a high percentage of beginning and inexperienced teachers teaching in schools with a high percentage of ethnically diverse students (Martinez-Garcia & Slate, 2010, Peske & Haycock, 2006).

Because researchers (e.g., Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia, LaPrairie, & Slate, 2011; Martinez-Garcia & Slate, 2012a, 2012b) had established a relationship between teacher quality and student achievement, the need to place high quality teachers in schools is a critical topic when addressing low performing schools. Statistically significantly lower percentages of beginning teachers have been documented to be employed in high performing schools than in low performing schools. In a recent study, Moreno and Slate (2015) conducted an empirical investigation of teacher characteristics in Texas high schools. In their statewide analysis, they documented the presence of statistically significant differences in the percentage of beginning teachers by school accountability rating in Texas high schools during the 2010-2011 school year. Moreno and Slate established that over 4% of teachers in Exemplary high schools were beginning teachers in comparison to slightly over 9% of teachers in Academically Unacceptable Schools who were beginning teachers. Similarly documented by Martinez-Garcia and Slate (2012b) was the presence of statistically significant differences in the percentage of beginning teachers by accountability rating in three of the five years (i.e., 2003-2004, 2004-2005, and 2007-2008) of data they analyzed in Texas high schools. For example, in the 2003-2004 school year, the percentage of beginning teachers in Exemplary high schools was slightly less than 5% in comparison to almost 13% beginning teachers in Academically Unacceptable high schools. Additionally, in the 2007-2008 school year, Martinez-Garcia and Slate (2012b)

determined that the percentage of beginning teachers in Exemplary high schools was slightly over 6% in comparison to more than 13% beginning teachers in Academically Unacceptable high schools.

Researchers (e.g., Clotfelter, Ladd, & Vigdor, 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b; Peske & Haycock, 2006) had documented the presence of statistically significant relationships between student achievement and teaching experience. Gagnon and Mattingly (2015) posited that inexperienced teachers have few pedagogical experiences (e.g., classroom management, curriculum, and instruction) which influence their ability to be effective teachers. In an analysis of student achievement and teacher experience in Texas, Rivkin, Hanushek, and Kain (2005) established that mathematics was statistically significantly lower in classrooms with inexperienced teachers than in classrooms with more experienced teachers. Clotfelter et al. (2006) further established that experienced teachers in North Carolina were a consistent indicator of improved student achievement. Because beginning teachers have little to no teaching experience, beginning teachers are more likely to experience greater challenges in their first year (Clotfelter et al., 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009). Moreover, Rivkin et al. posited that the first year of teaching is a transition period wherein the new teacher is adjusting to the profession of education.

Similarly documented by Peske and Haycock (2006) was the presence of a lower percentage of novice teachers in high performing Wisconsin elementary schools as compared to a higher percentage of novice teachers in low performing schools. Peske and Haycock (2006) further established the presence of a high percentage of novice

teachers teaching in schools with a high percentage of ethnically/racially diverse schools as compared to a low percentage of novice teachers in schools with a low percentage of ethnically/racially diverse schools. Schools with more than 62% of their students being ethnically/racially diverse had more than one fourth (i.e., 28%) teachers being novice teachers. This percentage was more than twice the percentage (i.e., 11%) of novice teachers in schools that had less than 1.5% of their students being ethnically/racially diverse.

In an investigation in the state of interest for this article, Texas, Martinez-Garcia and Slate (2010) documented the presence of a high percentage of beginning teachers in Texas high schools with a high percentage of ethnically/racially diverse student population for the 2004-2005 through 2007-2008 school years. For the 2007-2008 school year, schools with slightly less than 60% of their students being ethnically/racially diverse were present in the highest one-third of beginning teacher percentages. This percentage was approximately a 15% difference compared to slightly less than 52% of their students being ethnically/racially diverse in the lowest one-third of beginning teacher percentages. The presence of a high percentage of beginning teachers in Texas high schools with a high percentage of ethnically/racially diverse student population for the Martinez-Garcia and Slate (2010) study were also similar for the 2004-2005 through 2006-2007 school years.

Similarly documented by the Illinois Education Council was the presence of a higher percentage of students being ethnically/racially diverse in schools with a low teacher quality index as compared to a low percentage of students being ethnically/racially diverse in schools with a higher teacher quality index (Peske &

Haycock, 2006). The Illinois Education Council established a teacher quality index utilizing multiple measures (i.e., teacher experience, education, emergency or provisional credentials, Basic Skills test failures, and average ACT composite scores) that had been documented to be related to student achievement (Peske & Haycock, 2006). The Illinois Education Council used a large database of 140,000 teachers in Illinois from the 2002-2003 school year. The Illinois Education Council further categorized their results by dividing schools into quartiles based on their teacher quality index rating. Teachers in the top quartile were teachers with a higher teacher quality index rating than teachers in the lower quartile. In the lowest quartile students being ethnically/racially diverse was 88%. This percentage was substantially higher with only 1% of students being ethnically/racially diverse in the highest quartile.

Statement of the Problem

For several decades the United states has faced many challenges with improving student achievement and addressing inequities in public education (Darling-Hammond, 2000; Darling-Hammond & Sykes, 2003; Shen, Mansberger, & Yang, 2004; Terry, 2010). Additionally, the passage of the Every Student Succeeds Act replacing the No Child Left Behind Act, the impetus remains to meet state and federal accountability standards. With federal and state mandates to address student achievement, educational leaders are challenged with hiring quality teachers to ensure their schools do not receive poor accountability ratings from the state and be placed on an improvement plan (Alliance for Excellent Education, 2016a).

Unfortunately, a high percentage of beginning teachers with little teaching experience are teaching in low performing schools as compared to a low percentage of

beginning teachers in high performing schools (Darling-Hammond, 2008; Greenlee & Brown, 2009; Lopez & Slate, 2014; Martinez-Garcia, LaPrairie, & Slate, 2011; Martinez-Garcia & Slate, 2012a; Moreno & Slate, 2015; Peske & Haycock, 2006). Moreover, a high percentage of low performing schools with a high percentage of ethnically/racially diverse students were taught by beginning teachers (Gagnon & Mattingly, 2015; Peske & Haycock, 2006). Researchers (e.g., Clotfelter et al., 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b, Peske & Haycock, 2006) had well documented the presence of statistically significant relationships between student achievement and teacher experience. Furthermore, schools with a high percentage of beginning teachers and ethnically/racially diverse students have been established by researchers to be indicators of low performing schools (Adamson & Darling-Hammond, 2012; Borman & Dowling, 2010; Goldhaber, Lavery, & Theobald, 2015; Schmidt, Cogan, & McKnight, 2011).

Purpose of the Study

Four purposes were present in this investigation. The first purpose was to examine the degree to which the percentage of beginning teachers in Texas high schools differed as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics). The second purpose was to determine the extent to which differences were present in student enrollment by ethnicity/race as a function of two distinction designations for Texas middle schools. The third purpose was to ascertain whether trends were present for the percentage of beginning teachers and student demographic characteristics with respect to distinction designations in reading and mathematics. The final purpose was to determine

the degree to which prior trends established by Martinez-Garcia and Slate (2010, 2012a, 2012b) and Moreno and Slate (2015) were commensurate with the 2012-2013 through 2015-2016 school years that were examined in this study.

