DIFFERENCES IN READING ACHIEVEMENT BETWEEN CHARTER AND TRADITIONAL ELEMENTARY SCHOOLS

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Abstract

In this research study, the degree to which differences were present in reading performance between charter and traditional elementary public schools in Texas were determined. Archival data were obtained from the Texas Education Agency Public Education Information Management System on all Grade 3 students who were enrolled in either elementary charter or elementary traditional schools for the 2012-2013, 2013-2014, 2014-2015, and 2015-2016 school years. Inferential statistical procedures yielded the presence of statistically significant differences in all 4 school years. Grade 3 students who were enrolled in traditional elementary schools had statistically significantly higher reading passing rates and higher reading test scores on the state-mandated assessments in all 4 school years than did students who were enrolled in charter schools. Recommendations for future research and implications of these results are provided.

INTRODUCTION

Charter schools in Texas have had a rapid growth of approximately 250% within the last 10 years (Texas Education Agency, 2016a). Traditional public schools are now facing competition, and public funds are now diverted from traditional public schools to charter schools. Charter schools have become the option that allows students to receive an education without being subject to the regulations followed by traditional public schools (Barden & Lassmann, 2016). Yet, the efficacy of charter schools has not been established. Whereas some researchers (e.g., Raymond, 2016) argue that charter schools provide better academic results for their students, other researchers (e.g., Blazer, 2010) contend that the academic performance of students enrolled in charter schools is inconsistent. Russo (2013) believed parents are opting for charter schools in a mix of idealism and desperation for interventions.

Background of the Study

The idea of charter schools originated in 1988, when Albert Shanker, the president of the American Federation of Teachers, declared charter schools would provide choice in the public school system (Vergari, 1999). The first charter school law was passed in Minnesota in 1991 and the Texas legislature approved a charter school law in 1995. In the present, almost 3 million students attend charter schools in the United States. This number represents 6% of the total public school enrollment. In the 2016-2017 school year, approximately 315,200 students were enrolled in the 761 charter schools in Texas (National Alliance for Public Charter Schools, 2017). Charter schools in Texas serve a higher percentage of Hispanic and Black students than traditional public schools (Barden & Lassmann, 2016) and a lower percentage of English Language Learners than public schools (Vasquez et al., 2016).

Readers should note that charter schools do not follow the same local and state regulations as traditional public schools (U.S. Department of Education, 2015). Among some of the major characteristics of charter schools, the following can be listed: (a) they receive per-student funds from the government, (b) their students are admitted based on a lottery system, and (c) they do not charge tuition (Flaker, 2014). Charter schools are usually granted for periods of 3 to 5 years. Although charter schools do not have the same standards that the state requires from public schools, charter schools are obligated to follow health, safety, and nondiscriminatory regulations. Budget wise, charter schools receive less funding than traditional public schools; they receive state funds based on the average daily attendance of students. However, they do not receive funds from local tax revenue (Texas Education Agency, Charter Schools Funding, 2017, para. 1).

The creation of charter schools as schools of choice was an initiative of the school reform efforts to open the educational market to competition (Booker et al., 2008). Nevertheless, the debate about public education and school of choice is not new. This debate started in 1966 when James Coleman, author of the Coleman Report, noted that choosing residence was the only kind of school choice in the public school system and only the middle class and the affluent sector of the society could have the privilege of school choice (West, 2016). Coleman (1966) added that residential mobility produced ethnic/racial and income segregation in education, and disadvantaged groups were the most affected ones.

Promoters of school reform believe competition in the education market will improve the efficiency of the public educational system and student academic achievement (Booker et al., 2008). Booker et al. (2008) analyzed changes on the academic performance in traditional public

schools after the proliferation of charter schools. Included in the study were 8 years of individual test data of traditional public school students in Texas. Results were that charter school proliferation produced a positive effect on public school students. Students who remained in traditional public schools, surrounded by charter schools, had a positive reading and mathematics test score performance. A problem in the Booker et al. (2008) investigation, however, was the lack of a comparison group. Without having comparative school districts in which charter schools were not present and then analyzing student performance in those districts, it is not possible to attribute any academic achievement changes to the presence of charter schools.

Penning and Slate (2011) examined the development of charter schools in Texas. Through an analysis of the funding and academic performance of charter schools, Penning and Slate reported charter schools had a higher enrollment of Black and Hispanic students than traditional public schools. Even though students who were enrolled in charter schools were not outperforming traditional public schools, they did exhibit higher academic growth than public school students (Penning & Slate, 2011). Similar results were noted by Escalante and Slate (2017a) who compared the academic performance of charter elementary school students to traditional elementary school students in the 2014-2015 school year. Using Texas statewide data, students who were enrolled in traditional public elementary schools had higher reading scores in Grades 3 and 4 and higher science scores in Grade 5. Similar reading and writing scores were present for students enrolled in either school type for Grade 4 and Grade 5. Readers should note that in their Texas statewide comparison, students in charter elementary schools were not performing better in reading, writing, or in science than students who were enrolled in traditional elementary schools.

