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Predicting Reading Performance by Texas Student Demographics Characteristics: A Statewide Analysis

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ABSTRACT

Analyzed in this research study was the degree to which demographic characteristics (i.e., economic status, ethnicity/race, English Language Learner status) of Grade 3 students in Texas schools was related to their reading achievement as assessed by the State of Texas Assessment of Academic Readiness (STAAR) Reading test. Archival data from the Texas Education Agency, Public Education Information Management System, were analyzed using a causal-comparative research design. Specifically examined was each of the variables listed above for 2015-2016, 2016-2017, 2017-2018, and 2018-2019 school years separately for boys and girls, followed by comparing these variables across the four school years. Statistically significant results were present in all four school years for boys and girls. In three of the four years analyzed regarding boys' performance, being Poor, Black, or Hispanic was indicative of not meeting the Meets Grade Level standard. In three of the four years investigated regarding girls' performance, being White or Asian was indicative of meeting the Meets Grade Level standard. Implications for policy and practice, as well as recommendations for future research, are provided.

Keywords:
Economic Status; Ethnicity; English Learner

ABSTRAK

Analisis dalam penelitian ini adalah sejauh mana karakteristik demografi (yaitu, status ekonomi, etnis/ras, status Pembelajar Bahasa Inggris) siswa kelas 3 di sekolah Texas terkait dengan prestasi membaca mereka yang dinilai oleh tes membaca State of Texas Assessment of Academic Readiness (STAAR). Data arsip dari Sistem Manajemen Informasi Pendidikan Umum Badan Pendidikan Texas dianalisis melalui penggunaan desain penelitian kausal-komparatif. Yang diperiksa secara khusus adalah masing-masing variabel yang tercantum di atas untuk

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tahun ajaran 2015-2016, 2016-2017, 2017-2018, dan 2018-2019 secara terpisah untuk anak laki-laki dan perempuan, diikuti dengan perbandingan variabel-variabel ini di empat tahun ajaran. Hasil statistik yang signifikan hadir di semua empat tahun sekolah untuk anak laki-laki dan perempuan. Dalam tiga dari empat tahun yang dianalisis mengenai kinerja anak laki-laki, Miskin, Ras Hitam, atau Hispanik menunjukkan tidak memenuhi standar Memenuhi Tingkat Kelas. Dalam tiga dari empat tahun yang diselidiki mengenai kinerja anak perempuan, kulit putih atau Asia merupakan indikasi memenuhi standar Memenuhi Tingkat Kelas. Implikasi untuk kebijakan dan praktik, serta rekomendasi untuk penelitian masa depan, disediakan.

Kata Kunci:
Status Ekonomi; Etnis; Pembelajar Bahasa Inggris

1. Introduction

The ability to read and write is critical to be successful, not only in school but in life after school (Korbey, 2019). How students acquire these vital literacy skills varies. Word-reading skills and knowledge-based literacy competencies are some of the complex skill sets required to be literate. Literacy skills are not acquired linearly, but the focus of reading instruction in Kindergarten through Grade 2 centers around word-reading skills. The instruction includes teaching students (a) letter recognition, (b) beginning and ending sounds, (c) sight words, (d) comprehension of words in context, (e) literal inferences, and (f) extrapolation (Reardon, Valentino, & Shores, 2012).

In Grade 3, the transition from "learning to read" moves to "reading to learn" (Hernandez, 2011). Students then increasingly engage in knowledge-based literacy competencies. The instruction includes evaluation, evaluating nonfiction, and evaluating complex syntax Students build background knowledge while developing comprehension skills (Reardon, Valentino, & Shores, 2012). Prior knowledge is critical to identifying clues to make inferences.

Additionally, expert readers build on prior knowledge (Horbec, 2012). Therefore, a lack of background knowledge and learning experiences may be detrimental to reading skills. Some students have opportunities to gain reading skills at home. Access to books, being immersed in literacy experiences, and sharing what they have read is part of a positive home reading environment (Waldfogel, 2012). Unfortunately, not all students are exposed to reading outside of the school day. Lack of exposure can be concerning considering the increase of literacy skills required for many of today's jobs (Reardon, Valentino, & Shores, 2012).

Standardized testing allows assessment of student academic achievement in reading. The Every Student Succeeds Act (2015) contains provisions allowing state lawmakers to determine the assessment tool and standards tested. In Texas, all public school students are assessed annually in reading and mathematics, beginning in Grade 3 (Texas Assessment, 2019). The State of Texas

Assessment of Academic Readiness (STAAR) test results determines school effectiveness. Scores are reported by demographic characteristics of 11 student groups (Texas Education Agency, 2016).