Significance of the Study

After an extensive review of the literature, no published studies were located that examined the percentage of beginning teachers as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for Texas high schools. Moreover, no published studies were located in which student enrollment differences by ethnicity/race might exist as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for Texas high schools. To date, the only study in which the percentage of beginning teachers was addressed as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) was conducted by Lopez and Slate (2014) for elementary schools in Texas. Prior to this study, Martinez and Garcia (2010), Martinez-Garcia and Slate (2012a) and Moreno and Slate (2015) conducted an empirical investigation of beginning teachers as a function of an accountability rating system no longer in use.

Research Questions

The following research questions were addressed in this study: (a) What is the difference in the percentage of beginning teachers in Texas high schools as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics)?; (b) What is the difference in student

enrollment by ethnicity/race in Texas high schools as a function of distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics)?; (c) What trend is present in the percentage of beginning teachers in Texas high schools as a function of two distinction designations?; and (d) What trend is present in student enrollment ethnic/racial composition in Texas high schools as a function of two distinction designations? The first two research questions were repeated for the 2012-2013 through 2015-2016 school years whereas the last two research questions involved a comparison across the four school years.

Method

Research Design

A non-experimental causal-comparative research design was used in this study (Cresswell, 2014; Johnson & Christensen, 2012). Due to the nature of non-experimental causal-comparative research, no manipulation of the independent variables can occur (Johnson & Christensen, 2012). The data that were obtained and analyzed in this study were archival quantitative data. Independent variables for this study represented distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) for traditionally configured high schools in Texas whereas the dependent variables represented school characteristics (i.e., percentages of beginning teachers and student demographics).

Participants

Data from the Texas Academic Performance Reports for all traditionally configured (i.e., Grades 9-12) public high schools for the 2012-2013 through 2015-2016 school years in the State of Texas will be utilized in this study. Only traditional public

high schools will have their data analyzed. Not present in this investigation will be data on any non-traditional or charter schools because of substantial differences between them and traditional schools.

Data specific to the percentages of beginning teachers as a function of Academic Achievement in Reading/English Language Arts and Mathematics distinction designations in the Texas Academic Performance Reports will be obtained for analysis. Distinction designation labels include *Distinction Earned*, *No Distinction Earned*, and *Not Eligible* (Texas Education Agency, 2014a). Only schools that have earned a *Met Standard* accountability rating may qualify for the aforementioned distinction label of *Distinction Earned*. The Texas Education Agency uses five accountability rating categories: (a) Met Standard; (b) Met Alternative Standard; (c) Improvement Required; (d) Not Rated; and (e) Not Rated: Data Integrity Issues. Distinction designations, as defined by the Texas Education Agency (2014a), are “awarded in recognition of outstanding achievement in specific areas” (p. 53) such as Academic Achievement in Reading/English Language Arts or Academic Achievement in Mathematics. Each academic distinction designation is awarded based on outstanding achievement (Texas Education Agency, 2014a). Additionally, The Texas Education Agency (2014b) defined a beginning teacher as “a teacher reported with zero years of experience” (p. 27).

Procedures

Archival data were downloaded from the Texas Academic Performance Reports in the Texas Education Agency’s website. Data were acquired on all Texas public high schools that contained Grades 9-12 for the 2012-2013 through the 2015-2016 school years. Specific variables on which information was downloaded were: (a) percent of

beginning teachers; (b) distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics); and (c) student enrollment percentages by student demographics (i.e., Asian, Black, Hispanic, and White) were obtained.

The Texas Education Agency's distinction designations are awarded based on a variety of qualifications, or indicators, by school level. The Academic Achievement in Reading/English Language Arts distinction is awarded for academic achievement in reading/English language arts based on four indicators for the high school level. The Texas Education Agency (2014a) utilized the following indicators to determine eligibility: (a) Attendance rate; (b) AP/IB examination participation and performance in English language arts; (c) and SAT/ACT participation and performance in English language arts. The Academic Achievement in Mathematics is awarded for academic achievement in mathematics based on three indicators for the high school level. The Texas Education Agency (2014a) utilized the following indicators to determine eligibility: (a) Attendance rate; (b) AP/IB examination participation and performance in mathematics; (c) and SAT/ACT participation and performance in mathematics.

Results

Prior to conducting inferential statistics to determine whether differences were present in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn a distinction designation, checks were conducted to determine the extent to which these data were normally distributed. Because the majority of the normality values were within the limits

of normality, ± 3 (Onwuegbuzie & Daniel, 2002), parametric independent samples t -tests were conducted to answer the first research questions.

For the 2012-2013 school year for Texas high schools, the parametric independent samples t -test revealed a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(692.94) = 3.36$, $p = .001$. This difference represented a small effect size (Cohen's d) of 0.22 (Cohen, 1988). High schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (7.18%) than did high schools that earned a distinction designation (5.92%). Readers are directed to Table 4.1 for the descriptive statistics for this analysis.

 Insert Table 4.1 about here

Concerning the 2013-2014 school year for Texas high schools, the parametric independent samples t -test did not reveal a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(548.32) = 0.26$, $p = .80$. Similar percentages of beginning teachers were employed in both high school types. Table 4.1 contains the descriptive statistics for this analysis.

With respect to the 2014-2015 school year for Texas high schools, a statistically significant difference was revealed in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and

schools that did not earn this distinction designation, $t(848.16) = 3.97, p < .001$. This difference represented a small effect size (Cohen's d) of 0.25 (Cohen, 1988). Similar to the 2012-2013 school year, high schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (8.34%) than did high schools that earned a distinction designation (6.76%). Delineated in Table 4.1 are the descriptive statistics for this analysis.

Regarding the 2015-2016 school year for Texas high schools, a statistically significant difference was yielded in the percentage of beginning teachers between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation, $t(884.26) = 6.32, p < .001$. This difference represented a small effect size (Cohen's d) of 0.39 (Cohen, 1988). Congruent with the 2012-2013 and 2014-2015 school years, high schools in Texas that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of beginning teachers (8.14%) than did high schools that earned a distinction designation (5.98%). Presented in Table 4.1 are the descriptive statistics for this analysis.

Next, the percentage of beginning teachers for Texas high schools was examined between schools that earned a distinction designation in mathematics and schools that did not earn such a distinction. For the 2012-2013 school year for Texas high schools, the parametric independent samples t -test revealed a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation, $t(766.28) = 2.44, p$

= .02. This difference represented a below small effect size (Cohen's d) of 0.16 (Cohen, 1988). High schools in Texas that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of beginning teachers (7.12%) than did high schools that earned a distinction designation (6.19%). Readers are directed to Table 4.2 for the descriptive statistics for this analysis.

 Insert Table 4.2 about here

Concerning the 2013-2014 school year for Texas high schools, the parametric independent samples t -test revealed a statistically significant difference in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation, $t(787.93) = 2.03$, $p = .04$. This difference represented a below small effect size (Cohen's d) of 0.12 (Cohen, 1988). Similar to the previous school year, high schools in Texas that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of beginning teachers (8.91%) than did high schools that earned a distinction designation (7.77%). Table 4.2 contains the descriptive statistics for this analysis.

