DIFFERENCES IN THE READING PERFORMANCE OF TEXAS GRADE 4

STUDENTS AS A FUNCTION OF THEIR ECONOMIC STATUS, GENDER, AND

ETHNICITY/RACE: A MULTIYEAR, STATEWIDE INVESTIGATION

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Dissertation

Presented to

The Faculty of the Department of Educational Leadership

Sam Houston State University

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In Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

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by

LaTracy Harris

December, 2018

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DEDICATION

This dissertation and body of work is dedicated to my husband, Taiwan Harris; my daughter, Logan Harris; and my son, Landon Harris for always allowing me to dream and achieve the impossible!

ABSTRACT

Harris, LaTracy, *Differences in the reading performance of Texas Grade 4 students as a function of their economic status, gender, and ethnicity/race: A multiyear, statewide investigation.* Doctor of Education (Educational Leadership), December 2018, Sam Houston State University, Huntsville, Texas.

Purpose

The purpose of this journal-ready dissertation was to examine the extent to which economic status, gender, and ethnic/racial differences were present in the reading achievement of Texas Grade 4 students. In the first article, the extent to which economic status (i.e., Not Poor, Moderately Poor, and Very Poor) is related to the reading achievement of Texas Grade 4 students was examined. In the second article, the degree to which gender differences might exist in the reading performance of Texas Grade 4 students was addressed. In the third study, the extent to which ethnic/racial (i.e., Asian, White, Hispanic, Black) differences might be present in the reading performance of Texas Grade 4 students was determined. For each of these studies, archival data from the Texas Education Agency Public Education Information Management System were analyzed. An analysis of academic performance for the 2012-2013, 2013-2014, and 2014-2015 school years on the state-mandated reading assessments for Texas Grade 4 students was conducted to determine the degree to which trends were present in reading performance by economic status, between boys and girls, and among four different ethnic/racial groups.

Method

For this quantitative study, a causal-comparative research design was utilized. Archival data from the State of Texas Assessment of Academic Readiness (STAAR) test for Grade 4 students were obtained from the Texas Education Agency Public Education

Information Management System for the 2012-2013, 2013-2014, and 2014-2015 school years.

Findings

After analyzing the data for approximately 400,000 Grade 4 students in Texas, students who were Very Poor had statistically significantly lower reading test scores than students who were Not Poor and Moderately Poor. Students who were Moderately Poor had statistically significantly lower reading test scores than students who were Not Poor. Regarding gender, boys had statistically significantly lower reading test scores than girls. Concerning ethnicity/race, a clear stair-step effect was present in that Asian students had the highest reading test scores, followed by White students, and Hispanic students. Black students had the poorest reading test scores in all three school years. Results in all three school years for all three articles were congruent with the extant research literature.

KEY WORDS: Economically disadvantaged, Poverty, Gender, Ethnicity/race, Literacy, Texas, Grade 4, STAAR reading test, Reporting Category, Level II Final Satisfactory Performance Standard

of age and enrolled in the eighth grade. She has blossomed to such a responsible, high performing, and talented young lady. It is difficult to believe that at the onset of this program, she was just entering the sixth grade. By the grace of God, she has maintained honor roll status from birth to now despite me devoting countless hours to doctoral coursework. My son, Landon Harris, is now 6 years of age and enrolled in the first grade. When I started this program, he was just entering prekindergarten. He has been extremely patient with my never-ending homework schedule. I'm proud to be called mom by two of the most amazing kiddos on the planet. They inspire me to work harder and give more of myself every day.

I would also like to acknowledge my brother, LaTerric Limbrick for believing in me and keeping me uplifted. By inquiring about my classes and showing a genuine interest in my career and educational decisions, he has been more of a support than he realizes. A brother is a gift to the heart and a friend to the spirit. Sometimes we need someone to simply be there. Not to fix anything, or to do anything in particular, but just to let us feel that we are loved and supported. I am thankful for an amazing little brother.

My acknowledgments would not be complete without thanking my in-laws, Clinton and Leisa Glenn. They had been instrumental in keeping my kids engaged during the weekends so that I was able to work for hours on end. They have helped ensure that my children experience a normal upbringing while I'm consumed with completing this program. I am forever grateful for your love and support.

Besides the individuals already mentioned, I would like to acknowledge my school and district family. They have been extremely supportive by participating in

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CHAPTER I

INTRODUCTION

Inequities in the income achievement gap have grown substantially over the last several decades (McGown, 2016). Evidence of the income achievement gap widens almost immediately from birth, as students from low-income families lack academic opportunities (McGown, 2016). Children growing up in poverty face insurmountable obstacles. In the face of economic deficiencies, they often encounter compromised living conditions, neighborhoods, and schools (Dearing et al., 2016). Children in poverty are at the greatest risk of failing to reach their developmental potential and are in the most disadvantaged position in society (Tran, Luchters, & Fisher, 2017). The challenges they encounter result in low academic performance that widens incrementally over time. Conradi, Amendum, and Liebfreund (2016) determined that children from high-poverty backgrounds read at a lower proficiency level than their peers. According to Jones, Ostojic, Menard, Picard, and Miller (2017), poverty is the strongest predictor of learning challenges and poor academic outcomes for children. Children in poverty fail to make parallel gains when compared to their peers in a more affluent background (Jones et al., 2017).

Review of the Literature on Reading and Poverty

Poverty is a serious issue affecting the United States as it reduces educational opportunities available for students (Olszewski-Kubilius & Corwith, 2018). In 2015, 14.7 million children under the age of 18 were living below the poverty line in the United States (National Center for Education Statistics, 2017). An estimated 21% of all children

in the United States live in families where the earned income is below the federal poverty line of $23,550 for a family of four (Olszewski-Kubilius & Corwith, 2018).

According to the National Center for Children in Poverty (2017), in Texas, there are 3,489,798 families with 6,927,328 children. Of these children, 25% (i.e., 1,697,981) live in poverty and in poor living conditions (National Center for Children in Poverty, 2017). Childhood hunger is one of the side effects of poverty (Texas Classroom Teacher Association, 2014). In fact Texas has the third highest rate of food insecure households in the United States at 18.4% (Texas Classroom Teacher Association, 2014). Children who struggle with getting enough food are more likely to experience headaches, fatigue, colds, stomachaches, and ear infections (Texas Classroom Teacher Association, 2014). These ailments often prevent students from having good attendance in school; therefore, making students vulnerable to falling further behind. Children living in high poverty concentrated neighborhoods are susceptible to the most challenges such as higher dropout rates and teen births (Center for Public Policy Priorities, 2016). In Texas, 19% of children (more than 1.3 million) live in high poverty neighborhoods (Center for Public Policy Priorities, 2016). The lack of proper nutrition can negatively influence the ability of children to focus and function in school. When basic nutritional needs are not met, students tend to have an increasingly higher levels of behavioral, emotional, and academic problems (Texas Classroom Teacher Association, 2014). It is evident that poverty is connected to many challenges, including academic challenges for students in the United States, as well as for students in Texas.

Family income poverty is the strongest predictor of academic performance in school (Garrett-Peters, Mokrova, Vernon-Feagans, Willoughby, & Pan, 2016). More

specifically, children living in poverty exhibit poor cognitive and language development skills that hinder their acquisition of vital basic reading skills (Garrett-Peters et al., 2016). It is due to this lack of basic reading skill acquisition that children below the poverty line do not achieve at adequate levels (Stinnett, 2011). Many researchers (e.g., Conradi et al., 2016; Dearing et al., 2016; McGown, 2016; Tran, Luchters, & Fisher, 2017) have examined the relationship between poverty and academic performance in reading. Amid the multitude of empirical research articles in the extant literature, the influence that poverty has on a student's ability to read fluently and proficiently as measured by standardized assessments has been detailed in several studies.

For years, educators have recognized the importance of mastering reading by the end of third grade (Hernandez & Casey, 2011). Third grade is an important grade-level because students in Texas are required to take the state assessment for the first time in this grade. To measure reading proficiency in the state of Texas, students take the State of Texas Assessment of Academic Readiness test (STAAR). The results from the STAAR assessment are not only used to determine the proficiency level for students but to assign yearly ratings to schools and districts. Historically, school districts with high numbers of students in poverty struggle to meet standards. Therefore, researchers (e.g., McGown, 2016) have determined it essential to analyze the effects of poverty on academic performance in reading. Examined in her study were archival data from Grade 3 students in Texas who were administered the STAAR Reading assessment in the 2012-2013, 2013-2014, and 2014-2015 school years. Each of the three STAAR Reading Reporting Categories as well as the percentage of students meeting the STAAR Reading

Level II Final Satisfactory Performance Standard were analyzed to determine if differences existed in reading performance by student economic status.

Regarding the Reading Reporting Categories, the Texas Education Agency provides the following definitions (a) Reading Reporting Category 1: Understanding across genres; (b) Reading Reporting Category 2: Understanding and analysis of literary texts; (c) Reading Reporting Category 3: Understanding and analysis of informational texts (2011). As documented by McGown (2016), statistically significant differences were present by degree of economic disadvantage for all three school years for Reporting Categories 1, 2, and 3. Students who were Extremely Poor (i.e., qualified for the federal free price lunch program) scored statistically significantly lower on the Reading Reporting Categories 1, 2, and 3 than did students who were Moderately Poor (i.e., qualified for the reduced-price lunch program). Moreover, students who were Moderately Poor scored statistically significantly lower than did students who were Not Poor (i.e., did not qualify for either the federal free or reduced-price lunch program) on the Grade 3 STAAR Reading assessment. Therefore, both groups of students in poverty had statistically significantly lower average reading scores in Reporting Categories 1, 2, and 3 than students who were Not Poor.

Regarding the Level II Final Satisfactory Performance Standard, students who were Extremely Poor had the lowest performance, followed by students who were in the Moderately Poor group, and then by students who were in the Not Poor group. As such, a stair-step effect (Carpenter, Ramirez, & Severn, 2006) was present in the Reading Reporting Category 1, 2, and 3 and in the Level II Final Satisfactory Performance Standard. As student degree of poverty increased, their reading performance became

poorer (McGown, 2016). Based on the findings of this study, it is evident that students in poverty perform at a disproportionately lower rate than their more advantaged peers.

In another recent investigation, Harris and Slate (2017) examined the reading achievement of Grade 3 Black students in Texas as a function of their economic status (i.e., Not Poor, Moderately Poor, and Extremely Poor) at the Phase-In I, Phase-In II, and Phase-In III level on the STAAR Reading exam in the 2015-2016 school year. All three reading indicators (i.e., Phase-In I, Phase-In II, and Phase-In III) from the 2015-2016 STAAR exam were analyzed separately for Grade 3 Black students in the Harris and Slate (2017) study. Results were that the percentage of Grade 3 Black students who passed the three reading indicators decreased as their poverty level increased. In all three STAAR Reading performance standards, a clear stair-step effect (Carpenter, Ramirez, & Severn, 2006) was present. As the degree of poverty increased, the percentage of Grade 3 Black students demonstrating proficient academic performance on the STAAR reading assessment decreased. In the Harris and Slate (2017) investigation, poverty was clearly related to the reading performance of Grade 3 Black students.

Educators have not only seen Grade 3 students underperform as a result of poverty, the impact has also been seen in early childhood. Crosnoe and Cooper (2010) conducted an investigation on the Early Childhood Longitudinal Study-Kindergarten Cohort to determine factors that mediated the connection between children in poverty and early childhood learning. As noted by Crosnoe and Cooper (2010), children who are economically disadvantaged enter preschool with fewer developed cognitive skills than their peers. Ultimately, these children make lower grades and fall grade levels behind (Barker & Coley, 2007), as they move through the educational system (Crosnoe &

Cooper, 2010). The economic disadvantages experienced by these students accumulated over time and they continued to lag behind their peers. As supported by the findings, the startling reality is that students who were economically disadvantaged scored on average seven points lower on reading tests than students who were not economically disadvantaged (Crosnoe & Cooper, 2010). The associations of poverty were at least two times the magnitude of other factors identified as barriers to student success. Interpreting the results of the study, Crosnoe and Cooper (2010) contended that "Income poverty plays a greater role in early learning than other elements" (p. 283).

Further examining the effects of poverty on reading achievement, Herbers et al. (2012) investigated the importance of early academic achievement for later achievement trajectories among 18,011 students grouped by economic status. The economic groups consisted of three groups: (a) students eligible for free meals, (b) students eligible for reduced price meals, and (c) students who were not low income. Standardized achievement tests were administered to all Grade 3 through Grade 7 students. Among the students in the study, 55% qualified for free meals, 4% qualifying for reduced price meals, and 31% did not qualify for either program (Herbers et al., 2012). Reading fluency measured in Grade 1 predicted both initial levels and growth of reading achievement from Grade 3 to Grade 8. According to Herbers et al. (2012), the lowest levels of performance on Grade 1 reading assessments were associated with students in poverty. Moreover, students in poverty were at-risk for differences in reading achievement and growth across Grade 3 through Grade 8. Gaps in reading achievement observed at age 18 were already present as early as age 5 (Duncan et al., 2007). According to Herbers et al. (2012), poverty has a lasting influence on reading proficiency

and early deficits in literacy establishes long-term effects on academic trajectories in Grades 3 through Grade 8.

Review of the Literature on Reading and Gender Differences

Gender differences in reading have been studied for centuries (Ayers, 1909). With reading being essential for academic success, it is apparent why researchers seek to understand the reading proficiency levels of girls and boys. Not only has the topic of gender differences in reading been examined in the United States, but it has been investigated in numerous other countries as well. This concern is one that spans across the globe due to similar gender differences in reading performance around the world. In a recent international study, Mullis, Martin, Foy, and Hooper (2017) established that, in reading, girls had higher average scores than did boys in 48 of the 50 countries that participated in the 2016 Progress in International Reading Literacy Study. Furthermore, boys did not have higher reading achievement scores than girls in any of the 50 countries (Mullis et al., 2017). Of particular importance are reading disparities in high school. As noted by Wright and Slate (2015), Texas high school girls continue to outperform boys on state-mandated reading exams. Strong reading comprehension and critical thinking skills are paramount in competing for jobs in the 21st century. All students, regardless of gender, must acquire such literacy skills early in their education (McGown, 2016).

In an analysis of gender differences from elementary through high school, Klecker (2006) examined Grade 4, 8, and 12 students' National Assessment of Educational Progress test scores across the 1992, 1994, 1998, 2000, 2002, and 2003 school years. Grade 4 girls outperformed boys in reading in all six years. Klecker (2006) reported, similar to Grade 4 results, that Grade 8 girls had higher reading scores than

Grade 8 boys. Grade 12 results were congruent with Grade 4 and Grade 8 results in that Grade 12 girls had higher reading scores than Grade 12 boys.

