Differences in Teacher and Student Demographic Characteristics by Middle School Accountability Rating: A Statewide, Multiyear Investigation

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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

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 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 affect 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 & DarlingHammond, 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 20152016 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 1 for the descriptive statistics for this analysis.

Table 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	*n* of schools	*M%*	*SD%*
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

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 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 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 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 2 contains the descriptive statistics for this analysis.

Table 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	*n* of schools	*M%*	*SD%*
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

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 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 20122013 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 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 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 for the descriptive statistics for this analysis.

Table 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	*n* of schools	*M%*	*SD%*
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

Concerning the 2013-2014 school year, the MANOVA revealed a statistically significant difference, Wilks' Λ = .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 4 contains the descriptive statistics for this analysis.

Table 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	*n* of schools	*M%*	*SD%*
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

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 5 are the descriptive statistics for this analysis.

Table 5

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

Distinction Designation	*n* of schools	*M%*	*SD%*
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

With respect to the 2015-2016 school year, the MANOVA revealed a statistically significant difference, Wilks' Λ = .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 6 are the descriptive statistics for this analysis.

Table 6

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

Distinction Designation	*n* of schools	*M%*	*SD%*
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

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 7 for the descriptive statistics for this analysis.

Table 7

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

Distinction Designation	*n* of schools	*M%*	*SD%*
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

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' Λ = .93, p < .001, partial η^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 η^2 = .06; and for the percentage of White students, $F(4, 1635) = 11.62$, p = .001, partial η^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 8 are the descriptive statistics for this analysis.

Table 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	*n* of schools	*M%*	*SD%*
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

Regarding the 2014-2015 school year, the MANOVA revealed a statistically significant difference, Wilks' Λ = .94, p < .001, partial η^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 9 for the descriptive statistics for this analysis.

Table 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	*n* of schools	*M%*	*SD%*
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

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 10 are the descriptive statistics for this analysis.

Table 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	*n* of schools	*M%*	*SD%*
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

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 *d*s (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 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.

Table 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 *d*	%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

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 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 designations 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 20132014

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, 20132014, 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 designations. Higher percentages of Asian students and Hispanic students were present in schools that did meet the two distinction designations.

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