Educators must understand the influence of demographic characteristics on student learning. The demographics of America are changing (Annie E. Casey Foundation, 2010), and educators must adapt to meet the varied needs of their students. Understanding variables that contribute to student reading achievement is necessary to remediate current gaps and mitigate future gaps. Research studies conducted at the national level will be discussed, followed by empirical investigations conducted in the state of interest for this article, Texas.

To provide data to document achievement gaps between different student demographic categories, the U.S. National Assessment of Educational Progress is administered to fourth and eighth-grade students (David & Marchant, 2015). As assessed by the National Assessment of Educational Progress, the gap between students not living in poverty and students living in poverty increased from 2002-2009 from 23 points to 24 points for fourth-grade reading (Nichols, Glass, & Berliner, 2012). From 2003-2013, the score gap between students in poverty and students not in poverty remained steady at approximately 25 points for fourth-grade reading (David & Marchant, 2015).

Gender gaps have also been revealed in the results of the National Assessment of Educational Progress. In an analysis of 1988-2015, girls performed at a statistically significant higher rate than boys in reading (Reilly, Neumann, & Andrews, 2019). In a related study, Robinson and Lubienski (2011) revealed that students achieving below the fifth percentile were comprised of almost three-fourths boys in addition to a gap between boys and girls. The National Assessment of Educational Progress results were consistent with this finding (The Nation's Report Card, 2019), as more boys than girls perform below the minimum proficiency level (Reilly, Neumann, & Andrews, 2019). Nationally, not only are boys achieving at a lower rate than girls, they are underperforming more often as well.

The influence of ethnicity/race on student academic achievement is apparent in analyzing National Assessment of Educational Progress results. Though the scores of Hispanic students have increased from 2003-2013, they still achieve at a rate behind White students. Black students achieve at a lesser rate than Hispanic and White students, and the gap has persisted over time (David & Marchant, 2015). These results were consistent with National Assessment of Educational Progress data from 2002-2009 as Black students averaged over 200 points, Hispanic students earned approximately 205 points, and White students averaged 227 points (Nichols, Glass, & Berliner, 2012).

Furthermore, the discrepancy in achievement between English Language Learners and students not categorized as English Language Learners is visible in National Assessment of Educational Progress scores. Between 2003 and 2011, a gap in performance on the reading portion of the assessment was present. The scores earned by English Language Learners remained stagnant

over the period, whereas the scores of students who were not English Language Learners slightly increased, indicating the gap is growing (Polat, Zarecky-Hodge, & Schreiber, 2016).

In addition to studies regarding student reading achievement at the national level, several researchers in Texas (e.g., Hamilton & Slate, 2019; Harris, 2018; McGown, 2016; Pariseau, 2019; Schleeter, 2017) have conducted studies concerning student economic status, gender, ethnicity/race, and English Language Learner status. Researching at the state level is essential so that educators may understand how their students may compare to students nationwide. This information also analyzes trends in reading performance by various student groups as populations change over time.

Texas students who are economically disadvantaged have steadily increased from the 2015-2016 school year to the 2018-2019 school year and is now over 60% of all students (Texas Education Agency, 2019b). The high percentage of students who are in poverty is particularly problematic because poverty is adversely related to student academic performance. Texas students from poverty backgrounds achieved a lower rate than Texas students who were not from poverty backgrounds by every measure (Hamilton & Slate, 2019; Harris, 2018; McGown, 2016; Pariseau, 2019; Schleeter, 2017).

The number of students attending Texas public schools has increased each year from 2015-2016 to 2018-2019, and the percentage of boys has remained higher than the percentage of girls for the same period (Texas Education Agency, 2019b). The State of Texas requires Texas Assessments of Academic Readiness (STAAR) test results to be reported in multiple ways, but disaggregating results by gender is not one of those ways. The lack of reporting concerns because boys repeatedly achieve at a lesser rate than girls (Harris, 2018; McGown, 2016; Schleeter, 2017).

As student enrollment in Texas schools increases, the ethnic/racial diversity has also increased each year from 2015-2016 to 2018-2019 (Texas Education Agency, 2019b). Meanwhile, the population of White students has decreased during the same period (Texas Education Agency, 2019b). This increased diversity matters because students' academic achievement in color is statistically significantly lower than their White and Asian peers (Harris, 2018; McGown, 2016; Pariseau, 2019; Schleeter, 2017). Hispanic students make up the most significant percentage of Texas public school students, nearly double the population of the next-largest group (Texas Education Agency, 2019b), magnifying the low performance achieved by this student group.