Whereas Booker et al. (2008) claimed the expansion of school choice was beneficial to the educational system and produced positive influences on the academic performance of Black and Hispanic students who remained in traditional public schools, Frankenberg and Siegel-Hawley (2011) considered charter schools as a political success but a civil rights failure because segregation is more accentuated in charter schools. This segregation is in part due to charter schools being located in urban areas. In some large cities or school districts, charter schools are located on separate areas of an established school, being limited in space and resources (Tanner, 2013).

In Texas, charter schools follow an open enrollment process, which means charter schools are required to accept applications from students who are within their geographic boundaries. If the applications exceed the number of students they can serve, charter schools follow a lottery process to fill available spots. Another critique to charter schools is the lottery system they follow. Zernike (2016) questioned the fidelity of the lottery system because the good students are the ones who are usually selected from the pool, whereas the problematic students are left out. Weiler and Vogel (2015) perceived the lottery system as a barrier for the families who are unable to enroll the students in charters when the opening occurs in the middle of the school year.

Though not yet discussed, several researchers (e. g., Barden & Lassmann, 2016; Escalante & Slate, 2017b; Moreno & Slate, 2016) have established that charter schools have a higher percentage of beginning teachers than traditional public schools. In a statewide analysis of Texas elementary schools, Escalante and Slate (2017b) examined the extent to which differences were present in the characteristics of teachers who were employed at charter elementary schools and at traditional public elementary schools. They documented that charter schools had higher percentages of beginning teachers and teachers with no degree than traditional public schools. Moreno and Slate (2016) analyzed school characteristics that differentiated charter schools from traditional public schools in Texas at the elementary, middle, and high school levels. Moreno and

Slate determined the percentage of beginning teachers was the characteristic that most strongly differentiated these two types of schools. These two characteristics, a lack of experience and a lack of a teaching credential, are important factors because both are related to student learning, or lack thereof. Inexperienced teachers have a negative effect on student academic achievement (Darling-Hammond, 2010).

Despite the extensive research documentation stating quality teachers are important for students to learn, particularly for Black, Hispanic, and students in poverty, charter schools have statistically significantly higher percentages of inexperienced and noncredentialed teachers. Taylor and Perez (2012) contended that charter schools could not recruit nor could they retain experienced teachers due to their low salaries. Charter schools pay lower salaries than traditional public schools.

Reading Skills

In Texas, student reading performance is assessed using the State of Texas Assessment of Academic Readiness (STAAR) test. Several different outcomes are provided by the STAAR Reading test (Texas Education Agency Student Assessment Division, 2011, pp. 2-6).. In Reporting Category 1, students are expected to demonstrate the ability to understand a variety of texts across genres (i.e., fiction, literary nonfiction, poetry, drama, expository, and persuasive), by understanding and using new vocabulary reading and writing. In Reporting Category 2, students are expected to analyze literary texts (i.e., poetry, fiction, literary nonfiction, and media literacy) by using comprehension skills. In Reporting Category 3, students are expected to analyze informational texts (i.e., expository and procedural) by making inferences and drawing conclusions (Texas Education Agency Student Assessment Division, 2011, pp. 2-6).

In addition to these three Reading Reporting categories, student academic performance is classified in three levels (Texas Education Agency, 2016b, Chapter 4, p. 26). Level I students are unlikely to succeed in the next level without significant academic intervention. Students who received a Level II academic performance are on track and likely to succeed in the next grade, with possible need of support. Level I is regarded as Unsatisfactory performance, Level II is considered as Satisfactory performance, and Level III is regarded as Advanced performance. Students who performed at Level III have demonstrated higher-order thinking skills and are expected to succeed in the next level (Texas Education Agency, 2016b, Chapter 4, p. 26).

At the time of its implementation in 2012, STAAR performance measures were phased in to provide school districts enough time to prepare their teachers with professional development and to adjust instruction. A 4-year, two-step phase-in for Level II was initially scheduled, but this plan was changed to a three-step phase-in process (Texas Education Agency Student Assessment Division, 2015, pp. 1-7). Phase-in 1 was in effect for the 2011-2012, 2012-2013, 2013-2014, and 2014-2015 school years. Phase-in 2 standards are in effect from the 2015-2016 to the 2017-2018 school years and Phase-in 3 will be in effect from the 2018-2019 until the 2020-2021 school years. The final recommended Level II standards will be in effect after the Phase-in 3 standard (Texas Education Agency Student Assessment Division, 2015, pp. 1-7).

Statement of the Problem

Charter schools are increasing at an accelerated rate, approximately 250% within the last 10 years (Texas Education Agency, 2016a). Parents are moving their children from traditional public schools to charter schools, and yet, limited evidence exists regarding their efficacy. The assumption should not be made that just because charter schools are not traditional schools that students who attend them will automatically have higher academic achievement scores. Empirical investigations are clearly needed regarding student performance in charter schools compared to student performance in traditional public schools.