With respect to the 2014-2015 school year for Texas high schools, a statistically significant difference was revealed in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation, $t(1018.53) = 4.50$, $p < .001$. This difference represented a small effect size (Cohen's d) of 0.27 (Cohen, 1988). Similar to the previous two school years, high schools in Texas that did not earn a distinction designation in mathematics

had a statistically significantly higher percentage of beginning teachers (8.43%) than did high schools that earned a distinction designation (6.73%). Delineated in Table 4.2 are the descriptive statistics for this analysis.

Regarding the 2015-2016 school year for Texas high schools, a statistically significant difference was yielded in the percentage of beginning teachers between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation, $t(927.01) = 4.85, p < .001$. This difference represented a small effect size (Cohen's d) of 0.30 (Cohen, 1988). Congruent with the previous three school years, high schools in Texas that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of beginning teachers (7.99%) than did high schools that earned a distinction designation (6.33%). Presented in Table 4.2 are the descriptive statistics for this analysis.

With respect to the second research question, the dependent variable consisted of the percentages of student enrollment of four student demographic groupings (i.e., Asian, Black, Hispanic, and White). As such, a multivariate analysis of variance (MANOVA) statistical analysis was conducted separately for the Academic Achievement in Reading/English Language Arts and for the Academic Achievement in Mathematics designation distinctions. Prior to conducting the MANOVA procedures, the underlying assumptions for normality of the four dependent variables for each independent variable were checked. Specifically examined were Box's Test of Equality of Covariance and the Levene's Test of Equality of Error Variances. Although these assumptions were not met, Field (2013) contends that the MANOVA is sufficiently robust that a violation can be withstood.

For the 2012-2013 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .96$, $p < .001$, partial $\eta^2 = .04$, in student enrollment percentages by ethnicity/race between schools that earned a distinction designation in Reading/English Language Arts schools and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. Univariate follow-up analysis of variance (ANOVA) procedures were then calculated to determine which particular student ethnic/racial grouping (i.e., Asian, Black, Hispanic, and White) percentages differed between the two school distinction designations. The ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn this distinction in the percentage of Asian students, $F(4, 1043) = 41.96$, $p < .001$, partial $\eta^2 = .04$; and in the percentage of Black students, $F(4, 1043) = 7.20$, $p = .007$, partial $\eta^2 = .002$. The effect sizes for these two statistically significant differences were small and below small, respectively.

High schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Asian students (3.68%) than did high schools that did not earn this distinction designation (1.64%). High schools that did not earn a distinction designation in Reading/English Language Arts had a statistically higher percentage of Black students (12.00%) than did high schools that earned this distinction designation (9.24%). Statistically significant differences were not present, however, in the percentage of Hispanic student enrollment, $F(4, 1043) = 0.53$, $p = .47$; and in the percentage of White student enrollment, $F(4, 1043) = 1.03$, $p = .31$. Similar percentages of Hispanic and White students were enrolled in

both the high schools that meet this particular distinction designation and in high schools that did not meet this particular distinction designation. Readers are directed to Table 4.3 for the descriptive statistics for this analysis.

 Insert Table 4.3 about here

Concerning the 2013-2014 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .94$, $p < .001$, partial $\eta^2 = .06$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a moderate effect size was present. The follow-up ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn this distinction in the percentage of Asian students, $F(4, 1202) = 66.66$, $p < .001$, partial $\eta^2 = .05$; and in the percentage of Hispanic students, $F(4, 1202) = 4.43$, $p = .036$, partial $\eta^2 = .004$. The effect sizes for these two statistically significant differences were small and below small, respectively. Although not statistically significant at the conventional .05 level, near-statistically significant differences were present in the percentage of Black students, $F(4, 1202) = 3.03$, $p = .08$. Statistically significant differences were not present in the percentage of White students, $F(4, 1202) = 1.94$, $p = .16$.

Similar to the previous school year, high schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher

percentage of Asian students (4.32%) than did high schools that did not earn this distinction designation (1.64%). High schools that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Hispanic students (44.71%) than did high schools that earned this distinction (40.87%). Similar percentages of Black and White students were enrolled in both high school groupings. Table 4.4 contains the descriptive statistics for this analysis.

 Insert Table 4.4 about here

Regarding the 2014-2015 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .95$, $p < .001$, partial $\eta^2 = .05$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn a distinction in the percentage of Asian students, $F(4, 1055) = 34.11$, $p < .001$, partial $\eta^2 = .03$; and in the percentage of Black students, $F(4, 1055) = 10.03$, $p = .002$, partial $\eta^2 = .009$. A small effect size was present for the Asian student group and a below small effect size was present for the Black student group (Cohen, 1988). Statistically significant differences were not present in the percentage of Hispanic students, $F(4, 1055) = 1.52$, $p = .22$; and in the percentage of White students, $F(4, 1055) = 0.52$, $p = .47$.

Similar to the previous two school years, high schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Asian students (3.68%) than did high schools that did not earn this distinction designation (1.77%). Similar to the 2012-2013 school year, high schools that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Black students (12.17%) than did high schools that earned this distinction designation (9.13%). Similar percentages of Hispanic and White students were enrolled in both high school types. Delineated in Table 4.5 are the descriptive statistics for this analysis.

Insert Table 4.5 about here

With respect to the 2015-2016 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .95$, $p < .001$, partial $\eta^2 = .05$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in Reading/English Language Arts and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in Reading/English Language Arts and schools that did not earn a distinction in the percentage of Asian students, $F(4, 1067) = 37.01$, $p < .001$, partial $\eta^2 = .03$; and in the percentage of Black students, $F(4, 1067) = 11.73$, $p = .001$, partial $\eta^2 = .01$. Both effect sizes were small (Cohen, 1988). Statistically significant

differences were not present in the percentages of Hispanic students, $F(4, 1067) = 0.23, p = .63$; and in the percentage of White students, $F(4, 1067) = 0.87, p = .35$.

Congruent with the previous three school years, high schools in Texas that earned a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Asian students (3.90%) than did high schools that did not earn this distinction designation (1.84%). Commensurate with the 2012-2013 and the 2014-2015 school year's results, high schools that did not earn a distinction designation in Reading/English Language Arts had a statistically significantly higher percentage of Black students (11.94%) than did high schools that earned this distinction designation (8.82%). Similar percentages of Hispanic and White students were enrolled in both high school types. Presented in Table 4.6 are the descriptive statistics for this analysis.

 Insert Table 4.6 about here

For the 2012-2013 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .95, p < .001$, partial $\eta^2 = .05$, in student enrollment percentages by ethnicity/race for between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up ANOVAs yielded statistically significant differences between schools that earned a distinction in mathematics and schools that did not earn a distinction in the percentage of Asian students, $F(4, 1043) = 35.64, p < .001$, partial $\eta^2 = .03$; and in the percentage of Black students, $F(4, 1043) = 10.23, p = .001$, partial $\eta^2 = .01$. Both effect sizes were small (Cohen, 1988). Statistically significant

differences were not present in the percentage of Hispanic students, $F(4, 1043) = 0.13, p = .72$; and in the percentage of White students, $F(4, 1043) = 1.02, p = .31$. Readers are directed to Table 4.7 for the descriptive statistics for this analysis.