In a similar study, Below, Skinner, Fearrington, and Sorrell (2010) investigated the degree to which gender differences were present in early literacy of kindergarten through Grade 5 students. Girls scored higher than boys on all four pre-literacy skills (Below et al., 2010). As such, findings were in agreement with previous researchers (e.g., Stinnett, 2011) that girls enter school with more advanced literacy skills than boys. Specifically established by Stinnett (2011) was that girls have stronger reading skill development entering kindergarten than do boys. From Kindergarten to Grade 5, statistically significant differences exist in reading performance between girls and boys that favored girls.

In another international study, the reading achievement of Grade 4 girls and boys across participating G-20 countries was examined (National Center for Education Statistics, 2015). All G-20 countries had higher percentages of Grade 4 girls outscore Grade 4 boys in reading, with differences ranging from 8 percentage points in France to 25 percentage points in Saudi Arabia (National Center for Education Statistics, 2015). In the United States, the difference between girls and boys was 13 percentage points. Girls outscored boys in reading at every grade level and at every age analyzed (National Center for Education Statistics, 2015).

In a recent investigation directly related to this article, McGown (2016) analyzed the degree to which gender differences were present in the reading performance of Texas Grade 3 students. She examined the State of Texas Assessment of Academic Readiness (STAAR) Reading assessment for three years. Regarding Reading Reporting Category 1,

2, and 3, Grade 3 girls had statistically significantly higher test scores than Grade 3 boys in all three of the school years examined. Concerning the Level II Final Satisfactory Performance Standard for girls and boys, results for all three school years were statistically significant. Grade 3 girls had statistically significantly higher percentages who met the Level II Final Satisfactory Performance Standard than Grade 3 boys in all three school years. In her investigation, Grade 3 girls had statistically significantly better reading performance in all of the STAAR Reading measures and in all three school years of data she analyzed.

"For the last 100 years, researchers have expressed concern over a male deficit in reading achievement" (Stinnett, 2011, p. 72). Similarly, Klecker (2006) noted the positive relationship between being female and having higher reading scores than male students. As early as 1909, Ayers communicated a concern regarding a deficit with boys in reading. Some researchers (e.g., Northwestern University, 2008) have argued that girls have superior language abilities to boys. Concerning gender inequality, researchers (Catsambis et al., 2012; Condron, 2007; Tach & Farkas, 2006) have postulated the understanding that differences in reading performance between girls and boys exists; however, the underpinnings of that existence needs more exploring. What is certain is that for all students, regardless of gender, to compete in the 21st century; they must acquire proficient reading skills before Grade 3.

Review of the Literature on Reading and Ethnicity/Race

The belief that all children will and can learn has been communicated for decades in the United States. With the enactment of the No Child Left Behind Act in 2001, one of the stated purposes was to close the achievement gap between minority and non-minority

students (U. S. Department of Education, 2005). With the requirements of No Child Left Behind Act, school districts were held responsible for improving student performance for all students, including the four ethnic/racial groups (i.e., Asian, Black, Hispanic, and White) of students in the United States. Additionally, schools were forced to focus on the existence of ethnic/racial disparities in academic performance. Recognizing that the No Child Left Behind Act's stringent requirements were becoming increasingly unworkable for educators, the Every Student Succeeds Act (U.S. Department of Education, 2017) was developed and enacted on December 10, 2015. Similar to the No Child Left Behind Act, the Every Student Succeeds Act provided policymakers with new options for closing the opportunity and achievement gaps in their states (National Conference of State Legislators, 2018).

> Opportunity gaps occur when a group of students receives more or fewer educational inputs, like access to high-quality teachers or learning opportunities, than another student group. Achievement gaps occur when one group of students performs better or worse than another group on measurements of student achievement, like standardized tests or graduation rates. (National Conference of State Legislators, 2018, para 2)

Regardless of race/ethnicity, the accountability system under the Every Student Succeeds Act requires schools to disaggregate data, isolate the performance of subpopulations, and ensure that all students are succeeding. As reported by the Nation's Report Card (2015), only about one-third of Grade 4 students performed at or above the proficient level in reading on the State of Texas Assessment of Academic Readiness (STAAR) Reading assessment. Of those students, 57% were Asian, 18% were Black,

21% were Hispanic, and 46% were White (The Nation's Report Card, 2015). Based on the 2015 STAAR Reading exam results, Grade 4 students had an average score of 223 in reading, a score that was quite similar to 2013 results (The Nation's Report Card, 2015). Black and Hispanic students continue to lag behind White and Asian students on national standardized achievement tests (Rothert, 2005). "The gap between the reading scores of White students and African American and Latino students in Grade 4 has not narrowed significantly from 1992 to 2003" (Rothert, 2005, para 3). The achievement gap between White students and students of color continue to widen.

As indicated by Sáenz (2004), although Black students comprise 17% of the nation's high school population, they only take 4% of the Advanced Placement exams. Although the No Child Left Behind Act (2001) and the Every Student Succeed Act (2015) have both highlighted one of the most critical deficiencies in education in the United States, racial/ethnic disparities in reading performance, minimal progress has been made in closing the achievement gaps between these groups. Clearly the relationship between reading performance and ethnicity/race warrants further examination.

In a recent study in the state of interest for this article, Texas, McGown (2016) addressed the extent to which differences were present in the reading performance of Grade 3 students as a function of their ethnicity/race. Three years of reading data (i.e., 2012-2013, 2013-2014, and 2014-2015) from the STAAR Reading exam were analyzed to determine whether Asian, Black, Hispanic, and White students differed in their reading performance. In her study, statistically significant differences were present in the overall reading performance of the four groups of students in all three school years. Regarding Reading Reporting Category 1, Asian students outperformed White, Hispanic, and Black

students; White students outperformed Hispanic students and Black students; and Hispanic students outperformed Black students. Black students were the lowest performing ethnic/racial group (McGown, 2016). Concerning Reporting Category 2 and Reading Reporting Category 3, results were the same. Asian students had the highest performance, followed by White students, Hispanic students, and then Black students (McGown, 2016). In all three school years, Asian students were the highest performing group to meet the Level II Final Satisfactory Performance Standard. The next highest performing group was White students, followed by Hispanic students, and then Black students for all three school years. Consistent with the literature, Asian and White students outperformed Hispanic and Black students on standardized assessments.

In another recent study conducted in Texas, Schleeter (2017) analyzed the degree to which differences were present in STAAR Reading performance by the ethnicity/race (i.e., Asian, Black, Hispanic, and White) of Grade 3 English Language Learners in the 2012-2013, 2013-2014, and 2014-2015 school years. In 2012-2013, Asian English Language Learners had the highest Met Standard rate in the Phase-in standards. Asian English Language Learners had a Met Standard rate that was 7% higher than the Met Standard rate of White English Language Learners, 7.8% higher than the Met Standard rate of Black English Language Learners, and 10.9% higher than the Met Standard rate of Hispanic English Language Learners (Schleeter, 2017). Clearly documented was the presence of a stair-step effect in the reading performance of English Language Learners.

In the 2013-2014 school year, Asian English Language Learners had the highest percentage of students performing at Met Standard, 8.3% higher than for White English Language Learners, 10.5% higher than for Black English Language Learners, and 11.9%

higher for Hispanic English Language Learners (Schleeter, 2017). Concerning the 2014-2015 school year, Asian English Language Learners had the highest percentage who met the Phase-in standard, 11.1% higher than for White English Language Learners, 11.7% higher than for Hispanic English Language Learners, and 12.7% higher than for Black English Language Learners (Schleeter, 2017). Regarding the Level II Phase-in II Satisfactory Performance Standard, the results of all three school years were that Asian English Language Learners had the highest percentage, followed by White English Language Learners, Black English Language Learners, and then Hispanic English Language Learners (Schleeter, 2017). Congruent with the previous STAAR Reading standard, a stair-step effect was present for all three years. In Schleeter's (2017) investigation, Asian English Language Learners had the best performance and Black English Language Learners had the poorest reading performance in all three school years.

Statement of the Problem

For many years, connections between poverty and low reading achievement have been well documented (Conradi et al., 2016; Dearing et al., 2016; Harris & Slate, 2017; Hernandez & Casey, 2011; Reardon, Valentino, & Shores, 2012; Tran et al., 2017). Research has been conducted on Grade 3 students, first year performance on the STAAR assessment, and on students' performance in high school; however, research studies on Grade 4 student performance in Texas on the STAAR assessment have not yet been conducted. Educators are charged with the task of ensuring that all students are successful and able to read on grade level. However, as documented by several researchers, students in poverty fail to achieve in reading, especially in state-tested grades. Therefore, one focus of this journal-ready dissertation was on Grade 4 students

and the degree to which their economic status is related to their reading performance on the state-mandated reading assessment in Texas.

Educators around the world aim to provide students with a solid reading foundation, regardless of gender. However, only a third of children in the United States read at grade level (Sanchez, 2018). Although a strong emphasis in the No Child Left Behind Act was on improving reading performance in early elementary, the legislation did not require disaggregation of data by gender. Therefore, gaps in gender achievement are not monitored as closely as the other achievement gaps in the state and nation (Klecker, 2006). Only by analyzing data by gender will educational leaders become fully cognizant of the disparity in reading performance between girls and boys and implement strategies to close the achievement gap. However, as a result of this exclusion, the newly passed, Every Student Succeeds Act (2015) maintains the requirements for data disaggregation for accountability purposes but has included gender as a subgroup. As identified by Sadker and Zittleman (2005), girls receive better grades on their report card, perform higher than boys on standardized assessments, and are less likely to exhibit behavior challenges. Accordingly, it is imperative to analyze gender differences to inform educators on how to address these types of disparities. Thus, a second focus of this journal-ready dissertation was on Grade 4 students and the degree to which their gender is related to their reading performance on the state-mandated reading assessment in Texas.

"The Brown vs. Board of Education ruling stands as one of the more important cases for the American civil rights movement" (Epps-Robertson, 2016, p. 108). With the overturning of the separate but equal clause, schools were forced to integrate and provide

an equal access to education for all students. Nevertheless, students from different ethnic/racial backgrounds continue to struggle in school. For decades, Asian students have outperformed White, Hispanic, and Black students in reading (The Nations Report Card, 2015). A cadre of researchers (e.g., Barry, 2000; Feldman, 2012; McGown, 2016; National Conference of State Legislators, 2018; Quirk & Schwanenflugel, 2004; Rothert, 2005; Salinger, 2003; Schleeter, 2017; Thoron & Myers, 2011; U. S. Department of Education, 2005; Wu, Morgan, & Farkas, 2014) have documented the presence of extensive achievement gaps among the major ethnic/racial groups. Of note, however, is that researchers have not previously analyzed ethnic/racial gaps of Grade 4 students in reading on the new Texas state-mandated assessment, the STAAR exam. Therefore, the focus of this study was on the reading performance of Grade 4 students to ascertain the degree to which ethnic/racial differences might be present.

Purpose of the Study

The purpose of this journal-ready dissertation was to examine the extent to which economic status, gender, and ethnic/racial differences were present in the reading achievement of Texas Grade 4 students. In the first article, the extent to which economic status (i.e., Not Poor, Moderately Poor, and Very Poor) is related to the reading achievement of Texas Grade 4 students was examined. In the second article, the degree to which gender differences might exist in the reading performance of Texas Grade 4 students was addressed. In the third study, the extent to which ethnic/racial (i.e., Asian, White, Hispanic, Black) differences might be present in the reading performance of Texas Grade 4 students was determined. For each of these studies, archival data from the Texas Education Agency Public Education Information Management System were

analyzed. An analysis of academic performance for the 2012-2013, 2013-2014, and 2014-2015 school years on the state-mandated reading assessments for Texas Grade 4 students was conducted to determine the degree to which trends were present in reading performance by economic status, between boys and girls, and among four different ethnic/racial groups.

Significance of the Study

A substantial body of research (e.g., Below et al., 2010; Conradi et al., 2016; Crosnoe & Cooper, 2010; Dearing et al., 2016; Klecker, 2006; McGown, 2016; Moore et al., 2012; Sadker & Zittleman, 2005; Sanchez, 2018) has been generated illustrating the presence of a statistically significant relationship between poverty, gender, ethnicity/race, and reading performance. As it relates to poverty, few researchers have analyzed the connections between degrees of economic disadvantage (i.e., Not Poor, Moderately Poor, and Very Poor) and the three reporting categories (i.e., Reporting Category 1, Reporting Category 2, and Reporting Category 3) as measured by the State of Texas Assessment of Academic Readiness exam. Regarding gender differences, the performance of girls and boys in reading have been explored in great depth. Because of this research, the underperformance of boys in reading across the globe, have raised much concern. In spite of the numerous research and findings regarding the inequities in gender performance, improvement with how boys perform in reading is still unobserved. With the focus of the No Child Left Behind Act (2001) being on other subgroups and not gender, little progress has been made in closing the gender gap in reading. Similar to poverty, the reading performance of Grade 4 students by gender as measured by the STAAR assessment has not been previously examined. In reference to ethnicity/race,

clear disparities have been documented in reading performance among the four major

ethnic/racial groups. To date, no published articles were located in which Grade 4

student performance on the Texas state-mandated assessment has been addressed.

Because of the urgency of this study, the findings of this investigation may be used to add

to the existing research regarding poverty, gender, and ethnicity/race and reading

performance. Administrators, teachers, policymakers, and legislators might utilize the

findings of this study when making decisions regarding improving reading achievement

in our country.

Definition of Terms

The definition of terms that are important to the three research studies that were

conducted in this journal-ready dissertation are provided for the reader below.

Asian

A person of Asian descent is defined as a person having origins in any of

the original places of the Far East, Southeast Asia, or the Indian subcontinent

including, for example, Cambodia, China, India, Japan, Korea, Malaysia,

Pakistan, the Philippine Islands, Thailand, and Vietnam (Texas Education Agency

Appendix F, 2013).

Black

A person of Black descent is defined as a person having origins in any of

the Black racial groups of Africa (Texas Education Agency Appendix F, 2013).

Economically Disadvantaged

Economically disadvantaged is defined by The Texas Education Agency

(Appendix F, 2013) as "a student who is eligible for free or reduced-price meals under

the national School Lunch and Child Nutrition Program" (para. 5). Very Poor (i.e., those

students who qualify for the federal free-lunch program), (b) Moderately Poor (i.e., those

students who qualify for federal reduced-lunch program), and (c) Not Poor (i.e., those

students who did not qualify for the federal free- nor reduced-lunch program).