Educational advocates (e.g., Bill & Melinda Gates Foundation, Eli and Edythe Broad Foundation, the Walton Family Foundation) are promoting a kind of entrepreneurial education that favors charter schools and vouchers. Based on the fundamentals of competition and an open-market, school reformers consider that charter schools can alleviate current educational deficits (Ravitch, 2013). Nevertheless, the academic success of charter schools has not been confirmed and appears to be inconsistent (Blazer, 2010).

Purpose of the Study

The purpose of this study was to determine the extent to which differences were present in the reading achievement of Grade 3 students in Texas as a function of school type (i.e., charter schools and traditional public schools). Four years of statewide data were analyzed to determine whether differences were present in the reading skills of Grade 3 students between charter schools and traditional public schools. Additionally, the extent to which a trend across four school years was present in reading skills between charter schools and traditional public schools was examined.

Significance of the Study

Charter schools are increasing in popularity among students and parents nationwide. In Texas, charter schools have increased approximately 250% within the last 10 years. Some charter school advocates (e.g., The Gates foundation, the Walton Family foundation) consider charter schools as an effective way to alleviate poor student performance whereas other researchers (e.g., Frankenberg & Siegel-Hawley, 2011) have argued that students do not perform academically better in charter schools than in traditional schools.

Despite its popularity, minimal studies have been conducted concerning the efficacy of charter schools in comparison to traditional public schools. Through this study, important information was provided about the academic performance of charter schools and traditional public schools. Furthermore, legislators and policymakers may use the results of this study to understand better how students enrolled in elementary charter schools perform in reading compared to students who are enrolled in elementary traditional schools.

Research Questions

The following overarching research question was addressed in this empirical investigation: What is the difference in the reading performance of Texas Grade 3 students as a function of school type (i.e., charter or traditional)? Specific sub-questions under this overarching research question were: (a) What is the difference on the STAAR Reading Level II Academic Performance

measures (i.e., Phase-in 1, Phase-in 2, and Final Satisfactory) for Grade 3 students as a function of school type?; (b) What is the difference on the STAAR Reading Level III Academic Performance measures for Grade 3 students as a function of school type?; (c) What is the difference on the STAAR Reading Category 1: Understanding Across Genres for Grade 3 students as a function of school type?; (d) What is the difference on the STAAR Reading Category 2: Understanding/Analysis of Literary Texts for Grade 3 students as a function of school type?; (e) What is the difference on the STAAR Reading Category 3: Understanding/Analysis of Informational Texts for Grade 3 students as a function of school type?; (f) What trend is present over time in the STAAR Reading Level II Academic Performance measures for Grade 3 students as a function of school type?; and (g) What trend is present in the STAAR Reading Reporting Categories scores for Grade 3 students as a function of school type? The first five research questions were repeated for the 2012-2013, 2013-2014, 2014-2015, and the 2015-2016 school years, whereas the last two research questions were comparisons across these four school years. As such, a total of 22 research questions were addressed in this empirical investigation.

METHODOLOGY

Research Design

A non-experimental, causal-comparative research design (Creswell, 2014) was used for this study. Archival data were utilized to examine the reading achievement of Grade 3 students who were enrolled in either charter elementary schools or in traditional elementary schools in the 2012-2013, 2013-2014, 2014-2015, and 2015-2016 school years. The independent variable involved in this research article was school type (i.e., charter or traditional public schools), and the dependent variables were the STAAR Reading scores for Grade 3 students in the 2012-2013 through the 2015-2016 school years, and the Phase in performance standards (i.e., Phase-in 1, Phase-in 2, and Phase-in 3). Because already existing data were analyzed in this multiyear, empirical investigation, neither the independent variable of school type nor the dependent variables of the STAAR Reading test measures were manipulated.

Participants and Instrumentation

For the purposes of this study, archival data for the 2012-2013, 2013-2014, 2014-2015, and 2015-2016 school years for Grade 3 students who were enrolled in either charter or in traditional public schools were requested from the Texas Education Agency. A Public Information Request form was submitted to the Texas Education Agency Public Education Information Management System for these data. The reading performance of Grade 3 students during these school years was the specific information that was analyzed in this study. Grade 3 students were specifically selected for this investigation because the third grade is the first year in which the STAAR Reading exam is administered.

Results

Pearson chi-square procedures were utilized to answer the first two questions. This statistical procedure was considered the most appropriate procedure to use because the independent variable of school type consisted of two groups (i.e., charter schools and traditional

public schools) and because the dependent variables of the STAAR Phase-in standards consisted of two categories (i.e., met standard or did not meet standard). As such, chi-squares were the appropriate statistical procedures because both variables were categorical (Slate & Rojas-LeBouef, 2011). Prior to conducting Pearson chi-squares procedures, its underlying assumptions of five persons available per cell and that all data were independent of each other were checked and verified.

For the first research question with regard to the STAAR Reading Level II Academic Performance measures (i.e., Phase-in 1, Phase-in 2, and Final Recommended) for Grade 3 students as a function of school type, only the Phase-in 1 and Final Recommended were in effect from the 2012-2013 to the 2014-2015 school years. The Phase-in 2 and Final Recommended Standards were in effect in only the 2015-2016 school year. As such, only the STAAR Reading Level II measures that were in effect in that particular school year were analyzed and reported herein.