 Insert Table 4.7 about here

High schools in Texas that earned a distinction designation in mathematics had a statistically significantly higher percentage of Asian students (3.45%) than did high schools that did not earn this distinction designation (1.63%). High schools that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of Black students (12.25%) than did high schools that earned this distinction designation (9.07%). Similar percentages of Hispanic and White students were enrolled in both high school types.

Concerning the 2013-2014 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .95, p < .001$, partial $\eta^2 = .05$, in overall student enrollment percentages by ethnicity/race between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in mathematics and schools that did not earn a distinction in the percentage of Asian students, $F(4, 1241) = 41.20, p < .001$, partial $\eta^2 = .03$; and in the percentage of Black students, $F(4, 1241) = 13.23, p < .001$, partial $\eta^2 = .01$. Both effect sizes were small (Cohen, 1988). Statistically significant differences were not present in the

percentage of Hispanic students, $F(4, 1241) = 0.62, p = .43$; and in the percentage of White students, $F(4, 1241) = 2.36, p = .12$.

Similar to the previous school year, high schools in Texas that earned a distinction designation in mathematics had a statistically significantly higher percentage of Asian students (3.79%) than did high schools that did not earn this distinction designation (1.77%). High schools that did not earn a distinction designation in mathematics had a statistically significantly higher percentage of Black students (12.44%) than did high schools that earned this distinction designation (9.11%). Delineated in Table 4.8 are the descriptive statistics for this analysis. Similar percentages of Hispanic and White students were enrolled in both high school types.

 Insert Table 4.8 about here

Regarding the 2014-2015 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .95, p < .001$, partial $\eta^2 = .05$, in student enrollment percentages by ethnicity/race between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a small effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in mathematics and schools that did not earn a distinction in the percentage of Asian students, $F(4, 1055) = 43.30, p < .001$, partial $\eta^2 = .04$; and in the percentage of White students, $F(4, 1055) = 4.72, p = .04$, partial $\eta^2 = .004$. The effect sizes for these two statistically significant differences were small and below small, respectively (Cohen,

1988). Statistically significant differences were not present, however, in the percentage of Hispanic students, $F(4, 1055) = 3.10, p = .08$; and in the percentages of Black students, $F(4, 1055) = 2.53, p = .11$.

Similar to the previous two school years, high schools in Texas that earned a distinction designation in mathematics had a statistically significantly higher percentage of Asian students (3.75%) than did high schools that did not earn this distinction designation (1.64%). High schools that did not earn a distinction designation in mathematics had a statistically higher percentage of White students (40.33%) than did high schools that earned this distinction designation (36.48%). Similar percentages of Black and Hispanic students were enrolled in both the high schools that meet this particular distinction designation and in high schools that did not meet this particular distinction designation. Readers are directed to Table 4.9 for the descriptive statistics for this analysis.

 Insert Table 4.9 about here

With respect to the 2015-2016 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .94, p < .001$, partial $\eta^2 = .07$, in overall student enrollment percentages by ethnicity/race for Texas high schools between schools that earned a distinction designation in mathematics and schools that did not earn this distinction designation. Using Cohen's (1988) criteria, a moderate effect size was present. The follow-up univariate ANOVAs yielded statistically significant differences between schools that earned a distinction in mathematics and schools that did not earn a

distinction in the percentage of Asian students, $F(4, 1067) = 65.77, p < .001$, partial $\eta^2 = .06$. A moderate effect size was present for the Asian student group. Statistically significant differences were not present in the percentage of Black students, $F(4, 1067) = 2.10, p = .15$; in the percentage of Hispanic students, $F(4, 1067) = 0.05, p = .82$; and in the percentage of White students, $F(4, 1067) = 0.41, p = .52$.

Congruent with the previous three school years, high schools in Texas that earned a distinction designation in mathematics had a statistically significantly higher percentage of Asian students (4.28%) than did high schools that did not earn this distinction designation (1.59%). Similar percentages of Black, Hispanic, and White students were enrolled in both elementary school types. Presented in Table 4.10 are the descriptive statistics for this analysis.

 Insert Table 4.10 about here

Discussion

In this statewide, multiyear analysis, the degree to which the percentage of beginning teachers differed between two Texas high school accountability ratings was determined. Moreover, the extent to which differences were present in student enrollment ethnic/racial characteristics by school accountability rating for Texas high schools was ascertained. These two purposes were addressed for four school years of data. Following statistical analyses, results of this empirical investigation were then compared with the results from the Martinez-Garcia and Slate (2010, 2012a, 2012b) and Moreno and Slate (2015) studies on the previous Texas accountability system.

Texas high schools that did not earn the Academic Achievement in Reading/English Language Arts and the Academic Achievement in Mathematics distinction designations had statistically significantly higher percentages of beginning teachers than did high schools that earned this distinction in all four years of data analyzed. The magnitude of the differences in the percentages of beginning teachers between schools that earned a distinction designation and schools that did not earn a distinction designation were ascertained by calculating Cohen's *ds* (Cohen, 1988). The array of the Cohen's *d* calculations in the percentages of beginning teachers for high schools that earned, or did not earn, the Reading/English Language Arts distinction designation analyses was from a low of 0.22 to a high of 0.39, with the average being 0.29 for the four years of data analyzed. As such, the average degree of practical significance of the statistically significant results was small. Though small, readers should note that the analyses conducted in this investigation consisted of aggregated data on thousands of Texas high school students. Students who were enrolled in high schools that did not meet the distinction designations had higher percentages of beginning teachers than did students who were enrolled in schools that did meet these distinction designations. Table 4.11 contains the Cohen's *d* effect size calculations for the percentages of beginning teachers for high schools that earned, or did not earn, the Reading/English Language Arts distinction designation.

Insert Table 4.11 about here

With regard to the mathematics distinction designation, the array of Cohen's d calculations in the percentages of beginning teachers for high schools that earned, or did not earn, this distinction designation analyses was from a low of 0.12 to a high of 0.30, with the average being 0.28 for the three years of data analyzed. As such, the average degree of practical significance of the statistically significant results was small. Students who were enrolled in high schools that did not meet the distinction designations had higher percentages of beginning teachers than did students who were enrolled in schools that did meet these distinction designations. Table 3.11 contains the Cohen's d effect size calculations for the percentages of beginning teachers for high schools that earned, or did not earn, the mathematics distinction designation.

With respect to student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White), statistically significant differences between schools that earned a distinction designation in Reading/English Language Arts and mathematics schools and schools that did not earn these distinction designation were present. Although statistically significant differences between two different distinction designations were present in this investigation, statistically significant differences were not present in all ethnic/racial student groups. Percentages of student enrollment for Black, Hispanic, and White students were not consistently statistically significant across all four years analyzed. However, for all four school years analyzed, statistically significant differences were present for Asian students between the two different distinction designations.