Another student demographic group with yearly population increases between 2015-2016 and 2018-2019 are students classified as English Language Learners (Texas Education Agency, 2019b). English Language Learners achieve lower scores than their English-speaking peers (Pariseau, 2019). When data are analyzed from the precursor to the STAAR assessment, the Texas Assessment of Knowledge and Skills test, English Language Learners achieved statistically significantly lower rates than their Hispanic and White peers (Rojas-LeBouef, 2010).

1.1. Statement of the Problem

The State of Texas requires all public school students to be assessed annually in reading and mathematics, beginning in Grade 3 (Texas Assessment, 2019). From the 2015-2016 school year through the 2018-2019 school year, an average of 43.5% of Grade 3 students in the State of Texas achieved at the Meets Grade Level standard (Texas Education Agency, 2019c). Achievement at the Meets Grade Level standard indicates that a student may need short-term academic intervention in the following school year (Texas Education Agency, 2017), indicating that almost 60% of Grade 3 students over this period required additional support to be successful in the following school year.

1.2. Purpose of the Study

The purpose of this study was to examine the degree to which demographic characteristics (i.e., economic status, ethnicity/race, English Language Learner status) of Grade 3 students in Texas schools are related to their reading achievement. Specifically examined was each of the variables listed above for each of the four school years separately for boys and girls, followed by comparing these variables across the four school years. Reading achievement was determined by the percent of students achieving at the Meets Grade Level Phase-in standard.

1.3. Significance of the Study

Published empirical studies regarding the combination of demographic characteristics and reading achievement are limited. To date, no published studies were located in which researchers had examined the relationship between demographic characteristics (i.e., economic status, ethnicity/race) and reading achievement as measured by the Texas state-mandated reading assessment. In analyzing the reading performance of Grade 3 Texas students by their demographic characteristics, stakeholders can be proactive rather than reactive in providing interventions to student groups.

1.4. Research Questions

The research questions addressed in this investigation were: (a) Which student demographic characteristics (i.e., economic status, ethnicity/race, English Language Learner status) predict the likelihood of academic achievement at the Meets Grade Level standard as assessed by the Grade 3 STAAR Reading assessment?; Of these demographic characteristics, which ones are the better predictors?; Which ones are the poorest predictors?; and (b) To what extent a trend is present in the predictors for 2015-2016 through the 2018-2019 school years? The first research question was repeated separately for boys and girls and separately for the 2015-2016, 2016-2017, 2017-2018, and 2018-2019 school years, whereas the trend question involved all four school years. Thus, ten research questions were present in this investigation.

2. Methods

2.1. Research Design

The research design for this empirical investigation was a non-experimental, causal-comparative design (Creswell & Creswell, 2018; Johnson & Christensen, 2017). The independent variable in this study was reading academic achievement as assessed by the Grade 3 STAAR Reading test. The dependent variables were student demographic characteristics (i.e., economic status, ethnicity/race, English Language Learner Status) from the 2015-2016, 2016-2017, 2017-2018, and 2018-2019 Grade 3 STAAR Reading assessments.

2.2. Participants and Instrumentation

Archival data were obtained from the Texas Education Agency Public Education Information Management System for 2015-2016 through the 2018-2019 school years for all Grade 3 students who took the STAAR Reading assessment and their student demographic characteristics. A Public Information Request was submitted to the Texas Education Agency for an Advanced Statistics course to obtain the data.

The STAAR assessment is administered to public school students in Grades 3-12. The STAAR is the curriculum-based, state-mandated assessment in Texas and is designed to measure students' learning in each grade. Students are assessed in reading and mathematics each year and additional content-area tests depending on the grade level (Texas Assessment, 2019).

The STAAR Grade Level-In standards attempt to predict the level of success attainable and the amount of academic intervention potentially required in the following school year (Texas Education Agency, 2017). Meets Grade level on the STAAR indicates the students will most likely be successful in the following school year but may need short-term academic intervention. In this category, students demonstrate the ability to apply the knowledge and skills assessed in familiar contexts, and a general ability to think critically is evident (Texas Education Agency, 2017).