Phase-in 1 Results

For the 2012-2013 school year, the Pearson chi-square procedure yielded a statistically significant difference in the Level II Reading Academic Performance Phase-in 1 standard, $\chi^2(1) = 145.03$, $p < .001$, for Grade 3 students between charter and traditional schools. The effect size, or Cramer's V, for this result was below small, .02 (Cohen, 1988). Grade 3 students who were enrolled in traditional elementary schools had a statistically significantly higher pass rate, 4.5 percentage points higher, than did their Grade 3 peers who were enrolled in charter elementary schools. Table 1 contains the descriptive statistics for this school year.

Table 1

Frequencies and Percentages of Reading Level II Phase-in 1 Standard by School Type for Grade 3 Students From the 2012-2013 Through the 2014-2015 School Year

School Year and School Type	Met Standard *n* and %age of Total	Did Not Meet Standard *n* and %age of Total
2012-2013		
Charter	9,381 (73.2%)	3,431 (26.8%)
Traditional	282,379 (77.7%)	80,879 (22.3%)
2013-2014		
Charter	10,790 (71.3%)	4,347 (28.7%)
Traditional	274,906 (74.7%)	92,961 (25.3%)

2014-2015		
Charter	11,681 (72.0%)	4,537 (28.0%)
Traditional	273,969 (74.5%)	93,954 (25.5%)

Regarding the 2013-2014 school year, a statistically significant difference was present, $\chi^2(1) = 91.18$, $p < .001$, in the Level II Reading Academic Performance by school type for Grade 3 students. The effect size for this finding was below small at .02, Cramer's V (Cohen, 1988). Grade 3 students who were enrolled in traditional elementary schools had 3.4 percentage points higher satisfactory performance on the Phase-in 1 than did Grade 3 students who were enrolled in charter schools. Revealed in Table 1 are the descriptive statistics for the analysis of the Phase-in 1 standard for this school year.

With respect to the 2014-2015 school year, a statistically significant difference was present in the Level II Reading Academic Performance Phase-in 1 standard, $\chi^2(1) = 48.46$, $p < .001$, by school type for Grade 3 students. The effect size for this finding, Cramer's V, was below small, .01 (Cohen, 1988). Grade 3 students who were enrolled in traditional elementary schools had 2.4 percentage points higher pass rate than did Grade 3 students who were enrolled in charter schools. Delineated in Table 1 are the descriptive statistics for the 2014-2015 school year.

Phase-in 2 Results

As discussed previously, the Phase-in 2 standard was in effect for only the 2015-2016 school year. For this school year, the Pearson chi-square procedure yielded a statistically significant difference in the Phase-in 2 standard, $\chi^2(1) = 35.21$, $p < .001$, between charter and traditional schools for Grade 3 students. The effect size, or Cramer's V, for this result was below small, .01 (Cohen, 1988). Grade 3 students who were enrolled in traditional elementary schools had a higher pass rate, 2.0 percentage points higher, than did their Grade 3 peers who were enrolled in charter schools. Frequencies and percentages of Phase-in 2 standard for Grade 3 students by school type in the 2015-2016 school year are presented in Table 2.

Table 2

Frequencies and Percentages of Reading Level II Phase-in 2 Standard for Grade 3 Students by School Type in the 2015-2016 School Year

School Type	Met Standard *n* and %age of Total	Did Not Meet Standard *n* and %age of Total
Charter	12,430 (69.9%)	5,355 (30.1%)
Traditional	271,997 (71.9%)	106,102 (28.1%)

Final Recommended Results

With respect to the Final Recommended phase for the 2012-2013 school year, a Pearson chi-square procedure was used and yielded a statistically significant difference, $\chi^2(1) = 102.37$, $p < .001$, Cramer's V = .02, a below small effect size (Cohen, 1988), by school type. Grade 3 students in traditional elementary schools had a statistically significantly higher passing rate, 4.4 percentage points higher, on the Final Recommended standard than did their Grade 3 peers who were enrolled in charter elementary schools. Table 3 contains the descriptive statistics for this school year.

Table 3

Frequencies and Percentages of Reading Level II Final Recommended Standard by School Type for Grade 3 Students From the 2012-2013 Through the 2015-2016 School Year

School Year and School Type	Met Standard *n* and %age of Total	Did Not Meet Standard *n* and %age of Total
2012-2013		
Charter	4,391 (34.3%)	8,421 (65.7%)
Traditional	140,578 (38.7%)	222,680 (61.3%)
2013-2014		
Charter	5,578 (36.9%)	9,559 (63.1%)
Traditional	149,505 (40.6%)	218,362 (59.4%)

2014-2015		
Charter	5,647 (34.8%)	10,571 (65.2%)
Traditional	139,744 (38.0%)	228,179 (62.0%)
2015-2016		
Charter	6,986 (39.3%)	10,799 (60.7%)
Traditional	156,428 (41.4%)	221,671 (58.6%)

In the 2013-2014 school year, a statistically significant difference was present in the Final Recommended phase, $\chi^2(1) = 86.71$, $p < .001$, by school type for Grade 3 students. The effect size for this finding, Cramer's V, was below small, .02 (Cohen, 1988). Grade 3 students who were enrolled in traditional schools scored 3.7 percentage points higher than did their Grade 3 peers enrolled in charter elementary schools. Revealed in Table 3 are the descriptive statistics for this analysis.