Ethnicity/Race

The United States Department of Education (USDE) requires all state and local

education institutions to collect data on ethnicity and race for students and staff. This

information is used for state and federal accountability reporting. Parents are required to

answer a two-part questionnaire to identify a student's ethnic and racial classification.

The first part of the survey ask parents to identify if a student is Hispanic/Latino or Not

Hispanic/Latino. The second part of the survey ask parents to select a race from the five

options provided, American Indian or Alaska Native, Asian, Black or African American,

Native Hawaiian or Other Pacific Islander, and White (Texas Education Agency

Appendix F, 2013).

Hispanic

A person of Hispanic descent is defined as an individual of Cuban,

Mexican, Puerto Rican, South or Central American descent, or other Spanish

culture or origin, regardless of race (Texas Education Agency Appendix F, 2013).

Level I Unsatisfactory Academic Performance

This performance label is assigned to students who did not meet the grade level

passing score. Students in this category are not able to demonstrate a basic level of

understanding of course expectations. Significant remediation is recommended for the

following school year (Texas Education Agency, The New STAAR Report Card Presentation, 2017, p. 11).

Level II Satisfactory Academic Performance

This performance label is assigned to students who demonstrate some knowledge of course content but may be missing critical elements. Students in this category are still in need of additional support. However, this level of performance constitutes a passing score with some remediation for the next school year (Texas Education Agency, The New STAAR Report Card Presentation, 2017, p. 10).

Level III Advanced Academic Performance

This performance label is assigned to students who demonstrate mastery of the course knowledge and skills. Students in this category are on track for college and/or career readiness. No support is needed for the following year. These students have also demonstrated that they are able to apply course content outside of the classroom (Texas Education Agency, The New STAAR Report Card Presentation, 2017, p. 8).

Public Education Information Management System

The Public Education Information Management System is comprised of all data requested and received by the Texas Education Agency regarding public education, including student demographic and academic performance, personnel, financial, and organizational information. The Public Education Information Management System database only contains the necessary data for the legislature and the Texas Education Agency to perform their legally authorized functions in overseeing public education (Public Education Information Management System Overview, 2018, para. 1).

Reporting Category 1

The STAAR assessment has three reporting categories. Reporting Category 1 measures the student's ability to understand and to analyze a variety of texts across reading genres. In addition, the Reporting Category 1 contains five multiple-choice items (Texas Education Agency STAAR Performance Level Descriptors, 2016a).

Reporting Category 2

The STAAR assessment has three reporting categories. Reporting Category 2 measures the student's ability to understand and to analyze literary texts. In addition, Reporting Category 2 consists of 15 multiple-choice items (Texas Education Agency STAAR Performance Level Descriptors, 2016a).

Reporting Category 3

The STAAR assessment has three reporting categories. Reporting Category 3 measures the student's ability to understand and to analyze informational texts. In addition, Reporting Category 3 is comprised of 14 multiple-choice items (Texas Education Agency STAAR Performance Level Descriptors, 2016a).

State of Texas Assessment of Academic Readiness (STAAR)

The State of Texas Assessments of Academic Readiness (STAAR) is the state testing program that was implemented in the 2011-2012 school year. The Texas Education Agency, in collaboration with the Texas Higher Education Coordinating Board and Texas educators, developed the STAAR program in response to requirements set forth by the 80th and 81st Texas legislatures. The STAAR is an assessment program, which starts when students are in Grade 3, intended to measure the extent to which students have learned and are able to apply the knowledge and skills defined in the state-

mandated curriculum standards, the Texas Essential Knowledge and Skills. Every STAAR question is directly aligned to the Texas Essential Knowledge and Skills currently implemented for the grade/subject or course being assessed (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b).

Texas Education Agency

The Texas Education Agency is the state agency that oversees primary and secondary public education in the state of Texas for more than 5 million students (Texas Education Agency, About TEA, 2018, para 1). The mission of the Texas Education Agency is to "provide leadership, guidance and resources to help schools meet the educational needs of all students" (Texas Education Agency About TEA, 2018, para 2).

White

A person of White descent is defined as a person having origins in any of the original peoples of Europe, the Middle East, or North Africa (Texas Education Agency Appendix F, 2013).

<div align="center">

Literature Review Search Procedures

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For this journal-ready dissertation, the literature regarding the academic performance of students and its relationship to economic status, gender, and ethnicity/race was examined. To search for relevant literature, the phrases economically disadvantaged, STAAR, poverty, race, ethnicity, gender, student, and Texas were used. The searches for this journal-ready dissertation were conducted through the EBSCO Host database for academic journals. The criteria were defined as scholarly peer reviewed articles with a publication date within the last five to 10 years.

In searching for the word "reading" 37,692 articles were located. To narrow this search and find articles specifically related to the effects of poverty on reading achievement, "poverty" was added to the search. By adding this word, the selection of articles were reduced to 324. Articles were reviewed to ensure their relevance on the influence of poverty on reading achievement.

Delimitations

In this study, only the reading performance of Texas Grade 4 students as measured by the State of Texas Assessment of Academic Readiness (STAAR) exam was analyzed. A delimitation is that only three years of data (i.e., 2012-2013, 2013-2014, and 2014-2015) were examined which restricts generalizability of the results to these three years. Another delimitation is that economic status was limited to the definition provided by the federal government regarding free and reduced lunch. The final delimitation involved a sole focus on the four major ethnic/racial groups (i.e., Asian, White, Hispanic, and Black) of students in Texas public schools.

Limitations

For the purpose of this journal-ready dissertation, only the reading achievement of Texas Grade 4 students were analyzed. Due to the causal-comparative nature of the study, the independent variables (i.e., economic status, gender, and ethnicity) and the dependent variable (i.e., academic achievement in reading) were not controlled (Johnson & Christensen, 2012). Additionally, other variables may also contribute to any differences that may be obtained in the reading achievement by economic status, gender, or ethnicity/race.

Assumptions

For the purpose of this journal ready dissertation, the assumption was made that the achievement data and the economic status, gender, and ethnic/racial data in the Texas Education Agency Public Education Information Management System were accurately reported. Moreover, the consistency in which Texas elementary schools collect and report student data was assumed to be accurate and consistent statewide. A final assumption was that the validity and consistency in which the STAAR Reading scores were collected from elementary schools across the state of Texas aligned with the stipulations outlined by the state of Texas. Therefore, any modifications to these assumptions may result in inaccurate data yielding contradictory results.

Procedures

In this journal-ready dissertation, initial approval was requested from this researcher's dissertation committee. Once approval was received from the dissertation committee, additional approval was requested from Sam Houston State University's Institutional Review Board. Once approval from both sources were received, previously obtained data for Grade 4 students who took the STAAR Reading assessment in the 2012-2013, 2013-2014, or 2014-2015 school years from the Public Education Information Management System were analyzed.

Organization of the Study

In this journal-ready dissertation, three research investigations were conducted. In the first article, the research questions that were addressed were on the degree to which differences might exist on the STAAR Reading Grade 4 assessment among students who were Not Poor, those students who were Moderately Poor, and those students who were

Very Poor in the 2012-2013, 2013-2014, and 2014-2015 school years. In the second
article, the research questions that were addressed were on the degree to which
differences might be present on the STAAR Reading Grade 4 assessment between girls
and boys for the 2012-2013, 2013-2014, and 2014-2015 school years. Finally, in the
third article, the research questions that were addressed were on the extent to which
differences might exist on the STAAR Reading Grade 4 assessment among four
ethnic/racial groups (i.e., Asian, Black, Hispanic, and White) for the 2012-2013, 2013-
2014, and 2014-2015 school years.

This journal-ready dissertation is comprised of five chapters. Chapter I includes
the background of the study, statement of the problem, purpose of the study, significance
of the study, definition of terms, delimitations, limitations, assumptions and outline of the
journal-ready dissertation. Chapter II contains the background information for the first
journal-ready dissertation involving student economic status and reading achievement.
Chapter III contains the background information for the second journal-ready dissertation
concerning gender and reading achievement. Chapter IV contains the background
information for the third journal-ready dissertation regarding ethnicity/race and reading
achievement. Lastly, in Chapter V, the results interpreted in the three research articles
were discussed.

CHAPTER II

DIFFERENCES IN THE READING PERFORMANCE OF TEXAS GRADE 4

STUDENTS AS A FUNCTION OF THEIR ECONOMIC STATUS: A MULTIYEAR,

STATEWIDE INVESTIGATION

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

Abstract

In this study, the degree to which differences were present in the reading performance of Grade 4 Texas students as a function of their economic status (i.e., Not Poor, Moderately Poor, and Very Poor) was analyzed. Data obtained from the Texas Education Agency Public Education Information Management System for all Grade 4 students in Texas who took the State of Texas Assessment of Academic Readiness Reading exam, were analyzed for the 2012-2013, 2013-2014, and 2014-2015 school years. In all three years examined, statistically significant differences were established in not only overall reading performance, but also in all three Reading Reporting categories. A clear stair-step effect was present. The higher the degree of poverty, the lower student STAAR Reading test scores were. Finally, the higher the degree of poverty, the lower the percentages of students who met the passing standard on the STAAR Reading exam. Future research and implications for policy and practice are suggested.

Keywords: Not Poor, Moderately Poor, Very Poor, STAAR Reading test, Texas, Grade 4, Level II Final Satisfactory Standard and Literacy.

DIFFERENCES IN THE READING PERFORMANCE OF TEXAS GRADE 4

STUDENTS AS A FUNCTION OF THEIR ECONOMIC STATUS: A MULTIYEAR,

STATEWIDE INVESTIGATION

Poverty is a serious issue affecting the United States as it reduces educational

opportunities available for students (Olszewski-Kubilius & Corwith, 2018). In 2015,

14.7 million children under the age of 18 were living below the poverty line in the United

States (National Center for Education Statistics, 2017). An estimated 21% of all children

in the United States live in families where the earned income is below the federal poverty

line of $23,550 for a family of four (Olszewski-Kubilius & Corwith, 2018).

According to the National Center for Children in Poverty (2017), in Texas, there

are 3,489,798 families with 6,927,328 children. Of these children, 25% (i.e., 1,697,981)

live in poverty and in poor living conditions (National Center for Children in Poverty,

2017). Childhood hunger is one of the side effects of poverty (Texas Classroom Teacher

Association, 2014). In fact Texas has the third highest rate of food insecure households

in the United States at 18.4% (Texas Classroom Teacher Association, 2014). Children

who struggle with getting enough food are more likely to experience headaches, fatigue,

colds, stomachaches, and ear infections (Texas Classroom Teacher Association, 2014).

These aliments often prevent students from having good attendance in school; therefore,

making students vulnerable to falling further behind. Children living in high poverty

concentrated neighborhoods are susceptible to the most challenges such as higher dropout

rates and teen births (Center for Public Policy Priorities, 2016). In Texas, 19% of

children (more than 1.3 million) live in high poverty neighborhoods (Center for Public

Policy Priorities, 2016). The lack of proper nutrition can negatively influence the ability

of children to focus and function in school. When basic nutritional needs are not met, students tend to have increasingly higher levels of behavioral, emotional, and academic problems (Texas Classroom Teacher Association, 2014). It is evident that poverty is connected to many challenges, including academic challenges for students in the United States, as well as for students in Texas.

Family income poverty is the strongest predictor of academic performance in school (Garrett-Peters, Mokrova, Vernon-Feagans, Willoughby, & Pan, 2016). More specifically, children living in poverty exhibit poor cognitive and language development skills that hinder their acquisition of vital basic reading skills (Garrett-Peters et al., 2016). It is due to this lack of basic reading skill acquisition that children below the poverty line do not achieve at adequate levels (Stinnett, 2011). Many researchers (e.g., Conradi, Amendum, & Liebfreund, 2016; Dearing et al., 2016; McGown, 2016; Tran et al., 2017) have examined the relationship between poverty and academic performance in reading. Amid the multitude of empirical research articles in the extant literature, the influence that poverty has on a student's ability to read fluently and proficiently as measured by standardized assessments has been detailed in several studies.

For years, educators have recognized the importance of mastering reading by the end of third grade (Hernandez & Casey, 2011). Third grade is an important grade-level because students in Texas are required to take the state assessment for the first time in this grade. To measure reading proficiency in the state of Texas, students take the State of Texas Assessment of Academic Readiness test (STAAR). The results from the STAAR assessment are not only used to determine the proficiency level for students but to assign yearly ratings to schools and districts. Historically, school districts with high

numbers of students in poverty struggle to meet standards. Therefore, researchers (e.g., McGown, 2016) have determined it essential to analyze the effects of poverty on academic performance in reading. Examined in her study were archival data from Grade 3 students in Texas who were administered the STAAR Reading assessment in the 2012-2013, 2013-2014, and 2014-2015 school years. Each of the three Reading Reporting Categories as well as the percentage of students meeting the Level II Final Satisfactory Performance Standard were analyzed to determine if differences existed in reading performance by student economic status.

Regarding the STAAR Reading Reporting Categories, the Texas Education Agency provides the following definitions (a) Reading Reporting Category 1: Understanding across genres; (b) Reading Reporting Category 2: Understanding and analysis of literary texts; (c) Reading Reporting Category 3: Understanding and analysis of informational texts (2011). As documented by McGown (2016), statistically significant differences were present by degree of economic disadvantage for all three school years for Reading Reporting Categories 1, 2, and 3. Students who were Extremely Poor (i.e., qualified for the federal free price lunch program) scored statistically significantly lower on the Reading Reporting Categories 1, 2, and 3 than did students who were Moderately Poor (i.e., qualified for the reduced-price lunch program). Moreover, students who were Moderately Poor scored statistically significantly lower than did students who were Not Poor (i.e., did not qualify for either the federal free or reduced-price lunch program) on the Grade 3 STAAR Reading assessment. Therefore, both groups of students in poverty had statistically significantly lower average reading scores in Reporting Categories 1, 2, and 3 than students who were Not Poor. Regarding

the Level II Final Satisfactory Performance Standard, students who were Extremely Poor

had the lowest performance, followed by students who were in the Moderately Poor

group, and then by students who were in the Not Poor group. As such, a stair-step effect

(Carpenter, Ramirez, & Severn, 2006) was present in the Reading Reporting Category 1,

2, and 3 and in the Level II Final Satisfactory Performance Standard. As student degree

of poverty increased, their reading performance became poorer (McGown, 2016). Based

on the findings of this study, it is evident that students in poverty perform at a

disproportionately lower rate than their more advantaged peers.