For this article, economic status included the categories of Poor and Not Poor. Students who were not eligible for free or reduced lunch were referred to as Not Poor. Students who were eligible for the reduced lunch program, indicating a family income of 131% to 185% of the federal poverty line, as well as students who were eligible for the free lunch program, which indicates a family income of 130% or less of the federal poverty line (Burney & Beilke, 2008), were referred to as Poor. Due to the small percentages of students qualifying for the reduced lunch program, all students who qualified for either the free or the reduced lunch programs were considered Poor. An English Language Learner has a language other than English as their primary language and is acquiring English (Texas Education Code, 2018).

3. Results and Discussion

Before conducting discriminant analysis procedures for these research questions, its underlying assumptions were checked. Though most of the data were not normally distributed, the majority of the underlying assumptions were met. To determine which student demographic characteristics (i.e., economic status, ethnicity/race, English Language Learner status) predicted academic achievement on the Grade 3 STAAR Reading Meets Grade Level standard, stepwise canonical discriminant analyses were conducted for 2015-2016, 2016-2017, 2017-2018, and 2018-2019 school years, separately for boys and girls. Finally, the degree to which trends were present across the four school years was determined. Statistical analyses will be described by school year in chronological order by year and then across all four school years.

3.1. Results for Boys

Regarding the 2015-2016 school year, the stepwise discriminant analysis involved the performance of Grade 3 Texas boys on the STAAR Reading Meets Grade Level standard (i.e., Met or Not Met) as the grouping variable and the demographic variables (i.e., economic status, ethnicity/race, English Language Learner status) as the discriminating variables. The function that resulted from the stepwise discriminant analysis was statistically significant, $\chi^2(5) = 17389.61$, $p < .001$, and accounted for 16.08% of the variance between the two groups (canonical $R = 0.40$; Wilks' $\Lambda = 0.84$). This discriminant function included five demographic variables: economic status (Standardized Coefficient = 0.73); ethnic/racial group Black (Standardized Coefficient = 0.52); ethnic/racial group Hispanic (Standardized Coefficient = 0.60); ethnic/racial group White (Standardized Coefficient = .33); and English Language Learner (Standardized Coefficient = 0.09). An examination of the standardized coefficients revealed that using a cutoff coefficient of .3 (Lambert & Durand, 1975), economic status and ethnic/racial group Hispanic, Black, and White variables contributed to the canonical function.

Group centroids were -0.50 for boys who met the Meets Grade Level standard and 0.38 for boys who did not meet the Meets Grade Level standard. Positive standardized coefficients, present for economic status, ethnic/racial group Hispanic, ethnic/racial group Black, and English Language Learner, were reflective that being poor, being Hispanic, being Black, or being an English Language Learner was predictive of not meeting the Meets Grade Level standard. Readers are directed to Table 1 for the descriptive statistics for these analyses.

Concerning the 2016-2017 school year, the stepwise discriminant analysis involved the performance of Grade 3 Texas boys on the STAAR Reading Meets Grade Level standard (i.e., Met or Not Met) as the grouping variable and the demographic variables as the discriminating variables. The function that resulted from the stepwise discriminant analysis was statistically significant, $\chi^2(5) = 15987.20$, $p < .001$, and accounted for 15.21% of the variance between the two groups (canonical $R = 0.39$; Wilks' $\Lambda = 0.85$). This discriminant function included five demographic variables: economic status (Standardized Coefficient = 0.76); ethnic/racial group Black (Standardized

Coefficient = 0.32); ethnic/racial group Hispanic (Standardized Coefficient = 0.21); ethnic/racial group Asian (Standardized Coefficient = 0.16); and English Language Learner (Standardized Coefficient = 0.04). An examination of the standardized coefficients revealed that using a cutoff coefficient of .3 (Lambert & Durand, 1975), only two variables, economic status and ethnic/racial group Black, contributed to the canonical function.

Table 1. Descriptive Statistics for Grade 3 STAAR Reading Meets Grade Level Performance by the Demographic Characteristics of Boys for the 2015-2016 School Year

Demographic Characteristic	Met the Grade Level Standard	Did Not Meet the Grade Level Standard
Poor	26.5%	73.5%
Black	22.9%	77.1%
Hispanic	31.8%	68.2%
White	62.5%	37.5%
English Language Learner	27.5%	72.5%
Asian	76.0%	24.0%

Group centroids were -0.48 for boys who met the Meets Grade Level standard and 0.38 for boys who did not meet the Meets Grade Level standard. Positive standardized coefficients, present for economic status, ethnic/racial group Hispanic, ethnic/racial group Black, and English Language Learner, were reflective that being poor, being Hispanic, being Black, or being an English Language Learner was predictive of not meeting the Meets Grade Level standard. Readers are directed to Table 2 for the descriptive statistics for these analyses.