Although not discussed in the Results section of this investigation, differences were clearly evident in the number of schools in the 2012-2013 school year that met and

did not meet the Reading/English Language Arts distinction designation. The number of high schools that did not meet this distinction designation were 734, which was more than twice as many schools that did meet this distinction, 311. With respect to the 2013-2014 school year, schools that did not meet this distinction designation were 830, again, more than twice as many schools that did meet this distinction, 374. Regarding the 2014-2015 school year, schools that did not meet this distinction designation were 699, nearly twice as many schools that did meet this distinction designation, 357. For the 2015-2016 school year, schools that did not meet this distinction designation were 696, again, nearly twice as many schools that did meet this distinction designation, 370.

Similarly, with regard to the mathematics distinction designation, differences were clearly evident in the number of schools in the 2012-2013 school year that met and did not meet this distinction designation. The number of high schools that did not meet this distinction designation were 694, which was nearly twice as many schools that did meet this distinction, 351. With respect to the 2013-2014 school year, schools that did not meet this distinction designation were 799, again, nearly twice as many schools that did meet this distinction, 444. Regarding the 2014-2015 school year, schools that did not meet this distinction designation were 667, less than twice as many schools that did meet this distinction designation, 389. For the 2015-2016 school year, schools that did not meet this distinction designation were 682, again, less than twice as many schools that did meet this distinction designation, 384.

Connections with Existing Literature

Results in this empirical, multiyear statewide investigation were congruent with prior research. Martinez-Garcia and Slate (2012b) documented the presence of

statistically significant differences in the percentage of beginning teachers by accountability rating in three of the five years (i.e., 2003-2004, 2004-2005, and 2007-2008) of data they analyzed in Texas high schools. Similarly, Moreno and Slate (2015) documented the presence of statistically significant differences in the percentage of beginning teachers by school accountability rating in Texas high schools during the 2010-2011 school year. Comparatively, Peske and Haycock (2006) revealed that high schools in Ohio that were classified as low performing were taught by fewer qualified teachers than in higher performing schools with more qualified teachers.

Readers should be cautioned, however, that other researchers (Clotfelter, Ladd, & Vigdor, 2005; Darling-Hammond, 2008; Foley & Nelson, 2011; Gagnon & Mattingly, 2015) produced results that were not entirely commensurate with the results of this multiyear, statewide investigation. Results in this study were partially consistent with prior research regarding the overall student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White) for Texas high schools between schools that earned a distinction designation and schools that did not earn a distinction. With regard to student characteristics, researchers (Gagnon & Mattingly, 2015; Peske and Haycock, 2006) revealed a high percentage of low performing schools with a high percentage of ethnically/racially diverse students (i.e., Black and Hispanic) were taught by beginning teachers.

Implications for Policy and Practice

Based on the results of this empirical, multiyear statewide investigation, several implications for policy and practice can be made. Because a relationship between teacher quality and student achievement was established previously by researchers (e.g., Darling-

Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2012a, 2012b) and supported in this investigation, one implication from the results of this investigation would be for educational leaders to be cautioned with regard to placing inexperienced teachers in low performing schools. A second implication, with federal and state mandates to address student achievement, would be for educational leaders to be encouraged to hire experienced, quality teachers to avoid receiving poor accountability ratings from the state and be placed on an improvement plan (Alliance for Excellent Education, 2016a). A third implication would be the placement of high quality and experienced teachers in low performing, difficult-to-staff, schools. Placing high quality and experienced teachers in low performing school may provide a solution for the inequitable distribution of high quality, experienced teachers.

Recommendations for Future Research

In this study, the degree to which differences were present in the percentages of beginning teachers by school accountability rating for Texas high schools was addressed. Regarding the consistent results that were obtained in this investigation of high schools, researchers should consider extending this study to elementary schools and to middle schools. Another suggestion for future research would be to replicate this investigation in other states. The degree to which the results obtained herein on Texas high schools would be generalizable to high schools in other states is not known. Also this study could be extended to other teacher characteristics (e.g., route to being credentialed and certified, ethnicity/race, and content area) than to a focus on only the percentage of beginning teachers. Furthermore, investigations could be conducted in which student

demographic characteristics such as economic disadvantage, at-risk status, and English Language Learner are examined.

Conclusion

In this investigation, the degree to which the percentage of beginning teachers and student ethnicity/race enrollment percentages in Texas high schools differed between two different distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics) was determined. Archival data for the 2012-2013 through the 2015-2016 school years for all traditionally configured Texas high schools were analyzed. Statistically significant differences were yielded in all statistical analyses regarding the percentage of beginning teachers between the two different distinction designations. Higher percentages of beginning teachers were present in high schools that did not meet the two distinction designations for each school year. With regard to student enrollment percentages, higher percentages of Black and Hispanic students were present in schools that did not meet the two distinction designation. Higher percentages of Asian students were present in schools that did meet the two distinction designations.

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Table 4.1

Descriptive Statistics for the Percentages of Beginning Teachers Between Schools That Met and Did Not Meet the Reading/English Language Arts Distinction Designation for the 2012-2013 Through the 2015-2016 School Years

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
2012-2013			
Met Distinction	311	5.92	5.24
Did Not Meet Distinction	734	7.18	6.28
2013-2014			
Met Distinction	374	8.14	10.31
Did Not Meet Distinction	830	8.29	7.30
2014-2015			
Met Distinction	357	6.76	5.66
Did Not Meet Distinction	699	8.34	6.87
2015-2016			
Met Distinction	370	5.98	4.94
Did Not Meet Distinction	696	8.14	5.99

Table 4.2

Descriptive Statistics for the Percentages of Beginning Teachers Between Schools That Met and Did Not Meet the Mathematics Distinction Designation for the 2012-2013 Through the 2015-2016 School Years

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
2012-2013			
Met Distinction	351	6.19	5.61
Did Not Meet Distinction	694	7.12	6.19
2013-2014			
Met Distinction	444	7.77	10.08
Did Not Meet Distinction	799	8.91	8.43
2014-2015			
Met Distinction	389	6.73	5.05
Did Not Meet Distinction	667	8.43	7.19
2015-2016			
Met Distinction	384	6.33	4.96
Did Not Meet Distinction	682	7.99	6.05

Table 4.3

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2012-2013 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	312	3.68	7.27
Black	312	9.24	12.01
Hispanic	312	42.84	29.07
White	312	41.92	28.16
Did Not Meet Distinction			
Asian	736	1.64	2.94
Black	736	12.00	16.41
Hispanic	736	44.28	29.63
White	736	39.94	29.28

Table 4.4

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2013-2014 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	375	4.32	8.15
Black	375	9.84	12.59
Hispanic	375	40.87	28.26
White	375	42.56	28.07
Did Not Meet Distinction			
Asian	832	1.64	3.24
Black	832	11.48	16.16
Hispanic	832	44.71	29.81
White	832	40.03	29.68

Table 4.5

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2014-2015 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	360	3.68	7.33
Black	360	9.13	11.90
Hispanic	360	46.83	29.92
White	360	38.02	27.49
Did Not Meet Distinction			
Asian	700	1.77	3.34
Black	700	12.17	16.05
Hispanic	700	44.50	28.76
White	700	39.36	29.20