      In another recent investigation, Harris and Slate (2017) examined the achievement

of Grade 3 Black students in Texas as a function of their economic status (i.e., Not Poor,

Moderately Poor, and Extremely Poor) at the Phase-In I, Phase-In II, and Phase-In III

level on the STAAR Reading exam for the 2015-2016 school year. The STAAR exam is

measured by three categories of performance. The Phase-In I level indicates students

meeting unsatisfactory academic performance who did not meet the minimum standard

set for that subject area. According to the Texas Education Agency, students scoring in

this category are not adequately prepared for the next grade level and are not likely to be

successful without significant and ongoing instructional support (Texas Education

Agency STAAR Performance Level Descriptors, 2016a). The Phase-In II level includes

the students who reached satisfactory academic performance. Students at this level

demonstrate performance that is at or above passing (Texas Education Agency STAAR

Performance Level Descriptors, 2016a). Additionally, students in this category are

sufficiently prepared for the next grade level and are highly likely to be successful (Texas

Education Agency STAAR Performance Level Descriptors, 2016a). Students achieving

at the Phase-In III level demonstrate performance that is considered above passing standards. As indicated in this category, students are well prepared for the next grade level and considered highly likely to be successful in that grade (Texas Education Agency STAAR Performance Level Descriptors, 2016a).

All three reading indicators (i.e., Phase-In I, Phase-In II, and Phase-In III) from the 2015-2016 STAAR exam were analyzed separately for Grade 3 Black students in the Harris and Slate (2017) study. Results were that the percentage of Grade 3 Black students who passed the three reading indicators decreased as their poverty level increased. In all three STAAR Reading performance standards, a clear stair-step effect (Carpenter et al., 2006) was present. As the degree of poverty increased, the percentage of Grade 3 Black students demonstrating proficient academic performance on the STAAR Reading assessment decreased. In the Harris and Slate (2017) investigation, poverty was clearly related to the reading performance of Grade 3 Black students.

Educators have not only seen Grade 3 students underperform as a result of poverty, the impact has also been seen in early childhood. Crosnoe and Cooper (2010) conducted an investigation on the Early Childhood Longitudinal Study-Kindergarten Cohort to determine factors that mediated the connection between children in poverty and early childhood learning. As noted by Crosnoe and Cooper (2010), children who are economically disadvantaged enter preschool with fewer developed cognitive skills than their peers. Ultimately, these children make lower grades and fall grade levels behind (Barker & Coley, 2017), as they move through the educational system (Crosnoe & Cooper, 2010). The economic disadvantages experienced by these students accumulated over time and they continued to lag behind their peers. As supported by the findings, the

startling reality is that students who were economically disadvantaged scored on average seven points lower on reading tests than students who were not economically disadvantaged (Crosnoe & Cooper, 2010). The associations of poverty were at least two times the magnitude of other factors identified as barriers to student success. Interpreting the results of the study, Crosnoe and Cooper (2010) contended, "Income poverty plays a greater role in early learning than other elements" (p. 283).

Further examining the effects of poverty on reading achievement, Herbers et al. (2012) investigated the importance of early academic achievement for later achievement trajectories among 18,011 students grouped by their economic status. The economic groups consisted of three groups: (a) students eligible for free meals, (b) students eligible for reduced price meals, and (c) students who were not low income. Standardized achievement tests were administered to all Grade 3 through Grade 7 students. Among the students in the study, 55% qualified for free meals, 4% qualifying for reduced price meals, and 31% did not qualify for either program (Herbers et al., 2012). Reading fluency measured in Grade 1 predicted both initial levels and growth of reading achievement from Grade 3 to Grade 8. According to Herbers et al. (2012), the lowest levels of performance on Grade 1 reading assessments were associated with students in poverty. Moreover, students in poverty were at-risk for differences in reading achievement and growth across Grade 3 through Grade 8. Gaps in reading achievement observed at age 18 were already present as early as age 5 (Duncan et al., 2007). According to Herbers et al. (2012), poverty has a lasting influence on reading proficiency and early deficits in literacy establishes long-term effects on academic trajectories in Grades 3 through Grade 8.

Statement of the Problem

For many years, connections between poverty and low reading achievement have been well documented (Conradi et al., 2016; Dearing et al., 2016; Harris & Slate, 2017; Hernandez & Casey, 2011; Reardon, Valentino, & Shores, 2012; Tran et al., 2017). Research has been conducted on Grade 3 students, first year performance on the STAAR assessment, and on students' performance in high school; however, research on Grade 4 student performance in Texas on the STAAR Reading assessment has not been conducted. Educators are charged with the task of ensuring that all students are successful and able to read on grade level. However, as documented by numerous researchers, students in poverty fail to achieve in reading, especially in state-tested grades. Therefore, the focus of this study was on Grade 4 students and the degree to which their economic status was related to their reading performance on the state-mandated reading assessment in Texas.

Purpose of the Study

The purpose of this study was to examine the degree to which differences were present in the reading achievement of Texas Grade 4 students as a function of their economic status. Specifically addressed was the extent to which differences were present in reading performance on the Texas state-mandated assessment by the economic status of Grade 4 students. In contrast to previous investigations in which student economic status was examined by poverty or non-poverty, in this study student economic status was analyzed by three groupings: Not Poor, Moderately Poor, and Very Poor.

Significance of the Study

A substantial body of research (e.g., Conradi et al., 2016; Crosnoe & Cooper, 2010; Dearing et al., 2016) has been generated illustrating the presence of a statistically significant relationship between poverty and low student achievement in reading. Compared in numerous empirical studies are the relationship between poverty and reading performance as a function of economic status. However, few researchers have examined the relationship between degrees of economic disadvantage (i.e., Not Poor, Moderately Poor, and Very Poor) and the three reporting categories (i.e., Reporting Category 1, Reporting Category 2, and Reporting Category 3) as measured by the State of Texas Assessment of Academic Readiness exam. The STAAR Reading assessment is administered in Grades 3-8. Therefore, in Grade 4, students have a second opportunity to demonstrate their reading proficiency on a standardized assessment. Results from this investigation may be used to add to the existing research, as limited studies have been conducted in this area. In addition, administrators, teachers, and legislators might utilize the findings of this study when making policy decisions with regarding educating students in poverty.

Research Questions

In this study, the following overarching research question was addressed: What is the difference in the reading performance of Texas Grade 4 students as a function of the degree of their economic status (i.e., Not Poor, Moderately Poor, and Very Poor)? Specific subquestions under this overarching research question were: (a) What is the difference in understanding across genres by the economic status of Texas Grade 4 students?; (b) What is the difference in comprehension and analysis of literary texts by

the economic status of Texas Grade 4 students?; (c) What is the difference in comprehension and analysis of informative texts by the economic status of Texas Grade 4 students?; (d) What is the difference in performance on the Level II Final Satisfactory standard by the economic status of Texas Grade 4 students?; and (e) What is the degree to which trends are present in reading by the economic status of Texas Grade 4 students. The first four research subquestions were addressed for three school years, whereas the last research question involved a comparison of results across all three school years.

Method

Research Design

The research design that was used in this study was a quantitative, causal comparative, non-experimental research design (Johnson & Christensen, 2012). Researchers use causal comparative designs to find relationships between independent and dependent variables after the action has already taken place (Johnson & Christensen, 2012). In this investigation, the action that has already taken place was the STAAR Reading test that was administered to Grade 4 students in the 2012-2013, 2013-2014, and 2014-2015 school years. The independent variable in this research study was the degree of economic disadvantage (i.e., Not Poor, Moderately Poor, and Very Poor) and the dependent variables were the three reporting categories (i.e., Reporting Category 1, Reporting Category 2, Reporting Category 3, and the Level II Final Satisfactory Performance Standard) from the 2012-2013, 2013-2014, and 2014-2015 STAAR Reading exams that were analyzed separately for Grade 4 students in Texas.

Participants

Participants in this study were Grade 4 students in Texas who took the STAAR

Reading test in the 2012-2013, 2013-2014, and 2014-2015 school years. Archival data

that was analyzed herein were previously requested through a Public Information Request

form submitted to the Texas Education Agency Public Education Information

Management System, which is a database of demographic student data used to report and

monitor student performance. For the purpose of this study, e*conomically disadvantaged*

is defined by The Texas Education Agency (2013) as "a student who is eligible for free or

reduced-price meals under the national School Lunch and Child Nutrition Program"

(para. 5). The description of economic status was defined by the following, (a)

Extremely Poor (i.e., those students who qualified for the federal free-lunch program), (b)

Moderately Poor (i.e., those students who qualified for federal reduced-lunch program),

and (c) Not Poor (i.e., those students who did not qualify for the federal free- nor

reduced-lunch program).

Instrumentation and Procedures

Data analyzed herein were previously obtained from the Texas Education Agency

Public Education Information Management System database for the 2012-2013, 2013-

2014, and 2014-2015 school years. To obtain the data, a Public Information Request was

submitted to and fulfilled by the Texas Education Agency. Datasets were requested for

(a) Texas Grade 4 students, (b) students who were classified as Not Poor, Moderately

Poor, and Very Poor, (c) STAAR Reporting Categories, and (d) STAAR Phase-In levels.

Assessed by the STAAR Reading test are three categories for performance. In

Reporting Category 1: The student will demonstrate an ability to understand a variety of

written texts across reading genres (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 2). Outlined in this category is the focus on the reading and vocabulary development of the student. Students are expected to understand new vocabulary and use it when reading and writing (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 2). In addition, students are expected to identify the meaning of common prefixes and suffixes and know how they change the meaning of roots words (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 2).

In Reporting Category 2: The student will demonstrate an ability to understand and analyze literary texts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 3). Reporting Category 2 is centered around comprehension of a variety of texts drawing on reading strategies (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 3). Students are expected to ask applicable questions, seek clarification, discover facts and details about stories, and support answers with textual evidence (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 4). In addition, students are expected to make inferences and draw conclusions about theme and genre in different cultural, historical, and contemporary contexts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 4). Reporting Category 2 also measures students' skills on drawing conclusions about the structure and elements of poetry (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 4).

According to The Texas Education Agency, in Reporting Category 3: The student will demonstrate an ability to understand and analyze informational texts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 5). Students are expected to analyze, draw conclusions, and make inferences about the author's purpose in cultural, contemporary, and historical contexts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 5). Similar to Reporting Categories 1 and 2, students are expected to provide evidence from the text to support their understanding.

Each reporting category encompasses Readiness and Supporting Standards (Texas Education Agency The New STAAR Report Card Presentation, 2017, p. 1-2). The general characteristics of Readiness Standards includes skills that are essential for success in the current grade (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 4). These standards are designed to measure student preparedness for the next grade level. In addition, these standards support college and career readiness benchmarks and measures specific content and concepts. Unlike Readiness Standards, Supporting Standards are introduced in the current grade level but emphasizes subject matter in a subsequent year. Addressed in this standard are more narrowly defined content and concepts. Reporting Category 1 includes five multiple choice questions from both the Readiness and Supporting Standards; Reporting Category 2 contains 15 multiple choice questions from both the Readiness and Supporting Standards; and Reporting Category 3 includes 14 multiple choice questions also from both the Readiness and Supporting Standards (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b, p. 4). Also, students are

expected to exhibit "a flexible range of metacognitive reading skills in both assigned and independent reading to understand an author's message… as they become self-directed, critical readers" by being evaluated in their mastery of Figure 19, a TEKS process standard, across the three Reporting Categories (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016b). Readers are directed to http.//tea.texas.gov/ for more reliability and validity information regarding the STAAR test.

The STAAR exam is measured by three categories of performance. The Phase-In I level indicates students meeting unsatisfactory academic performance who did not meet the minimum standard set for that subject area. According to the Texas Education Agency, students scoring in this category are not adequately prepared for the next grade level and are not likely to be successful without significant and ongoing instructional support (Texas Education Agency STAAR Performance Level Descriptors, 2016a). The Phase-In II level includes the students who reached satisfactory academic performance. Students at this level demonstrate performance that is at or above passing (Texas Education Agency STAAR Performance Level Descriptors, 2016a). Additionally, students in this category are sufficiently prepared for the next grade level and are highly likely to be successful (Texas Education Agency STAAR Performance Level Descriptors, 2016a). Students achieving at the Phase-In III level demonstrate performance that is considered above passing standards. As indicated in this category, students are well prepared for the next grade level and considered highly likely to be successful in that grade (Texas Education Agency STAAR Performance Level Descriptors, 2016a).

Results

Prior to conducting a multivariate analysis of variance (MANOVA), its underlying assumptions were checked. Specifically examined were data normality, Box's Test of Equality of Covariance and the Levene's Test of Equality of Error Variances. The majority of these assumptions were not met, however, the robustness of a MANOVA procedure made it appropriate to use in this study (Field, 2009). Results of statistical analyses for Grade 4 students in Texas who took the STAAR Reading test in the 2012-2013, 2013-2014, and 2014-2015 school years who were Extremely Poor, Moderately Poor, and Not Poor will be described by Reading Reporting Category. The results in this study will be discussed in chronological order from 2012-2013, 2013-2014, and 2014-2015.

Overall Results for the Three School Years

Regarding the 2012-2013 school year, the MANOVA revealed a statistically significant difference, Wilks' Λ = .88, p < .001, partial η^2 = .06, in overall reading performance as a function of economic status. The effect size for this statistically significant difference was moderate (Cohen, 1998). With respect to the 2013-2014 school year, the MANOVA revealed a statistically significant difference, Wilks' Λ = .89, p < .001, partial η^2 = .06, in overall reading performance as a function of economic status. Using Cohen's (1988) criteria, the effect size was moderate. Concerning the 2014-2015 school year, the MANOVA revealed a statistically significant difference, Wilks' Λ = .88, p < .001, partial η^2 = .06, in overall reading performance as a function of economic status. Based on Cohen's (1988) criteria, this effect size was moderate. In all

three school years, the effect sizes for the statistically significant difference in student overall reading performance as a function of their economic status were moderate.

Reading Reporting Category 1 Results (Understanding Across Genres) Across All Three School Years

Following the overall results of the MANOVA, univariate follow-up Analysis of Variance (ANOVA) procedures were conducted for each of the three STAAR Reading Reporting Categories. For the 2012-2013 school year, a statistically significant difference in Reading Reporting Category 1 by student economic status was yielded, $F(2, 338014) = 72916.81$, $p < .001$, partial $\eta^2 = .09$, moderate effect size. With respect to the 2013-2014 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 1 by student economic status, $F(2, 341365) = 16417.23$, $p < .001$, partial $\eta^2 = .09$, moderate effect size. Concerning the 2014-2015 school year, a statistically significant difference was again yielded on the STAAR Reading Reporting Category 1 by student economic status, $F(2, 353135) = 19773.84$, $p < .001$, partial $\eta^2 = .10$, moderate effect size. On the STAAR Reading Reporting Category 1, the effect sizes for the statistically significant differences on the STAAR Reading Reporting Category 1 by student economic status were moderate for all three school years.