Table 2. Descriptive Statistics for Grade 3 STAAR Reading Meets Grade Level Performance by the Demographic Characteristics of Boys for the 2016-2017 School Year

Demographic Characteristic	Met the Grade Level Standard	Did Not Meet the Grade Level Standard
Poor	27.9%	72.1%
Black	23.4%	76.6%
Hispanic	33.6%	66.4%
English Language Learner	29.2%	70.8%
White	61.2%	38.8%
Asian	79.6%	20.4%

Concerning the 2017-2018 school year, the stepwise discriminant analysis involved the performance of Grade 3 Texas boys on the STAAR Reading Meets Grade Level standard as the grouping variable and the demographic variables (i.e., economic status, ethnicity/race) as the discriminating variables. The variable of English Language Learner was not present in this year's dataset. The function that resulted from the stepwise discriminant analysis was statistically significant, $\chi^2(4) = 13421.08$, $p < .001$, and accounted for 16% of the variance between the two groups (canonical $R = .40$; Wilks' $\Lambda = .84$). This discriminant function included four demographic variables: economic status (Standardized Coefficient = .72); ethnic/racial group Hispanic (Standardized Coefficient = .61); ethnic/racial group Black (Standardized Coefficient = .53); and ethnic/racial group White (Standardized Coefficient = .31). An examination of the standardized coefficients revealed that using a cutoff coefficient of .3 (Lambert & Durand, 1975), all of the variables contributed to the canonical function.

Group centroids were -0.46 for boys who met the Meets Grade Level standard and 0.42 for boys who did not meet the Meets Grade Level standard. Positive standardized coefficients, present for economic status, ethnic/racial group Hispanic, and ethnic/racial group Black, were reflective that being poor, being Hispanic, or being Black was predictive of not meeting the Meets Grade Level standard. Table 3 contains the descriptive statistics for these analyses.

Concerning the 2018-2019 school year, the stepwise discriminant analysis involved the performance of Grade 3 Texas boys on the STAAR Reading Meets Grade Level standard as the grouping variable and the demographic variables as the discriminating variables. The function that resulted from the stepwise discriminant analysis was statistically significant, $\chi^2(5) = 12379.99$, $p < .001$, and accounted for 15.60% of the variance between the two groups (canonical $R = .40$; Wilks' $\Lambda = .84$). This discriminant function included four demographic variables: economic status (Standardized Coefficient = .77); ethnic/racial group White (Standardized Coefficient = .44); ethnic/racial group Asian (Standardized Coefficient = .36); and ethnic/racial group Hispanic (Standardized Coefficient = .24). An examination of the standardized coefficients revealed that using a cutoff coefficient of .3 (Lambert & Durand, 1975), economic status and ethnic/racial group variables White and Asian made an important contribution to the canonical function.

Group centroids were 0.43 for boys who met the Meets Grade Level standard and -0.43 for boys who did not meet the Meets Grade Level standard. Positive standardized coefficients were present for ethnic/racial group White and ethnic/racial group Asian meant that these two groups of boys were more likely to have met the Meets Grade Level standard than were their counterparts. Readers are directed to Table 4 for the descriptive statistics for these analyses.

3.2. Results for Girls

Regarding the 2015-2016 school year, the stepwise discriminant analysis involved the performance of Grade 3 Texas girls on the STAAR Reading Meets Grade Level standard (i.e., Met or Not Met) as the grouping variable and the demographic variables (i.e., economic status,

ethnicity/race, English Language Learner status) as the discriminating variables. The function that resulted from the stepwise discriminant analysis was statistically significant, $\chi^2(5) = 17080.69$, $p < .001$, and accounted for 16.08% of the variance between the two groups (canonical $R = .40$; Wilks' $\Lambda = .84$). This discriminant function included five demographic variables: economic status (Standardized Coefficient = .78); ethnic/racial group White (Standardized Coefficient = .40); ethnic/racial group Asian (Standardized Coefficient = .28); ethnic/racial group Hispanic (Standardized Coefficient = .21); and English Language Learner (Standardized Coefficient = .06). An examination of the standardized coefficients revealed that using a cutoff coefficient of .3 (Lambert & Durand, 1975), only two variables, economic status and ethnic/racial group White, contributed to the canonical function.

Group centroids were 0.45 for girls who met the Meets Grade Level standard and -0.42 for girls who did not meet the Meets Grade Level standard. Positive standardized coefficients, present for ethnic/racial group White and ethnic/racial group Asian, meant that these two groups of girls were more likely to have met the Meets Grade Level standard than were their counterparts. Readers are directed to Table 5 for the descriptive statistics for these analyses.