Regarding the 2014-2015 school year, a statistically significant difference was present in the Final Recommended phase, $\chi^2(1) = 66.04$, $p < .001$, between charter and traditional schools for Grade 3 students. The effect size, or Cramer's V, for this result was below small, .01 (Cohen, 1988). Grade 3 students who were enrolled in traditional elementary schools had a statistically significantly higher pass rate, 3.2 percentage points higher, than did Grade 3 students who were enrolled in charter elementary schools. Delineated in Table 3 are the descriptive statistics for the 2014-2015 school year.

For the 2015-2016 school year, the Pearson chi-square procedure yielded a statistically significant difference in the Final Recommended standard, $\chi^2(1) = 30.67$, $p < .001$, between charter and traditional elementary schools for Grade 3 students. The effect size for this finding, Cramer's V, was below small, .01 (Cohen, 1988). Grade 3 students who were enrolled in traditional elementary schools had a 2.1 percentage point higher pass rate than did Grade 3 students who were enrolled in charter elementary schools. Table 3 contains the descriptive statistics for this school year.

Level III Academic Performance Results

For the second research question regarding the STAAR Reading Level III Academic Performance for Grade 3 students as a function of school type, the Pearson chi-square procedure yielded a statistically significant difference in the 2012-2013 school year, $\chi^2(1) = 45.19$, $p < .001$. The effect size, or Cramer's V, for this result was below small, .01 (Cohen, 1988). Grade 3 students who were enrolled in traditional elementary schools had a 2.4 percentage point higher advanced academic performance than did Grade 3 students who were enrolled in charter elementary schools. Table 4 contains the descriptive statistics for this school year.

Table 4

Frequencies and Percentages of Reading Level III Academic Performance by School Type for Grade 3 Students From the 2012-2013 Through the 2015-2016 School Year

School Year and School Type	Met Standard *n* and %age of Total	Did Not Meet Standard *n* and %age of Total
2012-2013		
Charter	2,145 (16.7%)	10,667 (83.3%)
Traditional	69,434 (19.1%)	293,824 (80.9%)
2013-2014		
Charter	2,094 (13.8%)	13,043 (86.2%)
Traditional	60,333 (16.4%)	307,534 (83.6%)
2014-2015		
Charter	2,931 (18.1%)	13,287 (81.9%)
Traditional	74,943 (20.4%)	292,980 (79.6%)
2015-2016		
Charter	3,847 (21.6%)	13,938 (78.4%)
Traditional	88,738 (23.5%)	289,361 (76.5%)

Regarding the 2013-2014 school year, a statistically significant difference was present in the Reading Level III Academic Performance, $\chi^2(1) = 70.23$, $p < .001$, between charter and traditional elementary schools for Grade 3 students. The effect size for this finding, Cramer's V, was below small, .01 (Cohen, 1988). Grade 3 students who were enrolled in traditional elementary school had a higher advanced academic performance, 2.6 percentage points higher, than did their Grade 3 peers enrolled in charter elementary schools. Revealed in Table 4 are the descriptive statistics for this analysis.

Concerning the 2014-2015 school year, the Pearson chi-square procedure yielded a statistically significant difference in the Level III Academic Performance, $\chi^2(1) = 50.69$, $p < .001$, between charter and traditional schools for Grade 3 students. The effect size, or Cramer's V, for this result was below small, .01 (Cohen, 1988). Grade 3 students who were enrolled in traditional schools scored 2.3 percentage points higher than did Grade 3 students who were enrolled in charter elementary schools. Delineated in Table 4 are the descriptive statistics for the 2014-2015 school year.

With regard to the 2015-2016 school year, a statistically significant difference was present in the Level III Academic Performance, $\chi^2(1) = 32.06$, $p < .001$, by school type for Grade 3 students. The effect size for this finding, Cramer's V, was below small, .01 (Cohen, 1988). Grade 3 students who were enrolled in traditional schools scored 1.9 percentage points higher than did their Grade 3 peers who were enrolled in charter elementary schools. Table 4 contains the descriptive statistics for the Level III Academic Performance analysis for the 2015-2016 school year.

Reading Category Results

For the research questions regarding the three reading reporting categories, Multivariate Analysis of Variance (MANOVA) procedures were utilized. Prior to conducting a MANOVA procedure, the underlying assumptions for the normality of the dependent variables (i.e., the STAAR Reading categories) were checked. The standardized skewness coefficients (i.e., the skewness value divided by its standard error) and the standardized kurtosis coefficients (i.e., the kurtosis value divided by its standard error) were analyzed for normality within +/- 3 (Onwuegbuzie & Daniel, 2002). Additionally, the Box's Test of Equality of Covariance assumption and the Levene's Test of Equality of Error Variances were checked. Even if the assumptions underlying the MANOVA were not met, the robustness of a MANOVA procedure made it appropriate to use on the data in this study (Field, 2009).