Following the three follow-up ANOVA procedures, Scheffe' post hoc procedures were conducted to ascertain which economic status pairings were statistically significantly different. The Not Poor, Moderately Poor, and Very Poor groups were all determined to have statistically significant STAAR Reading Reporting Category 1 scores from each other in all school years. Regarding the 2012-2013 school year, students who were Not Poor had a statistically significantly higher average raw score, 0.76 points

higher, than students who were Moderately Poor and 1.38 points higher than the average

raw score of students who were Very Poor. Students who were Moderately Poor had a

higher average raw score that was 0.62 points higher than the Very Poor group.

Concerning the 2013-2014 school year, students who were Not Poor had a statistically

significantly higher average raw score, 0.85 points higher, than students who were

Moderately Poor and 1.41 points higher than students who were Very Poor. Students

who were Moderately Poor had a statistically significantly higher average raw score, 0.56

points higher, than students who were Very Poor. With respect to the 2014-2015 school

year, students who were Not Poor had a statistically significantly higher average raw

score, 0.98 points higher, than students who were Moderately Poor and 1.64 points higher

than students who were Very Poor. Students who were Moderately Poor had a

statistically significantly higher average raw score, 0.86 points higher, than students who

were Very Poor.

In all three school years, a clear stair-step effect (Carpenter, Ramirez, & Severn,

2006) was present on the STAAR Reading Reporting Category 1. The greater the degree

of poverty, the lower the reading performance was on the Reading Reporting Category 1.

In all three school years, students who were in the Not Poor group had the best

performance, followed by students who were Moderately Poor, and then by students in

the Very Poor group. Revealed in Table 2.1 are the descriptive statistics for this analysis.

Insert Table 2.1 about here

Reading Reporting Category 2 (Understanding Literary Texts) Results Across All

Three School Years

Regarding the 2012-2013 school year, a statistically significant difference was yielded on the STAAR Reading Reporting Category 2 by student economic status, $F(2, 338014) = 255626.96$, $p < .001$, partial $\eta^2 = .10$, moderate effect size. Concerning the 2013-2014 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 2 by economic status, $F(2, 341365) = 19056.58$, $p < .001$, partial $\eta^2 = .10$, moderate effect size. With respect to the 2014-2015 school year, a statistically significant difference was again yielded on the STAAR Reading Reporting Category 2 by economic status, $F(2, 353135) = 17973.50$, $p < .001$, partial $\eta^2 = .09$, moderate effect size. On the STAAR Reading Reporting Category 2, the effect sizes for the statistically significant differences by student economic status were in the moderate range for all three school years.

Next, Scheffe' post hoc procedures were conducted to determine which economic status pairings were statistically significantly different. The Not Poor, Moderately Poor, and Very Poor student groups were all determined to have statistically significant STAAR Reading Reporting Category 2 scores from each other in all three school years. Concerning the 2012-2013 school year, students who were Not Poor had a statistically significantly higher average raw score, 1.53 points higher, than students who were Moderately Poor and 2.58 points higher than students who were Very Poor. Similarly, students who were Moderately Poor had a statistically significantly higher average raw score, 1.05 points higher, than students who were Very Poor. Regarding the 2013-2014 school year, students who were Not Poor had a statistically significantly higher average

raw score, 1.54 points higher, than students who were Moderately Poor and 2.57 points higher than students who were Very Poor. Students who were Moderately Poor had a statistically significantly higher average raw score, 1.03 points higher, than students who were Very Poor. With respect to the 2014-2015 school year, students who were Not Poor had a statistically significantly higher average raw score, 1.43 points higher, than students who were Moderately Poor and 2.57 points higher than students who were Very Poor. Students who were Moderately Poor had a statistically significantly higher average raw score, 1.14 points higher, than students who were Very Poor.

Statistically significant differences, as revealed by the post hoc procedures, were present by degree of economic disadvantage for all three school years on the STAAR Reading Reporting Category 2. A stair-step effect (Carpenter et al., 2006) was clearly evident. Students who were in the Not Poor group had the highest performance, followed by students who were in the Moderately Poor group, and then by students in the Very Poor group. Readers are referred to Table 2.2 for the descriptive statistics of this analysis.

Insert Table 2.2 about here

Reading Reporting Category 3 (Understanding Informational Texts) Results Across All Three School Years

With respect to the 2012-2013 school year, a statistically significant difference on the STAAR Reading Reporting Category 3 by student economic status was yielded, $F(2, 338014) = 275727.73$, $p < .001$, partial $\eta^2 = .11$, moderate effect size. Regarding the

2013-2014 school year, a statistically significant difference was revealed in the Reading

Reporting Category 3 by student economic status, $F(2, 341365) = 16187.38$, $p < .001$,

partial $\eta^2 = .09$, moderate effect size. Concerning the 2014-2015 school year, a

statistically significant difference was again yielded in the Reading Reporting Category 3

by student economic status, $F(2, 353135) = 19099.04$, $p < .001$, partial $\eta^2 = .10$, moderate

effect size. On the STAAR Reading Reporting Category 3, the effect size for these

statistically significant differences by student economic status was moderate for all three

school years.

Scheffe' post hoc procedures were conducted to determine which economic status

pairings were statistically significantly different. The Not Poor, Moderately Poor, and

Very Poor student groups were all determined to have statistically significant STAAR

Reading Reporting Category 3 scores from each other in all three school years.

Regarding the 2012-2013 school year, students who were Not Poor had a statistically

significantly higher average raw score, 1.57 points higher, than students who were

Moderately Poor and 2.67 points higher than students who were Very Poor. Moreover,

students who were Moderately Poor had a statistically significantly higher average raw

score, 1.10 points higher, than students who were Very Poor. Concerning the 2013-2014

school year, students who were Not Poor had a statistically significantly higher average

raw score, 1.32 points higher, than students who were Moderately Poor and 2.21 points

higher than students who were Very Poor. Similarly, students who were Moderately

Poor had a statistically significantly higher average raw score, 0.89 points higher, than

students who were Very Poor. With respect to the 2014-2015 school year, students who

were Not Poor had a statistically significantly higher average raw score, 1.42 points

higher, than students who were Moderately Poor and 2.50 points higher than students who were Very Poor. Students who were Moderately Poor had a statistically significantly higher average raw score, 1.08 points higher, than students who were Very Poor.

A stair-step effect (Carpenter et al., 2006) was present for student performance on the STAAR Reading Reporting Category 3. The greater the degree of poverty, the lower the reading performance was on the Reading Reporting Category 3. Students who were Very Poor had statistically significantly lower average STAAR Reading Reporting Category 3 scores than students who were Moderately Poor, and students who were Moderately Poor had statistically significantly lower average reading scores than students who were Not Poor. Readers are referred to Table 2.3 for the descriptive statistics of this analysis.

Insert Table 2.3 about here

Results for the Level II Final Satisfactory Performance Analyses Over Time

Student performance on the STAAR Reading Level II Final Satisfactory standard was examined next through the use of Pearson chi-square procedures. This statistical procedure was the most appropriate statistical procedure to use because dichotomous data were present for the Level II Final Satisfactory Performance Standard (i.e., met or did not meet this standard) and categorical data were present for student economic status. As such, the chi-square is the preferred statistical procedure when both variables are

categorical (Field, 2009). Because a large sample size was present, the assumptions for utilizing a chi-square were met.

Concerning the Level II Final Satisfactory Performance Standard by economic status, the result for the 2012-2013 school year was statistically significant, $\chi^2(2) =$ 28,391.06, $p < .001$. The effect size revealed for this finding, Cramer's V, was small, .28 (Cohen, 1988). Statistically significantly higher percentages of students who were Not Poor met this Level II Final Satisfactory Performance Standard than students in the Moderately Poor group. The Not Poor group had 19.3% more students who met this standard than the Moderately Poor group of students and 29.4% more students who met this standard than the Very Poor group of students.   The Moderately Poor group had 10.1% more students who met this standard than the Very Poor group of students. Table 2.4 contains the frequencies and percentages for the 2012-2013 school year.

Insert Table 2.4 about here

With regard to the 2013-2014 school year, the result was statistically significant, $\chi^2(2) = 26,662.08$, $p < .001$. The effect size yielded for this finding, Cramer's V, was small, .28 (Cohen, 1988).   Statistically significantly higher percentages of students who were Not Poor met this Level II Final Satisfactory Performance Standard than students in the Moderately Poor group. The Not Poor group had 18.7% more students who met this standard than the Moderately Poor group of students and 27.9.2% more students who met this standard than the Very Poor group of students.   The Moderately Poor group had

9.2% more who met this standard than the Very Poor group of students. Table 2.4

contains the frequencies and percentages for the 2013-2014 school year.

Insert Table 2.4 about here

Concerning the 2014-2015 school year, a statistically significant difference was

present, $\chi^2(2) = 34,027.07$, $p < .001$. The effect size yielded for this finding, Cramer's V,

was moderate, .31 (Cohen, 1988). Statistically significantly higher percentages of

students who were Not Poor met this Level II Final Satisfactory Performance Standard

than students in the Moderately Poor group. The Not Poor group had 19.7% more

students who met this standard than the Moderately Poor group of students and 31.9%

more students who met this standard than the Very Poor group of students. The

Moderately Poor group had 12.2% more who met this standard than the Very Poor group

of students. Table 2.4 contains the frequencies and percentages for the 2014-2015 school

year.

Insert Table 2.4 about here

A star-step effect (Carpenter et al., 2006) was clearly evident in the percentages of

students who met this standard in all three school years. Statistically significantly greater

percentages of students who were Not Poor met the Level II Final Satisfactory

Performance Standard than students who were in the Moderately Poor group or in the

Very Poor group. Differences in percentages between the Not Poor and the Moderately

Poor groups of students not meeting the Level II Performance Standard were 19.3%,

18.7%, and 19.7%, respectively for the three school years. Similarly, differences in

percentages between the Moderately Poor and Very Poor groups of students not meeting

the Level II Performance Standard were 10.1%, 9.2%, and 12.2% respectively for the

three school years. Readers are referred to Table 2.4 for the descriptive statistics for this

analysis.

In examining the reading performance of Grade 4 students in Texas across the

three years of data that were analyzed herein, consistent trends in scores by economic

status were identified. In each Reporting Category and in all three years investigated, the

Not Poor group had statistically significantly higher reading scores than students in either

the Moderately Poor group or in the Very Poor group. In addition, the same trends were

present in all three years regarding the Level II Satisfactory Performance Standard by

student economic status in that higher percentages of students in the Not Poor group met

this standard than students in either the Moderately Poor group or in the Very Poor group.

Similarly, a higher percentage of students in the Moderately Poor group met this reading

standard than students in the Very Poor group. These trends are depicted in Figures 2.1

through 2.4.

Insert Figures 2.1 through 2.4 about here

Discussion

Analyzed in this investigation was the extent to which differences were present in

the reading performance of Texas Grade 4 students by their economic status. Three years

of statewide data on the three Grade 4 STAAR Reading Reporting Categories were examined for the Not Poor, Moderately Poor, and Very Poor groups. Statistically significant results were present in all three school years. Following these statistical analyses, the Level II Final Satisfactory Performance Standard by economic status was examined and determined to yield statistically significant results in all three school years.

Connections to Existing Literature

As indicated by the review of literature, inequities in the income achievement gap have widen over the last several decades (McGown, 2016). Vast disparities exist between students from impoverished backgrounds and students from affluent backgrounds (McGown, 2016). In a recent Texas statewide investigation, McGown (2016) examined the reading performance of Grade 3 students on the STAAR Reading exam. In her multiyear analysis, she documented the presence of statistically significant differences in all three STAAR Reading Reporting categories, as well as on the percentages of students who met the passing standard on this exam, as a function of student economic status. In her investigation, as well as in this article, a clear stair-step effect (Carpenter et al., 2006) was established in student reading performance. The greater the degree of poverty, the greater the achievement gaps were in student reading performance.

The connection between poverty and poor basic reading skills has also been examined (Garrett-Peters et al., 2016). According to Tran, Luchters, and Fisher (2017), children living in poverty are at in the most disadvantaged position in society, therefore, they fail to reach their developmental potential. In this multiyear analysis, students who were in the Very Poor group consistently had the poorest reading performance. . Results

from this research investigation are consistent with the literature regarding poverty and

academic performance in reading. As established by Conradi, Amendum, and Liebfreund

(2016) children from high-poverty backgrounds read at a lower proficiency level than

their peers. In addition, Jones, Ostojic, Menard, Picard, and Miller (2017) documented

that poverty is the strongest predictor of learning challenges and poor academic outcomes

for children. When children live in poverty, they simply fail to make parallel gains when

compared to their peers in a more affluent background (Jones et al., 2017). Garrett-Peters

et al. (2016) determined that children living in poverty exhibit poor cognitive and

language development skills that hinder their acquisition of vital basic reading skills.

Due to their lack of basic reading skill acquisition, children below the poverty line do not

achieve at adequate levels (Stinnett, 2011).

Implications for Policy and Practice

Based on the analysis of three years of Texas statewide data, several implications

for policy and for practice can be recommended. First, additional funding needs to be

made available to school districts and school campuses that have students who are

economically disadvantaged. The additional funding can be used to provide educational

support and resources for students in poverty. Therefore, if students have not met the

passing standard on the Grade 3 STAAR Reading exam, a specific educational plan

should be established to prevent them from repeating the same performance in Grade 4.

Third, funding should be provided for full-day pre-kindergarten programs which would

assist in providing the early literacy foundation that is essential for students to develop as

proficient readers. Fourth, school districts should provide professional development that

would assist teachers in educating this population of students. Additional funds and

collaborative efforts among the federal, state, and local educational agencies will support these efforts and close the achievement gap between the economic groups analyzed.