Table 3. Descriptive Statistics for Grade 3 STAAR Reading Meets Grade Level Performance by the Demographic Characteristics of Boys for the 2017-2018 School Year

Demographic Characteristic	Met the Grade Level Standard	Did Not Meet the Grade Level Standard
Poor	29.5%	70.5%
Black	24.3%	75.7%
Hispanic	34.8%	65.2%
White	64.8%	35.2%
Asian	79.6%	20.4%

Concerning the 2016-2017 school year, the stepwise discriminant analysis involved the performance of Grade 3 Texas girls on the STAAR Reading Meets Grade Level standard as the grouping variable and the demographic variables as the discriminating variables. The function that resulted from the stepwise discriminant analysis was statistically significant, $\chi^2(4) = 15189.66$, $p < .001$, and accounted for 15.13% of the variance between the two groups (canonical $R = .39$; Wilks' $\Lambda = .85$). This discriminant function included five demographic variables: economic status (Standardized Coefficient = .81); ethnic/racial group Asian (Standardized Coefficient = .21); ethnic/racial group White (Standardized Coefficient = .18); and ethnic/racial group Black (Standardized Coefficient = .13). An examination of the standardized coefficients revealed that using a cutoff coefficient of .3 (Lambert & Durand, 1975), only an economic status contributed to the canonical function.

Table 4. Descriptive Statistics for Grade 3 STAAR Reading Meets Grade Level Performance by the Demographic Characteristics of Boys for the 2018-2019 School Year

Demographic Characteristic	Met the Grade Level Standard	Did Not Meet the Grade Level Standard
Poor	30.2%	69.8%
Black	23.5%	74.7%
Hispanic	25.3%	74.7%
English Language Learner	32.7%	67.3%
White	64.2%	35.8%
Asian	81.5%	18.5%

Table 5. Descriptive Statistics for Grade 3 STAAR Reading Meets Grade Level Performance by the Demographic Characteristics of Girls for the 2015-2016 School Year

Demographic Characteristic	Met the Grade Level Standard	Did Not Meet the Grade Level Standard
Poor	35.9%	73.8%
White	66.8%	19.5%
Asian	81.3%	18.7%
Hispanic	44.3%	63.0%
English Language Learner	32.2%	67.8%
Black	30.2%	69.8%

Group centroids were -0.41for girls who met the Meets Grade Level standard and 0.44 for girls who did not meet the Meets Grade Level standard. Positive standardized coefficients, present for economic status, ethnic/racial group Hispanic, ethnic/racial group Black, and English Language Learner, were reflective that being poor, being Hispanic, being Black, or being an English Language Learner was predictive of not meeting the Meets Grade Level standard. Readers are directed to Table 6 for the descriptive statistics for these analyses.

Concerning the 2017-2018 school year, the stepwise discriminant analysis involved the performance of Grade 3 Texas girls on the STAAR Reading Meets Grade Level standard as the grouping variable and the demographic variables (i.e., economic status, ethnicity/race) as the discriminating variables. The variable of English Language Learner was not present in this year's

dataset. The function that resulted from the stepwise discriminant analysis was statistically significant, $\chi^2(4) = 13641.57$, $p < .001$, and accounted for 16% of the variance between the two groups (canonical $R = .40$; Wilks' $\Lambda = .84$). This discriminant function included four demographic variables: economic status (Standardized Coefficient = .74); ethnic/racial group White (Standardized Coefficient = .45); ethnic/racial group Asian (Standardized Coefficient = .30); and ethnic/racial group Hispanic (Standardized Coefficient = .17). An examination of the standardized coefficients revealed that using a cutoff coefficient of .3 (Lambert & Durand, 1975), only three variables, economic status, ethnic/racial group White, and ethnic/racial group Hispanic, made an important contribution the canonical function.

Table 6. Descriptive Statistics for Grade 3 STAAR Reading Meets Grade Level Performance by the Demographic Characteristics of Girls for the 2016-2017 School Year

Demographic Characteristic	Met the Grade Level Standard	Did Not Meet the Grade Level Standard
Poor	34.5%	65.5%
Asian	85.2%	14.8%
White	67.8%	32.2%
Black	32.4%	67.6%
Hispanic	40.7%	59.3%
English Language Learner	35.6%	64.4%

Group centroids were 0.42 for girls who met the Meets Grade Level standard and -0.46 for girls who did not meet the Meets Grade Level standard. Positive standardized coefficients, present for ethnic/racial group White and ethnic/racial group Asian, meant that these two groups of girls were more likely to have met the Meets Grade Level standard than were their counterparts. Readers are directed to Table 7 for the descriptive statistics for these analyses.