Overview of Reading Category Results

For the 2012-2013 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = 1.00$, $p < .001$, partial $\eta^2 = .001$, trivial effect size (Cohen, 1988) as a function of school type in Grade 3 student overall reading performance. Regarding the 2013-2014 school year, the MANOVA yielded a statistically significant difference, Wilks' $\Lambda = 1.00$, $p < .001$, partial $\eta^2 = .000$, trivial effect size (Cohen, 1988) between charter and traditional elementary schools in Grade 3 student overall reading performance. Concerning the 2014-2015 school year, the MANOVA again revealed a statistically significant difference, Wilks' $\Lambda = 1.00$, $p < .001$, partial $\eta^2 = .000$, trivial effect size (Cohen, 1988) between charter and traditional elementary schools in Grade 3 student overall reading performance. With regard to the 2015-2016 school year, the MANOVA yielded a statistically significant difference, Wilks' $\Lambda = 1.00$, $p < .001$, partial $\eta^2 = .000$, trivial effect size (Cohen, 1988) between charter and traditional elementary schools in Grade 3 student overall reading performance. Because a statistically significant difference was revealed in the overall reading achievement of Grade 3 students for each school year, univariate analysis of variance procedures were next calculated for each of the three STAAR Reading Categories for each of the four school years.

Reading Category 1 Results

With respect to the 2012-2013 school year, a univariate follow-up analysis of variance procedure revealed a statistically significant difference on the STAAR Reading Category 1 scores, $F(1, 376068) = 38.41$, $p < .001$, partial $\eta^2 = .000$, trivial effect size. The average score on this Reading Category 1 was 0.09 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Presented in Table 5 are the descriptive statistics for this analysis.

Table 5

Descriptive Statistics for the STAAR Reading Category 1 Scores by School Type for Grade 3 Students From the 2012-2013 Through the 2015-2016 School Year

School Year and School Type	*n*	*M*	*SD*
2012-2013			
Charter	12,812	4.02	1.64
Traditional	363,258	4.11	1.61
2013-2014			
Charter	15,137	4.12	1.62
Traditional	367,867	4.23	1.61
2014-2015			
Charter	16,218	3.90	1.63
Traditional	367,923	3.98	1.60
2015-2016			
Charter	17,785	3.97	1.64
Traditional	378,099	4.06	1.62

Concerning the 2013-2014 school year, a univariate follow-up analysis of variance procedure revealed a statistically significant difference on the STAAR Reading Category 1 scores, $F(1, 383002) = 68.74$, $p < .001$, partial $\eta^2 = .000$, trivial effect size. The average score on this Reading Category 1 was 0.11 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Delineated in Table 5 are the results for this analysis.

Regarding the 2014-2015 school year, a univariate follow-up analysis of variance procedure yielded a statistically significant difference on the STAAR Reading Category 1 results, $F(1, 384139) = 36.30$, $p < .001$, partial $\eta^2 = .000$, trivial effect size. The average score on this Reading Category 1 was 0.08 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Table 5 contains the descriptive statistics for this analysis.

For the 2015-2016 school year, a univariate follow-up analysis of variance procedure revealed a statistically significant difference, $F(1, 395882) = 55.26$, $p < .001$, partial $\eta^2 = .000$, trivial effect size on the STAAR Reading Category 1 results. The average score on this Reading Category 1 was 0.09 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Revealed in Table 5 are the results for this analysis.

Reading Category 2 Results

With respect to the 2012-2013 school year, a univariate follow-up analysis of variance procedure revealed a statistically significant difference on the STAAR Reading Category 2 scores, $F(1, 376068) = 216.11$, $p < .001$, partial $\eta^2 = .001$, trivial effect size. The average score on this Reading Category 2 was 0.05 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Presented in Table 6 are the descriptive statistics for this analysis.

Table 6

Descriptive Statistics for the STAAR Reading Category 2 Scores by School Type for Grade 3 Students From the 2012-2013 Through the 2015-2016 School Year

School Year and School Type	*n*	*M*	*SD*
2012-2013			
Charter	12,812	10.83	3.90
Traditional	363,258	11.33	3.77

2013-2014			
Charter	15,137	11.65	3.84
Traditional	367,867	11.84	3.83
2014-2015			
Charter	16,218	10.82	4.02
Traditional	367,923	11.14	4.04
2015-2016			
Charter	17,785	11.81	4.05
Traditional	378,099	11.91	4.06

Concerning the 2013-2014 school year, a univariate follow-up analysis of variance procedure revealed a statistically significant difference on the STAAR Reading Category 2 scores, $F(1, 383002) = 36.92$, $p < .001$, partial $\eta^2 = .000$, trivial effect size. The average score on this Reading Category 2 was 0.19 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Table 6 contains the descriptive statistics for this analysis.