Recommendations for Future Research

Given the results of this empirical multiyear investigation, several recommendations for future research can be made. A first recommendation would be for researchers to examine the connection between economic status and reading performance at other grade levels. In this investigation, only the reading performance of Grade 4 students was addressed. For that reason, researchers are encouraged to examine the reading performance of students in middle school and high school. Second, researchers should also examine reading achievement by gender and ethnicity/race to determine the degree to which these demographic characteristics are related to student reading performance. In this study, only the relationship between student economic status and reading achievement was addressed. Third, researchers should determine if differences are present in other subjects such as mathematics and writing. The focus of this study was solely on reading. Grade 4 students are also required by the state of Texas to complete the STAAR Mathematics and Writing assessments. Fourth, researchers should analyze reading performance by economic status in other states. Only data on the students in Texas were examined in this study. The extent to which the results of this study can be generalized to other states is unknown. Fifth, to analyze trends over several years, researchers are encouraged to conduct longitudinal studies that span from Kindergarten through Grade 12. A study of this magnitude will allow researchers to connect economic status with student achievement in multiple grade levels. Last, researchers are also encouraged to conduct mixed and qualitative research studies to

provide meaningful data that policymakers and educators can use in making informed decisions regarding educating students in poverty.

Conclusion

The purpose of this research investigation was to determine the degree to which differences were present in the reading performance of Texas Grade 4 students as a function of their economic status. Through the analysis of three years of Texas statewide data, statistically significant differences were revealed in the reading performance of students who were Not Poor, Moderately Poor, and Very Poor. A stair-step effect (Carpenter et al., 2006) was clearly established in all three school years. Students who were Not Poor had better reading skills than students who were Moderately Poor, and students who were Moderately Poor had better reading skills than students who were Very Poor.

References

Barker, P. E., & Coley, R. T. (2007). *The family: America's smallest school*. Retrieved from https://eric.ed.gov/?id=ED498878

Carpenter, D., Ramirez, A., & Severn, L. (2006). Gap or gaps – Challenging the singular definition of the achievement gap. *Education and Urban Society, 39*(1), 113-127.

Center for Public Policy Priorities. (2016). *State of Texas children 2016 race and ethnicity*. Retrieved from https://forabettertexas.org/sotc2016/kc16_web.pdf

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Conradi, K., Amendum, S. J., & Liebfreund, M. D. (2016). Explaining variance in comprehension for students in a high-poverty setting. *Reading & Writing Quarterly, 32*, 427-453. doi:10.1080/10573569.2014.994251

Crosnoe, R., & Cooper, C. E. (2010). Economically disadvantaged children's transitions into elementary school: Linking family processes, school contexts, and educational policy. *American Educational Research Journal*, *47*, 258-291. doi:10.3102/0002831209351564

Dearing, E., Walsh, M. E., Sibley, E., Lee-St. John, T., Foley, C., & Raczek, A. E. (2016). Can community and school-based supports improve the achievement of first-generation immigrant children attending high-poverty schools? *Child Development*, *87*, 883-897.

Duncan, G. J., Claessens, A., Huston, A. C., Pagani, L. S., Engel, M., Sexton, H., & ... Duckworth, K. (2007). School readiness and later achievement. *Developmental Psychology*, *43*, 1428-1446. doi:10.1037/0012-1649.43.6.1428

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Thousand Oaks, CA: Sage.

Garrett-Peters, P. T., Mokrova, I., Vernon-Feagans, L., Willoughby, M., & Pan, Y. (2016). The role of household chaos in understanding relations between early poverty and children's academic achievement. *Early Childhood Research Quarterly*, *37*, 16-25. doi:10.1016/j.ecresq.2016.02.004

Harris, L., & Slate, J. R. (2017). Differences in reading by the economic status of Grade 3 Black boys and girls. *Annals of Language and Literature, 2*, 1-8.

Herbers, J. E., Cutuli, J. J., Supkoff, L. M., Heistad, D., Chan, C., Hinz, E., & Masten, A. S. (2012). Early reading skills and academic achievement trajectories of students facing poverty, homelessness, and high residential mobility. *Educational Researcher*, *41*(9), 366-374. doi:10.3102/0013189X12445320

Hernandez, D. J. (2011). *Double jeopardy: How third-grade reading skills and poverty influence high school graduation*. Albany, NY: Annie E. Casey Foundation. Retrieved from https://files.eric.ed.gov/fulltext/ED518818.pdf

Johnson, R. B., & Christensen, L. B. (2012). *Educational research: Quantitative, qualitative, and mixed approaches* (4th ed.) Los Angeles, CA: Sage.

Jones, G., Ostojic, D., Menard, J., Picard, E., & Miller, C. J. (2017). Primary prevention of reading failure: Effect of universal peer tutoring in the early grades. *Journal of Educational Research*, *110*(2), 171-176. doi:10.1080/00220671.2015.1060929

McGown, J. A. (2016). *Differences in reading performance of Texas elementary school students as a function of economic status, gender, and ethnicity/race: A multiyear statewide study*. Doctoral Dissertation, Sam Houston State University, Huntsville, TX.

National Center for Children in Poverty. (2017). *Putting research to work for children and families.* Retrieved from http://www.nccp.org/profiles/TX_profile_7.html

National Center for Education Statistics. (2017). *Characteristics of children's families.* Retrieved from https://nces.ed.gov/programs/coe/indicator_cce.asp

Olszewski-Kubilius, P., & Corwith, S. (2018). Poverty, academic achievement, and giftedness: A literature review. *Gifted Child Quarterly*, *62*(1), 37-55. doi:10.1177/0016986217738015

PEIMS Data Standards. (2018). *Public Education Information Management System Overview.* Retrieved from https://tea.texas.gov/Reports_and_Data/Data_Submission/PEIMS/PEIMS_-_Overview/

Reardon, S. F., Valentino, R. A., & Shores, K. A. (2012). Patterns of literacy among U.S. students. *The Future of Children, 22*(2), 17-37. doi:10.1353/foc.2012.0015

Stinnett, M. (2011). Research in reading. *Illinois Reading Council Journal*, *42*(3), 65-69.

Texas Classroom Teacher Association. (2014). *Teachers deal with the prevalence of poverty.* Retrieved from https://tcta.org/node/13805-teachers_deal_with_the_prevalence_of_poverty

Texas Education Agency. (2011). *STAAR Reading Resources*. Retrieved from https://tea.texas.gov/student.assessment/staar/reading/

Texas Education Agency. (2013)*. Appendix F Supplemental Information for Reporting Ethnicity and Race Data Reporting*. Retrieved from tea.texas.gov/WorkArea/DownloadAsset.aspx?id=2147507471

Texas Education Agency. (2016a). *STAAR Performance Level Descriptors*. Retrieved

    from https://tea.texas.gov/student.assessment/staar/performance-standards/

Texas Education Agency. (2016b). *Student Assessment Division Frequently Asked*

    Questions. Retrieved from https://tea.texas.gov/student.assessment/staar/

Texas Education Agency. (2017). *The New STAAR Report Card Presentation.* Retrieved

    from

    http://www.stamford.esc14.net/page/open/1039/0/Introducing%20the%20New%2

    0STAAR%20Student%20Report-Guide%20for%20Parents%201.pdf

Tran, T. D., Luchters, S., & Fisher, J. (2017). Early childhood development: Impact of

    national human development, family poverty, parenting practices and access to

    early childhood education. *Child: Care, Health & Development*, *43*, 415-426.

    doi:10.1111/cch.12395

Table 2.1

Descriptive Statistics for the STAAR Grade 4 Reporting Category 1 Scores by Student

Economic Status for the 2012-2013, 2013-2014, and 2014-2015 School Years

Reporting Category 1	*n*	*M*	*SD*
2012-2013			
Not Poor	140,077	7.82	1.94
Moderately Poor	25,172	7.06	2.17
Very Poor	172,768	6.44	2.30
2013-2014			
Not Poor	142,845	7.44	2.09
Moderately Poor	25,177	6.59	2.20
Very Poor	173,346	6.03	2.27
2014-2015			
Not Poor	151,053	7.07	2.31
Moderately Poor	24,392	6.09	2.37
Very Poor	177,693	5.43	2.41

Table 2.2

Descriptive Statistics for the STAAR Grade 4 Reporting Category 2 Scores by Student

Economic Status for the 2012-2013, 2013-2014, and 2014-2015 School Years

Reporting Category 2	*n*	*M*	*SD*
2012-2013			
Not Poor	138,884	12.71	3.37
Moderately Poor	24,729	11.39	3.59
Very Poor	177,686	10.41	3.75
2013-2014			
Not Poor	142,845	13.06	3.56
Moderately Poor	25,177	11.52	3.73
Very Poor	173,346	10.49	3.78
2014-2015			
Not Poor	151,053	13.58	3.67
Moderately Poor	24,392	12.15	3.90
Very Poor	177,693	11.01	4.05

Table 2.3

Descriptive Statistics for the STAAR Grade 4 Reporting Category 3 Scores by Student

Economic Status for the 2012-2013, 2013-2014, and 2014-2015 School Years

Reporting Category 3	*n*	*M*	*SD*
2012-2013			
Not Poor	140,077	11.65	3.44
Moderately Poor	25,172	10.08	3.62
Very Poor	172,768	8.98	3.64
2013-2014			
Not Poor	142,845	11.34	3.33
Moderately Poor	25,177	10.02	3.49
Very Poor	173,346	9.13	3.54
2014-2015			
Not Poor	151,053	11.37	3.54
Moderately Poor	24,392	9.95	3.68
Very Poor	177,693	8.87	3.74