Concerning the 2018-2019 school year, the stepwise discriminant analysis involved the performance of Grade 3 Texas girls on the STAAR Reading Meets Grade Level standard as the grouping variable and the demographic variables as the discriminating variables. The function that resulted from the stepwise discriminant analysis was statistically significant, $\chi^2(5) = 11804.33$, $p < .001$, and accounted for 14.75% of the variance between the two groups (canonical $R = .38$; Wilks' $\Lambda = .85$). This discriminant function included five demographic variables: economic status (Standardized Coefficient = .81); ethnic/racial group White (Standardized Coefficient = .45); ethnic/racial group Asian (Standardized Coefficient = .31); ethnic/racial group Hispanic (Standardized Coefficient = .15); and English Language Learner (Standardized Coefficient = .03). An examination of the standardized coefficients revealed that using a cutoff coefficient of .3 (Lambert & Durand, 1975), only three variables, economic status, ethnic/racial group White, and ethnic/racial group Hispanic, made an important contribution the canonical function.

Table 7. Descriptive Statistics for Grade 3 STAAR Reading Meets Grade Level Performance by the Demographic Characteristics of Girls for the 2017-2018 School Year

Demographic Characteristic	Met the Grade Level Standard	Did Not Meet the Grade Level Standard
Poor	34.0%	66.0%
White	69.7%	30.3%
Asian	83.5%	16.5%
Hispanic	39.8%	60.2%
Black	31.6%	68.4%

Group centroids were 0.38 for girls who met the Meets Grade Level standard and -0.46 for girls who did not meet the Meets Grade Level standard. Positive standardized coefficients were present for ethnic/racial group White and ethnic/racial group Asian meant that these two groups of girls were more likely to have met the Meets Grade Level standard than were their counterparts. Readers are directed to Table 8 for the descriptive statistics for these analyses.

Table 8. Descriptive Statistics for Grade 3 STAAR Reading Meets Grade Level Performance by the Demographic Characteristics of Girls for the 2018-2019 School Year

Demographic Characteristic	Met the Grade Level Standard	Did Not Meet the Grade Level Standard
Poor	36.1%	63.9%
White	69.0%	31.0%
Asian	86.4%	13.6%
Hispanic	57.0%	43.0%
English Language Learner	38.8%	61.2%
Black	34.6%	65.4%

3.3. Results for the Student Demographic Characteristics Analyses Over Time for Boys

Following the stepwise discriminant analyses involving the performance of Grade 3 Texas boys on the STAAR Reading Meets Grade Level standard, results were reviewed to determine the presence of trends across the four school years. Regarding boys, results were consistent for three out of the four school years in that being Poor, Hispanic, or Black was indicative of not meeting the Meets Grade Level standard. Being Poor was the most important predictor, more predictive than was being a student of color. Being an English Language Learner was indicative of not meeting the

Meets Grade Level standard in two of the three years data were available. In all school years analyzed, less than 35% of boys who were Poor, Hispanic, Black, or categorized as English Language Learner failed to meet the Meets Grade Level standard.

3.4. Results for the Student Demographic Characteristics Analyses Over Time for Girls

Following the stepwise discriminant analyses involving the performance of Grade 3 Texas girls on the STAAR Reading Meets Grade Level standard, results were reviewed to determine the presence of trends across the four school years. Regarding girls, results were consistent for three out of the four school years in that being White or Asian was indicative of meeting the Meets Grade Level standard. In all school years analyzed, more than 66% of girls who were White or Asian met the Meets Grade Level standard.

3.5. Discussion

Analyzed in this investigation was the degree to which demographic characteristics (i.e., economic status, ethnicity/race, English Language Learner status) of Grade 3 students in Texas schools were related to their reading achievement. Specifically examined was each of the variables listed above for each of the four school years separately for boys and girls, followed by comparing these variables across the four school years. Statistically significant results were present in all four school years for boys and girls. In three of the four years analyzed regarding boys' performance, being Poor, Black, or Hispanic was indicative of not meeting the Meets Grade Level standard. In three of the four years investigated regarding girls' performance, being White or Asian was indicative of meeting the Meets Grade Level standard. For boys, poverty was the single most important variable related to not meeting the Meets Grade Level standard. The second most important factor was whether or not they were Black. Concerning girls, not being White or Asian was predictive of not meeting the Meets Grade Level standard.