Regarding the 2014-2015 school year, a univariate follow-up analysis of variance procedure yielded a statistically significant difference on the STAAR Reading Category 2 results, $F(1, 384139) = 95.14$, $p < .001$, partial $\eta^2 = .000$, trivial effect size. The average score on this Reading Category 2 was 0.32 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Revealed in Table 6 are the descriptive statistics for this school year.

For the 2015-2016 school year, a univariate follow-up analysis of variance procedure revealed a statistically significant difference, $F(1, 395882) = 11.51$, $p = .001$, partial $\eta^2 = .000$, trivial effect size on the STAAR Reading Category 2 results. The average score on this Reading Category 2 was 0.10 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Presented in Table 6 are the results for this analysis.

Reading Category 3 Results

With respect to the 2012-2013 school year, a univariate follow-up analysis of variance procedure revealed a statistically significant difference on the STAAR Reading Category 3 scores, $F(1, 376068) = 72.74$, $p < .001$, partial $\eta^2 = .000$, trivial effect size. The average score on this Reading Category 3 was 0.27 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Table 7 contains the descriptive statistics for this analysis.

Table 7

Descriptive Statistics for the STAAR Reading Category 3 Scores by School Type for Grade 3 Students From the 2012-2013 Through the 2015-2016 School Year

School Year and School Type	*n*	*M*	*SD*
2012-2013			
Charter	12,812	10.01	3.50
Traditional	363,258	10.28	3.41
2013-2014			
Charter	15,137	9.44	3.60
Traditional	367,867	9.81	3.53
2014-2015			
Charter	16,218	10.27	3.50
Traditional	367,923	10.43	3.52
2015-2016			
Charter	17,785	9.68	3.86
Traditional	378,099	9.93	3.79

Concerning the 2013-2014 school year, a univariate follow-up analysis of variance procedure revealed a statistically significant difference on the STAAR Reading Category 3 scores, $F(1, 383002) = 160.45$, $p < .001$, partial $\eta^2 = .000$, trivial effect size. The average score on this Reading Category 3 was 0.37 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Delineated in Table 7 are the results for this analysis.

Regarding the 2014-2015 school year, a univariate follow-up analysis of variance procedure yielded a statistically significant difference on the STAAR Reading Category 3 results, $F(1, 384139) = 32.62$, $p < .001$, partial $\eta^2 = .000$, trivial effect size. The average score on this Reading Category 3 was 0.16 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Table 7 contains the descriptive statistics for this school year.

For the 2015-2016 school year, a univariate follow-up analysis of variance procedure revealed a statistically significant difference, $F(1, 395882) = 72.59$, $p < .001$, partial $\eta^2 = .000$, trivial effect size, on the STAAR Reading Category 3 results. The average score on this Reading Category 3 was 0.25 points higher for Grade 3 students who were enrolled in traditional elementary schools than for Grade 3 students who were enrolled in charter schools. Revealed in Table 7 are the results for this analysis.

Reading Performance Trends

With respect to the research question regarding the degree to which trends were present in the STAAR Reading Level II Academic Performance measures for Grade 3 students as a function of school type, examination of the previously discussed results yielded the presence of trends in student performance. Grade 3 students who were enrolled in traditional elementary schools had statistically significantly higher pass rates in all four school years than did students who were enrolled in charter schools. A summary of the analyses of STAAR Reading Level II Academic Performance measures by school type for Grade 3 students from the 2012-2013 through the 2015-2016 school year is presented in Table 8.

Table 8

Summary of Level II Academic Performance Measures (i.e., Phase-In 1, Phase-In 2, and Final Recommended) by School Type for Grade 3 Students From the 2012-2013 Through the 2015-2016 School Year

Performance Measure and School Year	Statistically Significant	Better Performing School
Phase-In 1		
2012-2013	Yes	Traditional
2013-2014	Yes	Traditional

2014-2015	Yes	Traditional
Phase-In 2		
2015-2016	Yes	Traditional
Final Recommended		
2012-2013	Yes	Traditional
2013-2014	Yes	Traditional
2014-2015	Yes	Traditional
2015-2016	Yes	Traditional

Concerning whether trends were present in the STAAR Reading Reporting Categories scores for Grade 3 students as a function of school type, examination of the statistically significant results yielded the presence of trends for all three STAAR Reading Categories. Grade 3 students who were enrolled in traditional elementary schools had higher scores on each Reading Category in all four school years than did Grade 3 students who were enrolled in charter schools. A summary of the analyses of STAAR Reading Reporting Categories by school type for Grade 3 students for the 2012-2013 through the 2015-2016 school year are presented in Table 9.