Table 4.6

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Reading/English Language Arts
Distinction Designation in the 2015-2016 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	373	3.90	7.71
Black	373	8.82	10.52
Hispanic	373	45.70	29.71
White	373	39.15	27.90
Did Not Meet Distinction			
Asian	699	1.84	3.32
Black	699	11.94	15.85
Hispanic	699	46.59	28.93
White	699	37.44	28.74

Table 4.7

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2012-2013 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	353	3.45	7.16
Black	353	9.07	12.84
Hispanic	353	43.39	28.92
White	353	41.79	28.74
Did Not Meet Distinction			
Asian	695	1.63	2.64
Black	695	12.25	16.29
Hispanic	695	44.08	29.75
White	695	39.88	29.06

Table 4.8

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2013-2014 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	446	3.79	7.74
Black	446	9.11	11.97
Hispanic	446	42.72	28.09
White	446	42.15	27.76
Did Not Meet Distinction			
Asian	800	1.77	3.29
Black	800	12.44	17.21
Hispanic	800	44.08	30.08
White	800	39.49	30.01

Table 4.9

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2014-2015 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	392	3.75	7.33
Black	392	10.19	12.99
Hispanic	392	47.35	29.10
White	392	36.48	27.52
Did Not Meet Distinction			
Asian	668	1.64	2.96
Black	668	11.69	15.80
Hispanic	668	44.08	29.16
White	668	40.33	29.18

Table 4.10

*Descriptive Statistics for the Percentages of Student Enrollment by Ethnicity/Race
Between Schools That Met and Did Not Meet the Mathematics Distinction Designation in
the 2015-2016 School Year*

Distinction Designation	<i>n</i> of schools	<i>M</i> %	<i>SD</i> %
Met Distinction			
Asian	387	4.28	7.82
Black	387	10.01	11.74
Hispanic	387	46.01	29.42
White	387	37.30	28.15
Did Not Meet Distinction			
Asian	685	1.59	2.83
Black	685	11.31	15.54
Hispanic	685	46.44	29.08
White	685	38.45	28.63

Table 4.11

Cohen's ds for the Percentages of Beginning Teachers Between Schools That Met and Did Not Meet the Reading/English Language Arts and Mathematics Distinction

Designation by School Year

School Year	Cohen's <i>d</i>	%age Point Difference
2012-2013		
Reading/English Language Arts	0.22	1.21
Mathematics	0.16	1.15
2013-2014		
Reading/English Language Arts	N/A	N/A
Mathematics	0.12	1.15
2014-2015		
Reading/English Language Arts	0.25	1.23
Mathematics	0.27	1.25
2015-2016		
Reading/English Language Arts	0.39	1.36
Mathematics	0.30	1.26

CHAPTER V

Discussion

Four purposes were present in this journal-ready dissertation. The first purpose was to examine the degree to which the percentages of beginning teachers in traditionally configured elementary, middle, and secondary Texas schools differed as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics). The second purpose was to determine the extent to which differences were present in student ethnic/racial enrollment as a function of two distinction designations for traditionally configured elementary, middle, and secondary Texas schools. The third purpose was to ascertain whether trends were present in the percentage of beginning teachers and student ethnic/racial enrollment with respect to distinction designations in reading and in mathematics. The final purpose was to determine the degree to which prior trends established by Martinez-Garcia and Slate (2010, 2012a, 2012b), Moreno and Slate (2015), and Lopez and Slate (2014) were commensurate with the 2011-2012 through the 2014-2015 school years that were examined in this study. In this chapter, results are discussed and a summary of each of the three articles is provided. Implications for policy and for practice are also discussed. Lastly, recommendations for future research are provided.

Study One

In the first empirical, multiyear statewide investigation, the degree to which differences were present in the percentage of beginning teachers between two Texas elementary school accountability ratings was examined. Additionally, student enrollment percentages by ethnicity/race were compared between two different school accountability

ratings for Texas elementary schools. Furthermore, trends for both the percentage of beginning teachers and for student enrollment ethnic/racial percentages were determined.

Texas elementary schools that did not earn the Academic Achievement in Reading/English Language Arts and the Academic Achievement in Mathematics distinction designations had statistically significantly higher percentages of beginning teachers than did elementary schools that earned this distinction in all four years of data that were analyzed. Students who were enrolled in elementary schools that did not meet the distinction designation in Reading/English Language Arts had higher percentages of beginning teachers than did students who were enrolled in schools that did meet these distinction designations. Students who were enrolled in elementary schools that did not meet the distinction designation for mathematics also had higher percentages of beginning teachers than did students who were enrolled in schools that did meet these distinction designations.

With respect to student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White), statistically significant differences were present between schools that earned a distinction designation in Reading/English Language Arts and Academic Achievement in Mathematics schools and schools that did not earn these distinction designations. For all four school years analyzed, the percentage of Asian student enrollment was higher in those elementary schools that earned either distinction designation. The percentage of Black student enrollment, though not statistically significant in all four school years, was higher in those elementary schools that did not earn either distinction designation than in elementary schools that did meet either

distinction designation. Hispanic student enrollment percentages did not differ between these two accountability ratings.

Results of this multiyear, statewide investigation were congruent with the results of other researchers (e.g., Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2010, 2012a, 2012b; Moreno & Slate, 2015; Peske & Haycock, 2006) who documented the presence of statistically significantly higher percentages of beginning teachers in lower performing schools than in higher performing schools. Similarly, results delineated herein were commensurate with Lopez and Slate (2014) who established statistically significant differences in the percentage of beginning teachers between elementary schools that did not earn distinction designations in Reading/English Language Arts and Mathematics and schools that did meet these distinctions designations.

Study Two

Analyzed in this second statewide, multiyear analysis was the extent to which differences were present in beginning teacher percentages between two Texas middle school accountability ratings. Additionally, differences in student enrollment percentages by ethnicity/race between two different school accountability ratings for Texas middle schools were determined. Furthermore, trends for both the percentage of beginning teachers and for student enrollment ethnic/racial percentages were ascertained.

Texas middle schools that did not earn the Academic Achievement in Reading/English Language Arts and the Academic Achievement in Mathematics distinction designations had statistically significantly higher percentages of beginning teachers than did middle schools that earned this distinction in all four years of data analyzed. Students who were enrolled in middle schools that did not meet either

distinction designation had higher percentages of beginning teachers than did students who were enrolled in schools that did meet these distinction designations.

With respect to student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White), statistically significant differences were present between middle schools that earned a distinction designation in Reading/English Language Arts and Mathematics and schools that did not earn these distinction designation were present. Although statistically significant differences between two different distinction designations were present in this investigation, percentages of student enrollment for Black, Hispanic, and White students were not consistently statistically significant across all four years analyzed. Higher percentages, however, for Black students, Hispanic students, and White students, were present in middle schools that did not earn either distinction designations for some of the school years analyzed. Statistically significant differences were present for Asian students between the two different distinction designations. For all four school years analyzed, the percentages of Asian students was statistically significantly higher in schools that earned either distinction designations than in schools that did not earn either distinction designations.