Table 2.4

Frequencies and Percentages for the Grade 4 STAAR Reading Level II Satisfactory

Performance Standard by Degree of Economic Disadvantage for the 2012-2013, 2013-

2014, and 2014-2015 School Years

	Met Standard		Did Not Meet Standard	
School Year	*n*	%	*n*	%
2012-2013				
Not Poor	78,214	55.4	63,088	44.6
Moderately Poor	9,184	36.1	16,276	63.9
Very Poor	45,511	26.0	129,410	74.0
2013-2014				
Not Poor	75,329	52.3	68,743	47.7
Moderately Poor	8,556	33.6	16,898	66.4
Very Poor	42,811	24.4	132,853	75.6
2014-2015				
Not Poor	87,049	58.2	62,572	41.8
Moderately Poor	9,279	38.5	14,823	61.5
Very Poor	46,101	26.3	129,205	73.7
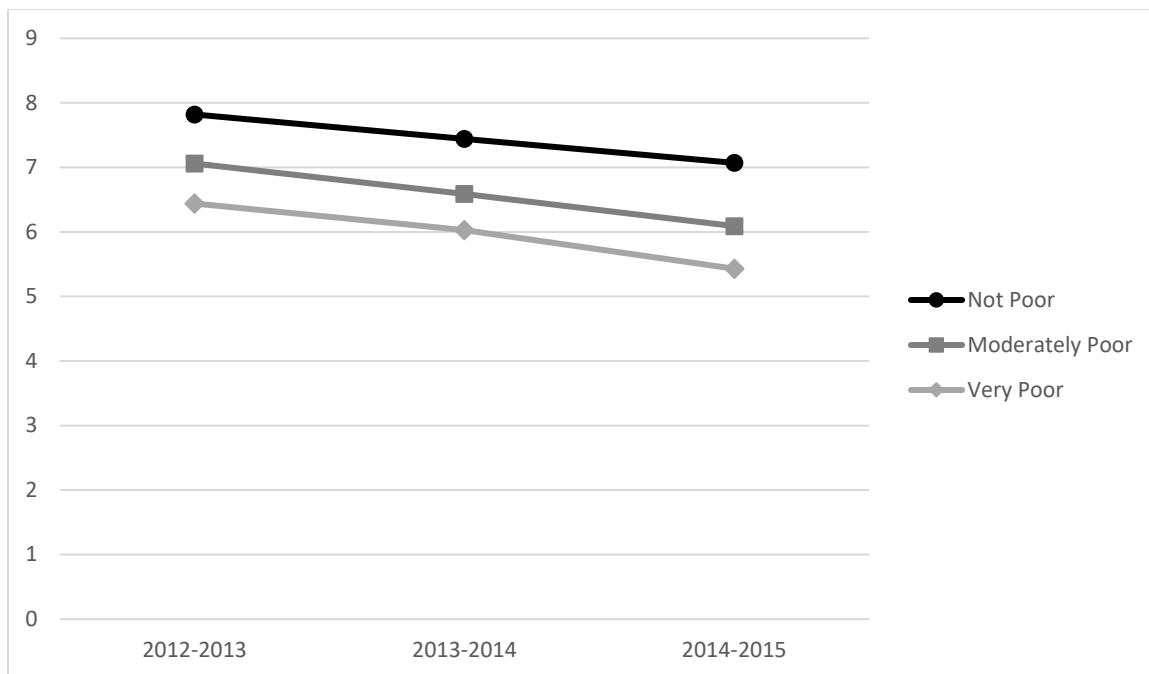
Figure 2.1. Average scores by student economic status for the STAAR Grade 4 Reporting Category 1 for the 2012-2013, 2013-2014, and 2014-2015 school years.
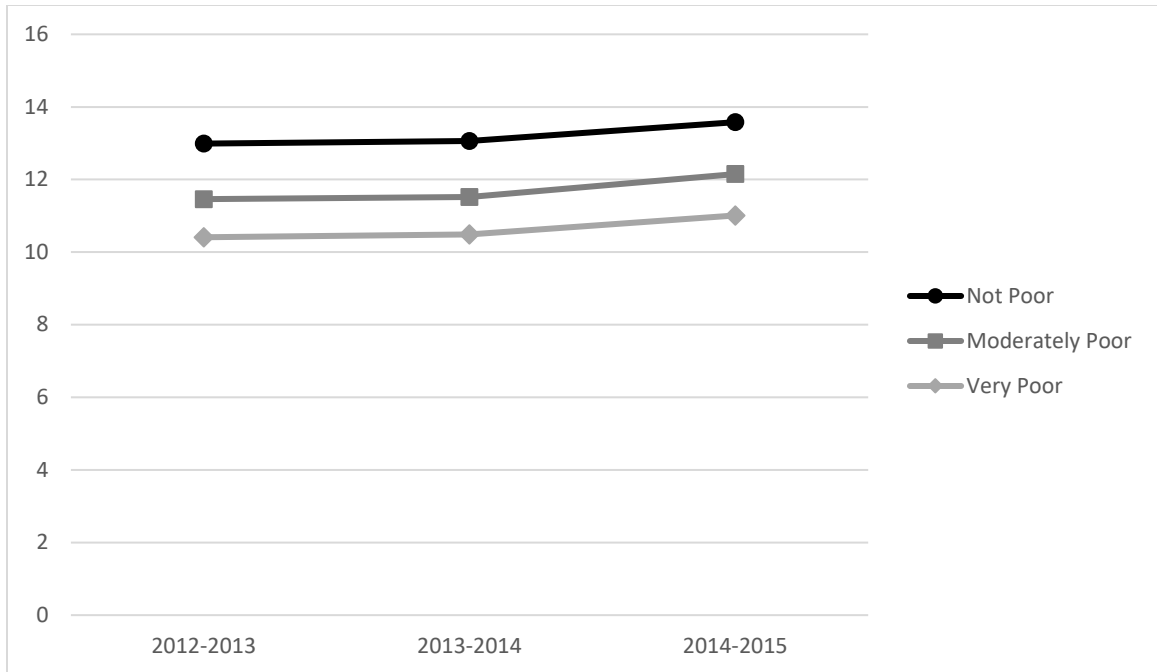
Figure 2.2. Average scores by student economic status for the STAAR Grade 4
Reporting Category 2 for the 2012-2013, 2013-2014, and 2014-2015 school years.
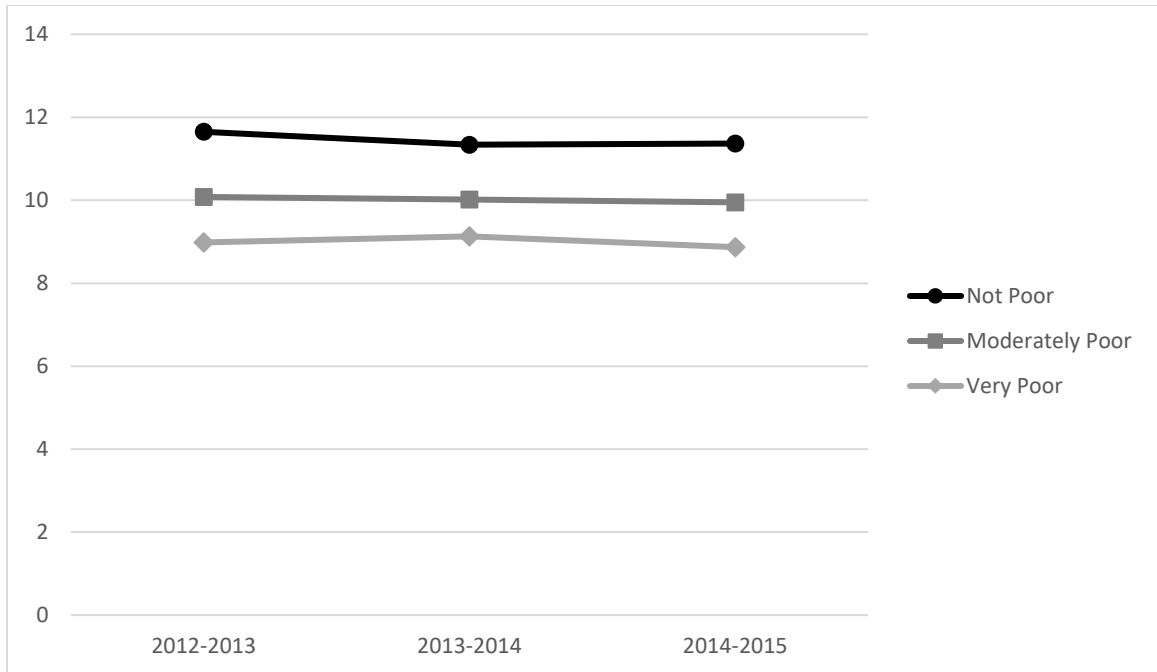
Figure 2.3. Average scores by student economic status for the STAAR Grade 4 Reporting Category 3 for the 2012-2013, 2013-2014, and 2014-2015 school years.
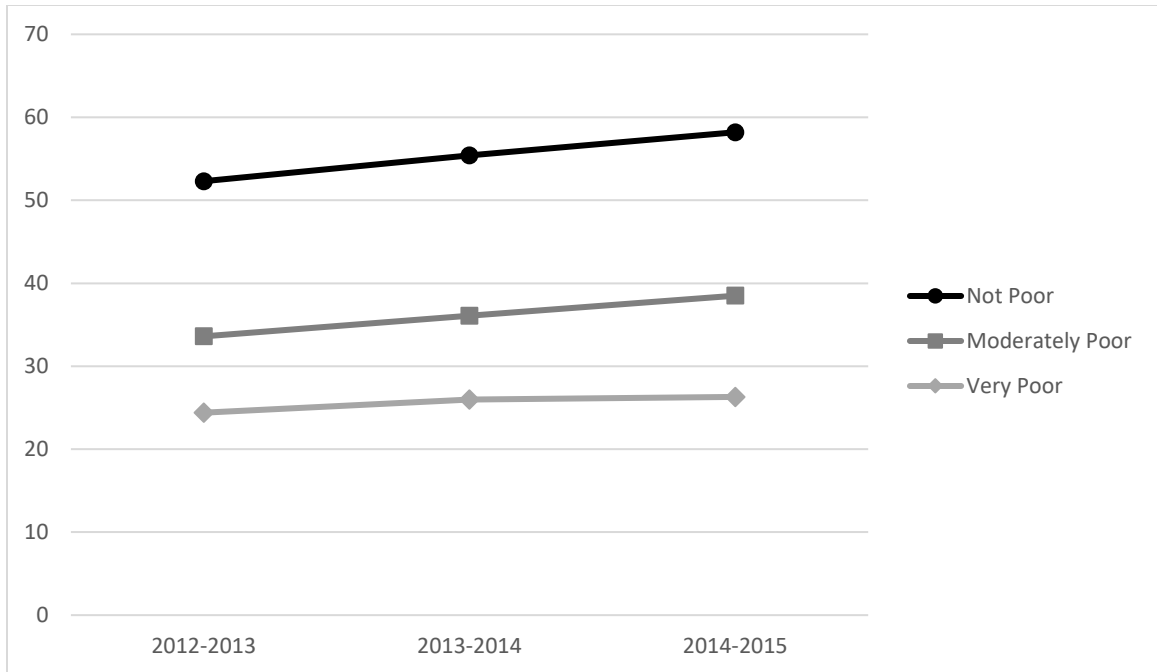
Figure 2.4. Grade 4 STAAR Reading Level II Satisfactory Performance Standard by student economic status for the 2012-2013, 2013-2014, and 2014-2015 school years.

CHAPTER III

DIFFERENCES IN THE READING PERFORMANCE OF TEXAS GRADE 4 GIRLS

AND BOYS: A MULTIYEAR, STATEWIDE INVESTIGATION

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

Abstract

In this investigation, the degree to which differences were present in reading between Grade 4 Texas boys and girls was examined. Data, obtained from the Texas Education Agency Public Education Information Management System for all Grade 4 boys and girls in Texas who took the State of Texas Assessment of Academic Readiness Reading exam, were analyzed for the 2012-2013, 2013-2014, and 2014-2015 school years. In all three years analyzed, statistically significant differences were established in not only overall reading performance, but also in all three Reading Reporting categories. A clear stair-step effect was present; girls outperformed boys in all three Reading Reporting categories as well as had higher percentages who met the Level II Final Satisfactory Standard. Future research recommendations and implications for policy and practice are suggested.

Keywords: Gender, STAAR Reading, Texas, Grade 4, Level II Final Satisfactory Standard and Literacy.

DIFFERENCES IN THE READING PERFORMANCE OF TEXAS GRADE 4

GIRLS AND BOYS: A MULTIYEAR, STATEWIDE INVESTIGATION

Gender differences in reading have been studied for centuries (Ayers, 1909). With reading being essential for academic success, it is apparent why researchers seek to understand the reading proficiency levels of girls and boys. Not only has the topic of gender differences in reading been examined in the United States, but it has been investigated in numerous other countries as well. This concern is one that spans across the globe due to similar gender differences in reading performance. In a recent international study, Mullis, Martin, Foy, and Hooper (2017), established that, in reading, girls had higher average scores than did boys in 48 of the 50 countries that participated in the 2016 Progress in International Reading Literacy Study. Furthermore, boys did not have higher reading achievement scores than girls in any of the 50 countries (Mullis et al., 2017). Strong reading comprehension and critical thinking skills are paramount in competing for jobs in the 21st century. All students, regardless of gender, must acquire such literacy skills early in their education (McGown, 2016).

In an analysis of gender differences from elementary through high school, Klecker (2006) examined Grade 4, 8, and 12 students' National Assessment of Educational Progress test scores across the 1992, 1994, 1998, 2000, 2002, and 2003 school years. Grade 4 girls outperformed boys in reading in all six years. Klecker (2006) reported, similar to Grade 4 results, that Grade 8 girls had higher reading scores than Grade 8 boys. Grade 12 results were congruent with Grade 4 and Grade 8 results in that Grade 12 girls had higher reading scores than Grade 12 boys.

In a similar study, Below, Skinner, Fearrington, and Sorrell (2010) investigated the degree to which gender differences were present in early literacy of kindergarten through Grade 5 students. Girls scored higher than boys on all four pre-literacy skills (Below et al., 2010). As such, findings were in agreement with previous researchers (e.g., Stinnett, 2011) that girls enter school with more advanced literacy skills than boys. Specifically established by Stinnett (2011) was that girls have stronger reading skill development entering kindergarten than do boys. From Kindergarten to Grade 5, statistically significant differences exist in reading performance between girls and boys that favored girls.

In another international study, the reading achievement of Grade 4 girls and boys across participating G-20 countries was examined (National Center for Education Statistics, 2015). All G-20 countries had higher percentages of Grade 4 girls outscore Grade 4 boys in reading, with differences ranging from 8 percentage points in France to 25 percentage points in Saudi Arabia (National Center for Education Statistics, 2015). In the United States, the difference between girls and boys was 13 percentage points. Girls outscored boys in reading at every grade level and at every age analyzed (National Center for Education Statistics, 2015).

In a recent investigation directly related to this article, McGown (2016) analyzed the degree to which gender differences were present in the reading performance of Texas Grade 3 students. She examined the State of Texas Assessment of Academic Readiness (STAAR) Reading assessment for three years. Regarding Reading Reporting Category 1, 2, and 3, Grade 3 girls had statistically significantly higher test scores than Grade 3 boys in all three of the school years examined. Concerning the Level II Final Satisfactory

Performance Standard for girls and boys, results for all three school years were statistically significant. Grade 3 girls had statistically significantly higher percentages who met the Level II Final Satisfactory Performance Standard than Grade 3 boys in all three school years. In her investigation, Grade 3 girls had statistically significantly better reading performance in all of the STAAR Reading measures and in all three school years of data she analyzed.

In another recent study conducted in Texas, Schleeter (2017) examined the degree to which differences were present between Grade 3 English Language Learner boys and girls in their reading achievement. Participants in this study were Grade 3 English Language Learner boys and girls who took the State of Texas Assessment of Academic Readiness Reading assessments in the 2012-2013, 2013-2014, and 2014-2015 school year. A total of three years of STAAR Reading data were examined for English Language Learner girls and boys who were enrolled in Grade 3. In each year, English Language Learner girls outperformed English Language Learner boys (Schleeter, 2017). According to Schleeter (2017), the gender performance gap in the met standard category (Phase-in 1, Phase-in 2, and Final Satisfactory) was 5.9%. In the Level III Advanced Performance category, English Language Learner girls outperformed English Language Learner boys by an average of 2.7% (Schleeter, 2017). English Language Learner girls outperformed English Language Learner boys in every category measured. Of particular importance are reading disparities in high school. As noted by Wright and Slate (2015), Texas high school girls continue to outperform boys on state-mandated reading exams.

"For the last 100 years, researchers have expressed concern over a male deficit in reading achievement" (Stinnett, 2011, p. 72). Similarly, Klecker (2006) noted the

positive relationship between being female and having higher reading scores than male students. As early as 1909, Ayers communicated a concern regarding a deficit with boys in reading. Some researchers (e.g., Northwestern University, 2008) have argued that girls have superior language abilities to boys. Concerning gender inequality, researchers (Catsambis et al., 2012; Condron, 2007; Tach & Farkas, 2006) have postulated the understanding that differences in reading performance between girls and boys exists; however, the underpinnings of that existence needs more exploring. What is certain is that for all students, regardless of gender, to compete in the 21st century; they must acquire proficient reading skills before Grade 3.

Statement of the Problem

Educators around the world aim to provide students with a solid reading foundation, regardless of gender. However, only a third of children in the United States read at grade level (Sanchez, 2018). Although a strong emphasis in the No Child Left Behind Act was on improving reading performance in early elementary, disaggregation of data by gender was not mandated in this legislative act. Therefore, gaps in the academic performance of boys and girls were and continue to not be monitored as closely as are other achievement gaps (Klecker, 2006). Only by analyzing data by gender will educational leaders become fully cognizant of the disparity in reading performance between girls and boys and implement strategies to close the achievement gap. However, as a result of this exclusion, the newly passed, Every Student Succeeds Act (2015) maintains the requirements for data disaggregation for accountability purposes but has included gender as a subgroup. As identified by Sadker and Zittleman (2005), girls receive better grades on their report card, perform higher than boys on standardized

assessments, and are less likely to exhibit behavior challenges. Accordingly, it is imperative to analyze gender differences to inform educators on how to address these types of disparities. For this reason, the focus of this study was on Grade 4 girls and boys and the degree to which gender is related to reading performance on the state-mandated reading assessment in Texas.

Purpose of the Study

The purpose of this article was to examine the extent to which boys and girls differed in their reading achievement of Texas Grade 4 students. In this article, the degree to which gender differences existed in the reading performance of Texas Grade 4 students was addressed. For each of these studies, archival data from the Texas Education Agency Public Education Information Management System were analyzed. An analysis of academic performance for the 2012-2013, 2013-2014, and 2014-2015 school years on the state-mandated reading assessments for Texas Grade 4 students was conducted to determine the degree to which trends were present in the reading performance of boys and girls.

Significance of the Study

As outlined earlier, gender differences in reading achievement have been explored in great detail in the United States (Moore et al., 2012; Sadker & Zittleman 2005; Sanchez, 2018). Specifically, the underperformance of boys, both nationally and internationally, has raised much concern. Despite the numerous research findings regarding inequities in gender performance in reading, little has been implemented to make substantial improvement. Because the focus of the No Child Left Behind Act (2001) was not centered around monitoring student performance by gender, few

researchers (e.g., McGown, 2016; Schleeter, 2017) have examined the relationship between gender and reading achievement as measured by the State of Texas Assessment of Academic Readiness. Unfortunately, limited progress has been made in closing the gender gap in reading.

Additionally, the reading performance of Grade 4 students by gender as measured by the STAAR assessment has not been previously examined. Therefore, this study is relevant and of utmost importance. In an era where the stakes are high for standardized testing and the findings from multiple studies (e.g., Below et al., 2010; Klecker, 2006; McGown, 2016) are that girls outperform boys in reading both nationally and internationally, it is imperative that educators identify methods for ensuring the success of all students by closing the achievement gaps. Disparities have been documented for centuries (Ayers, 1909) which is why the time to address differences in gender performance is now. Educators must analyze the differences in the performance of girls and boys on standardized assessments and use the information obtained in equipping the schools and districts. Therefore, the findings of this study may be helpful to educational leaders and policymakers.