3.6. Connections to Existing Literature

As revealed in this study, boys from poverty backgrounds, Black boys, Hispanic boys, and English Language Learner boys were less likely to meet the Meets Grade Level standard on the Grade 3 STAAR Reading assessment. In addition, White or Asian girls were more likely to meet this standard than were their counterparts. Nationally (David & Marchant, 2015; Nichols, Glass, & Berliner, 2012) and in Texas (Hamilton & Slate, 2019; Harris, 2018; McGown, 2016; Pariseau, 2019; Schleeter, 2017), Grade 3 and Grade 4 students from poverty backgrounds consistently achieve at lower rates than their Not Poor peers, congruent with the findings of this study. Grade 3 and Grade 4 Asian students outperformed students from all other ethnic/racial backgrounds, followed by White students, Hispanic students, and Black students. The results of this article are pretty consistent with the findings across America (David & Marchant, 2015; Nichols, Glass, & Berliner, 2012) and in Texas (Harris, 2018; McGown, 2016; Pariseau, 2019; Schleeter, 2017). Students who are English Language Learners achieve at lesser rates than their English-speaking

peers nationally (Polat, Zarecky-Hodge, & Schreiber, 2016) and in Texas (Pariseau, 2019; Rojas-LeBouef, 2010), findings with which the results of this investigation are commensurate.

3.7. Implications for Policy and Practice

Based on the results of this research study of four years of statewide data, several implications for policy and practice can be suggested. Concerning policy implications, politicians and educational decision-makers should review options to mitigate the effects of poverty. Texas students living in poverty are just over 60% of all students and have increased by over 22% in the last ten years (Texas Education Agency, 2019b). Current policies in place are not eliminating poverty. Therefore new ideas should be considered.

Concerning practice implications, educational leaders should prioritize inclusive hiring practices. Though more Black and Hispanic teachers have entered the workforce in the last ten years, Black, Hispanic, and Asian teachers comprise approximately one-third of total teachers, whereas students from the same ethnic/racial background make up more than two-thirds of Texas students (Campbell, 2017).

Another educational strategy leaders can implement training teachers to use culturally responsive teaching in their classroom. When the ethnic/racial background of the teacher does not match the ethnic/racial background of the students, cultural differences can result in instruction that is irrelevant and ineffective. A lack of culturally responsive training in teacher preparation programs (Muniz, 2019) indicates a need for school districts to develop and administer their training.

Lastly, educators must be trained in best practices when instructing students from poverty backgrounds. Until poverty, or its effects, are eliminated, teachers must have the skills to understand how poverty can influence student health, behavior, and academic achievement. As long as educators are tasked with overcoming these tremendous odds, there is no other option.

3.8. Recommendations for Future Research

Given the results of this multi-year, statewide investigation, several recommendations for future research can be made. This research study was conducted on data for Grade 3 students in Texas. Therefore, the degree to which findings obtained herein could be generalizable to other grade levels or states is unknown. Researchers should analyze the reading performance of students in other grade levels. Researchers should also examine students' reading achievement in other states to determine if similar results exist across America. To analyze trends over several years, researchers are encouraged to conduct longitudinal studies. Determining if similar results are present across multiple years would provide precious information to policymakers and practitioners. Finally, because only reading academic achievement determined by the STAAR assessment was analyzed in this study, researchers are encouraged to conduct future studies to determine if similar trends are present in other subjects. Results of this investigation should be informative to future researchers as they generate potential topics from our findings.

4. Conclusions

In this multi-year analysis, the degree to which demographic characteristics (i.e., economic status, ethnicity/race, English Language Learner status) of Grade 3 students in Texas schools is related to their reading achievement was investigated. Specifically examined was each of the variables listed above for 2015-2016 through the 2018-2019 school years separately for boys and girls, followed by comparing these variables across the four school years. Statistically significant results were present in all four school years for boys and girls. Trends were that being Poor, Black or Hispanic was indicative of not meeting the Meets Grade Level standard for boys, with poverty being the most critical predictor. Being White or Asian was indicative of meeting the Meets Grade Level standard for girls. Concerning the years analyzed in this study, an average of 72% of Black students and 76% of Hispanic students were considered Poor compared to only 28% of Asian students and 29% of White students (Texas Education Agency, 2019b). Poverty affects academic performance. Far too many students are being left behind when the goal is for every student to succeed.

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