Table 9

Summary of STAAR Reading Reporting Categories for Grade 3 Students From the 2012-2013 Through the 2015-2016 School Year

Reading Category and School Year	Statistically Significant	Better Performing School
Category 1		
2012-2013	Yes	Traditional
2013-2014	Yes	Traditional
2014-2015	Yes	Traditional

2015-2016	Yes	Traditional
Category 2		
2012-2013	Yes	Traditional
2013-2014	Yes	Traditional
2014-2015	Yes	Traditional
2015-2016	Yes	Traditional
Category 3		
2012-2013	Yes	Traditional
2013-2014	Yes	Traditional
2014-2015	Yes	Traditional
2015-2016	Yes	Traditional

DISCUSSION

In this investigation, the degree to which differences were present in the reading achievement of Texas Grade 3 students by school type (i.e., charter elementary schools and traditional elementary schools) was addressed. Four years of archival data from the Texas Education Agency Public Education Information Management System were obtained and analyzed to determine whether differences were present on the state-mandated Level II Reading Academic Performance measures (i.e., Phase-in 1, Phase-in 2, and Final Recommended), Level III Reading Academic Performance, and STAAR Reading Reporting Categories between charter elementary schools and traditional elementary schools.

Inferential statistical procedures yielded the presence of statistically significant differences in all four school years of data analyzed (i.e., 2012-2013, 2013-2014, 2014-2015, and 2015-2016) for all of the STAAR Reading categories (i.e., Category 1, Category 2, and Category 3). Grade 3 students who were enrolled in traditional elementary schools had statistically significantly higher reading test scores than did their Grade 3 peers who were enrolled in charter elementary schools.

Connections with Existing Literature

Several researchers (Escalante & Slate, 2017; Penning & Slate, 2011) have previously analyzed the differences in the academic performance between charter and traditional schools in Texas. In this 4-year statewide investigation, Grade 3 students who were enrolled in traditional elementary schools had higher passing rates on the STAAR Reading Level II Academic Performance measures (i.e., Phase-in 1, Phase-in 2, and Final Satisfactory) than did Grade 3 students who were enrolled in charter schools. Grade 3 students who were enrolled in traditional elementary schools had higher average reading scores on each STAAR Reading Category (i.e., Category 1, Category 2, and Category 3) than did Grade 3 students who were enrolled in charter schools.

These results were consistent with Escalante and Slate (2017a) wherein Grade 3 students who were enrolled in traditional public schools had statistically significantly higher reading scores than did Grade 3 students who were enrolled in charter schools. Escalante and Slate (2017a) determined that Grade 3 students who were enrolled in traditional elementary schools had 4.5% higher average reading passing rate than did their peers who were enrolled in charter elementary schools. Similarly, Penning and Slate (2011) documented that students who were enrolled in charter schools were not performing better than students who were enrolled in traditional public schools.

Implications for Policy and for Practice

In this investigation, Grade 3 students who were enrolled in traditional elementary schools had higher reading passing rates than did Grade 3 students who were enrolled in charter schools. Charter schools have had an accelerated growth, 250% within the last 10 years (Texas Education Agency, 2016a), and school reformers are advocating for the development of charter schools. Yet, the efficacy of charter schools has not been established.

Several implications for policy and for practice can be made based upon the results of this multiyear, statewide investigation. First, educational leaders need to focus their efforts in conducting more educational research in regard to the efficacy of charter schools. Second, policymakers should analyze the results of this educational research before making decisions regarding academic and financial support to these school systems. Third, the Texas Education Agency should revise the requirements, policies, and procedures followed by charter and traditional public schools based on student academic performance results. Charter schools are exempt from some regulations imposed to traditional public schools. Fourth, to help parents in the decision-making process of deciding where to enroll their children, schools should be required to provide information of the school's academic rating at registration.

Recommendations for Future Research

Based upon the results of this multiyear statewide investigation, several recommendations for future research can be made. Given the higher average reading passing rate of Grade 3 students who were enrolled in traditional elementary schools revealed in this study, researchers are encouraged to extend this study to other content areas (e.g., mathematics, writing, science, social studies). Additionally, further research encompassing other grade levels, from elementary to high

school, is strongly recommended. Furthermore, given the diversity of the student population in charter and elementary schools, researchers are encouraged to investigate differences in the academic performance between these two school systems by subgroups (e.g., Black students, students in poverty, English Language Learners, Hispanic students). Another recommendation is to replicate this study in other states to determine whether differences are present in the academic performance between charter and traditional public schools.

CONCLUSION

The purpose of this investigation was to determine the extent to which differences were present in the reading achievement of Grade 3 students in Texas as a function of school type (i.e., charter schools and traditional public schools). Four school years of archival data from the Texas Education Agency Public Education Information Management System were analyzed. In each of the school years, Grade 3 students who were enrolled in traditional elementary schools had statistically significantly higher reading passing rates and higher reading test scores than did Grade 3 students who were enrolled in charter elementary schools. As such, no evidence was present that students enrolled in charter schools have higher reading achievement than students enrolled in traditional schools.

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PREFERRED CITATION:

Escalante, M. L., Slate, J.R., Moore, G.W., Martinez-Garcia, C. (2018). Differences in reading achievement between charter and traditional elementary schools. *Journal of Ethical Educational Leadership, 5*(2), 1-24. Retrieved from: http://www.cojeel.org.

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