In this multiyear, statewide investigation, results were congruent with the results of other researchers (e.g., Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2010, 2012a, 2012b; Peske & Haycock, 2006) who established the presence of statistically significantly higher percentages of beginning teachers in lower performing schools than in higher performing schools. Similarly, results delineated herein were commensurate with Moreno and Slate (2015) who documented statistically significant differences in the percentage of beginning teachers by school accountability ratings for the 2010-2011

school year. As such, an inequitable distribution of experienced, quality teachers is an issue in middle schools.

Study Three

Examined in this third statewide, multiyear article was the degree to which the percentage of beginning teachers differed between two Texas high school accountability ratings. Moreover, the extent to which differences were present in student enrollment ethnic/racial characteristics by school accountability rating for Texas high schools was ascertained. These two purposes were addressed for four school years of data. Texas high schools that did not earn the Academic Achievement in Reading/English Language Arts and the Academic Achievement in Mathematics distinction designations had statistically significantly higher percentages of beginning teachers than did high schools that earned this distinction in all four years of data analyzed.

With respect to student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White), statistically significant differences were present between schools that earned a distinction designation in Reading/English Language Arts and in Mathematics and schools that did not earn these distinction designation were present. Although statistically significant differences between two different distinction designations were present in this investigation, statistically significant differences were not present in all ethnic/racial student groups. Not consistent were the percentages of student enrollment for Black students, Hispanic students, and White students across all four years analyzed. Higher percentages, however, for Black students, Hispanic students, and White students, were present in high schools that did not earn either distinction designations for some of the school years analyzed. For all four school years analyzed,

statistically significant differences were present for Asian students between the two different distinction designations. Higher percentages of Asian students were present in schools that earned either distinction designations than in schools that did not earn either distinction designations.

Results in this third empirical, multiyear statewide investigation were congruent with prior research. Martinez-Garcia and Slate (2012b) documented the presence of statistically significant differences in the percentage of beginning teachers by accountability rating in three of the five years (i.e., 2003-2004, 2004-2005, and 2007-2008) of data they analyzed in Texas high schools. Similarly, Moreno and Slate (2015) documented the presence of statistically significant differences in the percentage of beginning teachers by school accountability rating in Texas high schools during the 2010-2011 school year

Connection to Theoretical Framework

A theoretical framework for this journal-ready dissertation was provided by the theory of social justice in education (Blackmore, 2013). Social justice is about equity and fairness in society with regard to various types of social groups identified by gender, gender identity, ethnicity/race, disability, and class who may have been marginalized, oppressed, or exploited by other members of society (Blackmore, 2013). Within social justice theory is the theory of equity of access. Equity of access is about providing equal opportunity to all members of society with regard to learning (Shields, 2013). Shield (2013) posited that equity of access can include more than just opportunity to learning such as access to all educational programs for all members of society.

Based on the results of this journal-ready dissertation, an inequitable distribution of experienced teachers was present in all traditionally configured schools across all four years analyzed. As such, students in low performing schools may be missing optimal opportunities of being taught by experienced teachers. Results from this study are commensurate with researchers (e.g., Martinez-Garcia et al., 2011; Martinez-Garcia & Slate, 2010, 2012a, 2012b; Moreno & Slate, 2015; Peske & Haycock, 2006) who documented the presence of statistically significantly higher percentages of beginning teachers in lower performing schools than in higher performing schools.

Additionally, social justice theorists propose reform within society to address the inequities in society (Bates, 2013; Blackmore, 2013; Cazden, 2012; Shields, 2013). The results of this study support the aforementioned assertion. Due to the inequitable access to experienced and quality teachers for students of diverse ethnic/racial backgrounds, social justice theory in education provided the premise for this journal-ready dissertation (Borman & Dowling, 2010; Clotfelter et al., 2005; Jimenez-Castellanos, 2012; Whitehurst, 2002).

Connections with Existing Literature

Results in all three articles in these multiyear, statewide investigations were congruent with the results of other researchers (Lopez & Slate, 2014; Martinez-Garcia, LaPrairie, & Slate, 2011; Martinez-Garcia & Slate, 2010, 2012a, 2012b; Moreno & Slate, 2015; Peske & Haycock, 2006) who established the presence of statistically significantly higher percentages of beginning teachers in lower performing schools than in higher performing schools. With respect to the first article in this journal-ready dissertation, results were commensurate with Lopez and Slate (2014) who documented statistically

significant differences in the percentage of beginning teachers between elementary schools that did not earn distinction designations in Reading/English Language Arts and Mathematics and schools that did meet these distinctions designations. Comparatively, Peske and Haycock (2006) revealed that elementary schools in which students performed poorly in reading had a higher percentage of inexperienced teachers than in schools that performed well in reading. Peske and Haycock further revealed that high schools in Ohio that were classified as low performing were taught by fewer qualified teachers than in higher performing schools with more qualified teachers. Additionally, results delineated in all three articles were commensurate with Moreno and Slate (2015) who documented statistically significant differences in the percentage of beginning teachers by school accountability ratings for the 2010-2011 school year.

Readers should recognize, however, that other researchers (Clotfelter et al., 2005; Darling-Hammond, 2008; Foley & Nelson, 2011; Gagnon & Mattingly, 2015) produced results that are not entirely commensurate with the results of the three studies in this journal-ready dissertation. Findings were partially consistent with prior research regarding the overall student enrollment percentages by ethnicity/race (i.e., Asian, Black, Hispanic, and White) for all traditionally configured Texas schools between schools that earned a distinction designation and schools that did not earn such a distinction. With regard to student characteristics, researchers (Gagnon & Mattingly, 2015; Peske & Haycock, 2006) revealed a high percentage of low performing schools with a high percentage of ethnically/racially diverse students (i.e., Black and Hispanic) were taught by beginning teachers. Additionally, researchers (Alliance for Excellent Education, 2016a; Darling-Hammond, 2008; Foley & Nelson, 2011; Gagnon & Mattingly, 2015)

documented beginning teachers were more likely to be placed in schools rated by federal and state standards as being low performing and with student enrollment being comprised of predominantly Black and Hispanic students.

Implications for Policy and Practice

Based on the results of the three studies in this journal-ready dissertation, several implications for policy and for practice can be made. First, Texas public school administrators should consider establishing policies to encourage placing more qualified and experienced teachers in low performing schools. Second, hiring practices should be aligned with the needs of the campus. If the needs of the campus were reflective of consistently low student performance, then hiring experienced, quality teachers to fit the needs of the campus should take precedence over hiring inexperienced teachers.

Third, due to the inequitable distribution of quality teachers, educational leaders should examine their policies with regard to how their schools are staffed. As such, difficult-to-staff schools tend to be less attractive to well qualified and experienced teachers. A fourth implication, if beginning teachers are to be considered for hire within low performing schools, would be for educational leaders to be mindful of candidate's teaching certification, experience, and availability of a mentoring and induction program (Darling-Hammond, 2008; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011). Due to the relationship established by researchers (e.g., Clotfelter et al., 2006; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b, Peske & Haycock, 2006) between teaching experience and student achievement, a fifth implication would be to ensure new teachers are supported in their first year. Providing support to new teachers could reduce the likelihood of low student performance

(Coronado, 2009; Ingersoll & Smith, 2004; Ingersoll & Strong, 2011; Smith & Ingersoll, 2004).

Because the Every Student Succeeds Act required states to establish their own accountability rating system, experienced quality teachers continue to be needed in schools with a low performance rating (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b). As such, a sixth implication would be to place experienced and high quality teachers in schools with a low accountability rating. Placing experienced and high quality teachers in low performing schools could provide a solution for the inequitable distribution of experienced, high quality teachers. As a final implication, improving school accountability through better hiring practices aligned with the needs of the school may provide a more attractive campus for more experienced and qualified teachers.

Recommendations for Future Research

Given the consistent results that were obtained in the three investigations of this journal-ready dissertation, a first recommendation for future research would be for researchers to extend this study to include school years that were not analyzed in these investigations. A second recommendation for future research would be to replicate this study in other states. The degree to which the results obtained herein would be generalizable to other states is not known. A third recommendation would be to extend this investigation to other teacher characteristics (e.g., route to being credentialed and certified, ethnicity/race, and content area) rather than to focus solely on the percentage of beginning teachers. A fourth recommendation for future investigations could be

conducted in which student demographic characteristics such as economic disadvantage, at-risk status, and English Language Learner are examined.

To expand the current literature on potential relationships between beginning teachers and school accountability ratings, a fifth recommendation for research would be to conduct similar investigations by different distinction designations other than the two distinction designations (i.e., Reading/English Language Arts and mathematics) in this journal-ready dissertation. Other distinction designations in Texas' accountability rating system include: (a) Academic Achievement in Science; (b) Academic Achievement in Social Studies; (c) Top 25 Percent: Student Progress; (d) Top 25 Percent: Closing Performance Gaps; and (e) Postsecondary Readiness. Similar to the two different distinction designations in this journal-ready dissertation, the aforementioned distinction designations required the school to have achieved a *Met Standard* rating to be considered for a distinction designation.

In this journal-ready dissertation, independent variables included a comparison of two distinction designations and *Met Standard*. The Texas Education Agency (2015) required campuses to achieve a minimum of *Met Standard* to be considered for one or more distinction designation based on the criteria for each respective distinction designation. Additionally, a *Met Standard* rating is given to campuses that achieved an acceptable performance in all performance indexes established by the Texas Education Agency (2015). As such, the variables compared in this journal-ready dissertation did not include a comparison of schools that did not achieve a *Met Standard* rating. Schools that did not achieve a *Met Standard* rating indicated a low performance rating in one or more of the performance indexes and were classified as *Improvement Required*.

Accordingly, further investigation is recommended to investigate whether differences may be present in the percentage of beginning teachers between schools that earned a *Met Standard* rating and schools that earned an *Improvement Required* rating. This type of investigation could provide another perspective regarding a comparison of low performing students to higher performing students in a potential relation to beginning teachers.

Conclusion

In this journal-ready dissertation, the degree to which the percentage of beginning teachers and student ethnicity/race enrollment percentages in traditionally configured Texas elementary, middle, and high schools differed as a function of two distinction designations (i.e., Academic Achievement in Reading/English Language Arts and Academic Achievement in Mathematics). Statistically significant higher percentages of beginning teachers were present in traditionally configured elementary, middle, and high schools that did not meet the two distinction designations than in elementary, middle, and high schools that did meet the two distinction designations. With respect to student enrollment percentages by ethnicity/race, higher percentages of Asian students were present for all school years in traditionally configured elementary, middle, and high schools that met either distinction designation. Higher percentages of Black students, Hispanic students, and White students were present at schools that did not meet the two distinction designations. However, higher percentages of Hispanic students were present in the 2013-2014 school year for the Reading/English Language Arts distinction designation.

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APPENDIX



Institutional Review Board
Office of Research and Sponsored Programs
 903 Bowers Blvd, Huntsville, TX 77341-2448
 Phone: 936.294.4875
 Fax: 936.294.3622
irb@shsu.edu
www.shsu.edu/~rgs_www/irb/

DATE: April 12, 2017

TO: Samson Moreno [Faculty Sponsor: Dr. Cynthia Martinez-Garcia]

FROM: Sam Houston State University (SHSU) IRB

PROJECT TITLE: *Differences in Teacher and Student Characteristics by Accountability Ratings: A Texas Statewide Multiyear Study [T/D]*

PROTOCOL #: 2017-02-34263

SUBMISSION TYPE: INITIAL REVIEW

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: April 7, 2017

REVIEW CATEGORY: Category 4—research involving existing, publicly available data usually has little, if any, associated risk, particularly if subject identifiers are removed from the data or specimens.

Thank you for your submission of Initial Review materials for this project. The Sam Houston State University (SHSU) IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

*** What should investigators do when considering changes to an exempt study that could make it nonexempt?**

It is the PI's responsibility to consult with the IRB whenever questions arise about whether planned changes to an exempt study might make that study nonexempt human subjects research. In this case, please make available sufficient information to the IRB so it can make a correct determination.

If you have any questions, please contact the IRB Office at 936-294-4875 or irb@shsu.edu. Please include your project title and protocol number in all correspondence with this committee.

Sincerely,

Donna Desforges
 IRB Chair, PHSC

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Sam Houston State University IRB's records

VITA

Samson A. Moreno

Educational History

Doctorate of Education – Educational Leadership, August, 2017

Sam Houston State University, Huntsville, TX

Dissertation: Differences in Teacher and Student Characteristics by Accountability

Ratings: A Texas Statewide Multiyear Study

Master of Education – Teacher Leadership, December 2012

Lamar University, Beaumont, TX

Bachelor of Science – Fitness and Human Performance, May 2008

University of Houston Clear Lake, Houston, TX

Professional Licensure and Certifications

Texas Educator Certificate, Standard Classroom Teacher: Physical Education (Grades EC-12)

Texas Educator Certificate, Standard Classroom Teacher: Science (Grades 4-8)

Texas Educator Certificate, Standard Classroom Teacher: Generalist (Grades EC-6)

Texas Educator Certificate, Standard Principal

Professional Experience

Assistant Principal, Dr. Edward Roberson Middle School, Spring ISD, Houston, TX, August 2016-present

Teacher/Coach, Dr. Edward Roberson Middle School, Spring ISD, Houston, TX, August 2014-May 2016

Teacher, Northeast Christian Academy, Kingwood, TX, November 2012-June 2014

Teacher, Michael Null Middle School, Sheldon ISD, Houston, TX, September 2011-June 2012

Recognitions

Dr. Edward Roberson Teacher of the Year

Publications

Moreno, S. A., & Slate, J. R. (2015). Differences in beginning teacher percentages by accountability rating and school level. In R. V. Nata (Ed.), *Progress in Education, Volume 33* (pp. 21-30). Hauppauge, NY: Nova Publishers.

Moreno, S. A., & Slate, J. R. (2016). Differentiating charter from non-charter schools: A statewide investigation. *The Online Journal of New Horizons in Education*, 6(2), 12-19. Retrieved from <http://tojnied.net/?pid=showissue&volume=6&issue=2>

Presentations

Moreno, S. A. (2015, February). *Differences in beginning teacher percentages by accountability rating and school level*. Paper presented at the annual meeting of the Southwest Educational Research Association (SERA), San Antonio, TX.