Research Questions

In this study, the following overarching research question was addressed: What is the difference in reading performance between Texas Grade 4 boys and girls? Specific subquestions under this overarching research question were: (a) What is the difference between Texas Grade 4 boys and girls in their understanding across genres?; (b) What is the difference between Texas Grade 4 boys and girls in their comprehension and analysis of literary texts?; (c) What is the difference between Texas Grade 4 boys and

girls in their comprehension and analysis of informative texts?; (d) What is the difference between Texas Grade 4 boys and girls in their performance on the Level II Final Satisfactory standard?; and (e) What is the degree to which trends are present in reading for Texas Grade 4 boys and girls? The first four research subquestions were addressed for three school years, whereas the last research question involved a comparison of results across all three school years.

Method

Research Design

The research design in this study was a quantitative, causal comparative, non-experimental research design (Johnson & Christensen, 2012). Researchers use causal comparative designs to find relationships between independent and dependent variables after the action has already taken place (Johnson & Christensen, 2012). In this investigation, the action that has already taken place was the STAAR Reading test that was administered to students in the 2012-2013, 2013-2014, and 2014-2015 school years. The independent variable in this research study was gender and the dependent variables were the three reporting categories (i.e., Reporting Category 1, Reporting Category 2, Reporting Category 3) and the Level II Final Satisfactory Performance Standard from the 2012-2013, 2013-2014, and 2014-2015 STAAR exams.

Instrumentation and Procedures

The data that were utilized in this study were previously obtained from the Texas Education Agency Public Education Information Management System database for the 2012-2013, 2013-2014, and 2014-2015 school years. To obtain the data, a Public Information Request was submitted to and fulfilled by the Texas Education Agency.

Datasets were requested for (a) Texas Grade 4 students, (b) gender, and (c) STAAR Reading Reporting Categories.

Assessed by the STAAR Reading test are three categories for performance. In Reporting Category 1: The student will demonstrate an ability to understand a variety of written texts across reading genres (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 2). Outlined in this category is the focus on the reading and vocabulary development of the student. Students are expected to understand new vocabulary and use it when reading and writing (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 2). In addition, students are expected to identify the meaning of common prefixes and suffixes and know how they change the meaning of roots words (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 2).

In Reporting Category 2: The student will demonstrate an ability to understand and analyze literary texts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 3). Reporting Category 2 is centered around comprehension of a variety of texts drawing on reading strategies (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 3). Students are expected to ask applicable questions, seek clarification, discover facts and details about stories, and support answers with textual evidence (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 4). In addition, students are expected to make inferences and draw conclusions about theme and genre in different cultural, historical, and contemporary contexts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 4). Reporting

Category 2 also measures students' skills on drawing conclusions about the structure and elements of poetry (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 4).

According to The Texas Education Agency, in Reporting Category 3: The student will demonstrate an ability to understand and analyze informational texts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 5). Students are expected to analyze, draw conclusions, and make inferences about the author's purpose in cultural, contemporary, and historical contexts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 5). Similar to Reporting Categories 1 and 2, students are expected to provide evidence from the text to support their understanding.

Each reporting category encompasses Readiness and Supporting Standards (Texas Education Agency The New STAAR Report Card Presentation, 2017, pp. 1-2). The general characteristics of Readiness Standards includes skills that are essential for success in the current grade (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 4). These standards are designed to measure student preparedness for the next grade level. In addition, these standards support college and career readiness benchmarks and measures specific content and concepts. Unlike Readiness Standards, Supporting Standards are introduced in the current grade level but emphasizes subject matter in a subsequent year. This standard addresses more narrowly defined content and concepts. Reporting Category 1 includes five multiple choice questions from both the Readiness and Supporting Standards; Reporting Category 2 contains 15 multiple choice questions from both the Readiness and Supporting Standards;

and Reporting Category 3 includes 14 multiple choice questions also from both the

Readiness and Supporting Standards (Texas Education Agency Student Assessment

Division Frequently Asked Questions, 2016, p. 4). Level II Satisfactory Academic

Performance is the performance category for students who demonstrate some knowledge

of course content but may have a few deficits regarding critical elements. Those critical

elements may require a student to still need additional support to master the objectives.

However, this category of performance constitutes a passing score with some remediation

for the next school year (Texas Education Agency, The New STAAR Report Card

Presentation, 2017, p. 10). Also, students are expected to exhibit "a flexible range of

metacognitive reading skills in both assigned and independent reading to understand an

author's message… as they become self-directed, critical readers" by being evaluated in

their mastery of Figure 19, a TEKS process standard, across the three Reporting

Categories (Texas Education Agency Student Assessment Division Frequently Asked

Questions, 2016). Readers are directed to http.//tea.texas.gov/ for more reliability and

validity information regarding the STAAR test.

Results

Prior to conducting a multivariate analysis of variance (MANOVA), its

underlying assumptions were checked. Specifically examined were data normality,

Box's Test of Equality of Covariance and the Levene's Test of Equality of Error

Variances. The majority of these assumptions were not met, however, the robustness of a

MANOVA procedure made it appropriate to use in this study (Field, 2009). Results of

statistical analyses for Grade 4 boys and girls in Texas who took the STAAR Reading

test will be described by Reading Reporting Category. Results in this study will be

discussed in chronological order from 2012-2013, 2013-2014, and 2014-2015.

Overall Results for the Three School Years

With respect to the 2012-2013 school year, the MANOVA revealed a statistically

significant difference, Wilks' Λ = .98, p < .001, partial η^2 = .02, in overall reading

performance between boys and girls. The effect size for this statistically significant

difference was small (Cohen, 1998). Regarding the 2013-2014 school year, the

MANOVA revealed a statistically significant difference, Wilks' Λ = .99, p < .001, partial

η^2 = .01, in overall reading performance between boys and girls. Using Cohen's (1988)

criteria, the effect size was small. Concerning the 2014-2015 school year, the MANOVA

revealed a statistically significant difference, Wilks' Λ = .99, p < .001, partial η^2 = .01, in

overall reading performance between boys and girls. Based on Cohen's (1988) criteria,

this effect size was small. In all three school years, the effect sizes were small.

Statistically significant differences were yielded in all three school years between boys

and girls in their overall reading performance.

Reading Reporting Category 1 Results (Understanding Across Genres) Across All

Three School Years

Following the overall results of the MANOVA, univariate follow-up Analysis of

Variance (ANOVA) procedures were conducted for each of the three STAAR Reading

Reporting Categories. For the 2012-2013 school year, a statistically significant

difference was yielded between boys and girls in their Reading Reporting Category 1

performance, $F(1, 372796)$ = 1456.96, p < .001, partial η^2 = .01, small effect size (Cohen,

1998). With respect to the 2013-2014 school year, a statistically significant difference

was revealed between boys and girls in their STAAR Reading Reporting Category 1 scores, $F(1, 377768) = 10689.08$, $p < .001$, partial $\eta^2 = .01$, small effect size (Cohen, 1998). Concerning the 2014-2015 school year, a statistically significant difference was again yielded between boys and girls in their STAAR Reading Reporting Category 1 scores, $F(1, 388726) = 8894.84$, $p < .001$, partial $\eta^2 = .004$, a below small effect size (Cohen, 1998). On the STAAR Reading Reporting Category 1, the effect sizes were small for the first two school years and below small in the last school year.

Regarding the 2012-2013 school year, girls had a statistically significantly higher average raw score, 0.13 points higher, than boys. Concerning the 2013-2014 school year, girls also had a statistically significantly higher average raw score, 0.34 points higher, than boys. Consistent with the other two years, in the 2014-2015 school year, girls had a statistically significantly higher average raw score, 0.30 points higher, than boys. In all three school years, girls scored statistically significantly higher on the STAAR Reading Reporting Category 1 than boys. Readers are referred to Table 3.1 for the descriptive statistics for this analysis.

Insert Table 3.1 about here

Reading Reporting Category 2 (Understanding Literary Texts) Results Across All Three School Years

Regarding the 2012-2013 school year, a statistically significant difference was yielded between boys and girls in their Reading Reporting Category 2 performance, $F(1, 372796) = 68991.29$, $p < .001$, partial $\eta^2 = .01$, small effect size (Cohen, 1998).

Concerning the 2013-2014 school year, a statistically significant difference was revealed between boys and girls in their STAAR Reading Reporting Category 2 scores, $F(1, 377768) = 50069.92$, $p < .001$, partial $\eta^2 = .01$, small effect size (Cohen, 1998). With respect to the 2014-2015 school year, a statistically significant difference was again yielded between boys and girls in their STAAR Reading Reporting Category 2 scores, $F(1, 388726) = 80876.90$, $p < .001$, partial $\eta^2 = .01$, small effect size (Cohen, 1998). On the STAAR Reading Reporting Category 2, the effect sizes for the statistically significant differences in the reading performance of boys and girls were in the small range for all three school years.

Concerning the 2012-2013 school year, girls had a statistically significantly higher average raw score, 0.86 points higher, than boys. In reference to the 2013-2014 school year, girls also had a statistically significantly higher average raw score, 0.73 points higher, than boys. Consistent with the other two years, in the 2014-2015 school year, girls had a statistically significantly higher average raw score, 0.92 points higher, than boys. Girls scored statistically significantly higher on the Reading Reporting Category 2 than boys in all three school years analyzed. Table 3.2 contains the descriptive statistics for this analysis.

Insert Table 3.2 about here

Reading Reporting Category 3 (Understanding Informational Texts) Results Across

All Three School Years

With respect to the 2012-2013 school year, a statistically significant difference was yielded between boys and girls in their Reading Reporting Category 3 performance, $F(1, 372796) = 5041.91$, $p < .001$, partial $\eta^2 = .001$, a below small effect size (Cohen, 1998). Regarding the 2013-2014 school year, a statistically significant difference was revealed between boys and girls in their STAAR Reading Reporting Category 3 scores, $F(1, 377768) = 22553.01$, $p < .001$, partial $\eta^2 = .01$, small effect size (Cohen, 1998). Concerning the 2014-2015 school year, a statistically significant difference was again yielded between boys and girls in their STAAR Reading Reporting Category 3 scores, $F(1, 388726) = 33128.80$, $p < .001$, partial $\eta^2 = .01$, small effect size (Cohen, 1998). On the STAAR Reading Reporting Category 3, the effect size was below small in the first school year and small in the last two school years.

Concerning the 2012-2013 school year, girls had a statistically significantly higher average raw score, 0.23 points higher, than boys. Regarding the 2013-2014 school year, girls also had a statistically significantly higher average raw score, 0.49 points higher, than boys. Consistent with the other two years, in the 2014-2015 school year, girls had a statistically significantly higher average raw score, 0.58 points higher, than boys. Girls scored statistically significantly higher on the Reading Reporting Category 3 than did boys in all three school years analyzed. Descriptive statistics for this analysis are contained in Table 3.3.

Insert Table 3.3 about here

Results for the Level II Final Satisfactory Performance Analyses Over Time

Student performance on the Level II Final Satisfactory standard was examined next through the use of Pearson chi-square procedures. This statistical procedure was the most appropriate statistical procedure to use because dichotomous data were present for the Level II Final Satisfactory Performance Standard (i.e., met or did not meet this standard) and for gender. As such, the chi-square is the preferred statistical procedure when both variables are categorical (Field, 2009). Because a large sample size was present, the assumptions for utilizing a chi-square were met.

Concerning the STAAR Level II Final Satisfactory Performance Standard, a statistically significant difference was present between boys and girls in the 2012-2013 school year, $\chi^2(1) = 602.77$, $p < .001$. The effect size revealed for this finding, Cramer's V, was below small, .04 (Cohen, 1988). A statistically significantly higher percentage of girls, 3.9%, met the Level II Final Satisfactory Performance Standard than boys. Table 3.4 contains the descriptive statistics for this analysis.

Insert Table 3.4 about here

With regard to the Level II Final Satisfactory Performance Standard of boys and girls, the result for the 2013-2014 school year was statistically significant, $\chi^2(1) = 1,006.29$, $p < .001$. The effect size revealed for this finding, Cramer's V, was below

small, .05 (Cohen, 1988). A statistically significantly higher percentage of girls, 4.9%, met the Level II Final Satisfactory Performance Standard than boys. Delineated in Table 3.4 are the descriptive statistics for this analysis.

Insert Table 3.4 about here

Regarding the Level II Final Satisfactory Performance Standard of boys and girls, a statistically significant difference was present in the 2014-2015 school year, $\chi^2(1) =$ 1,925.34, $p < .001$. The effect size revealed for this finding, Cramer's V, was below small, .07 (Cohen, 1988). A statistically significantly higher percentage of girls, 6.9%, met the Level II Final Satisfactory Performance Standard than boys. Readers are referred to Table 3.4 for the descriptive statistics for this analysis.

Insert Table 3.4 about here

In analyzing the reading performance of Grade 4 students in Texas across the three years of data that were analyzed, clear trends were present in the reading scores of boys and girls. In each of the three STAAR Reading Reporting Categories for all three years, girls demonstrated statistically significant higher reading test scores than boys. Moreover, statistically significantly higher percentages of Grade 4 girls met the STAAR Reading Level II Satisfactory Standard than did Grade 4 boys. These results are depicted in Figures 3.1, 3.2, 3.3, and 3.4.

Insert Figures 3.1 through 3.4 about here

Discussion

Examined in this investigation was the degree to which differences were present between girls and boys in their reading performance on the Texas state-mandated assessment. Three years of statewide data on the three Grade 4 STAAR Reading Reporting Categories were analyzed for boys and girls. Inferential statistical analyses revealed the presence of statistically significant differences between boys and girls in their reading performance in all three school years. Following these statistical analyses, the Level II Final Satisfactory Performance Standard by gender was addressed and determined to yield statistically significant gender differences.

Connections to Existing Literature

Concern over gender inequities in reading achievement has been present for generations (McGown, 2016). Education should be the great equalizer, however, gender literacy gaps have been extensively documented for decades. In a recent Texas, multiyear analysis, McGown (2016) examined the STAAR Reading test scores of Grade 3 boys and girls to ascertain the extent to which gender differences were present. In the three years of data she analyzed, girls had statistically significantly higher overall reading scores and higher STAAR Reading Reporting Category 1, 2, and 3 test scores. Moreover, higher percentages of girls met the passing standard on the STAAR Reading test than did boys.

As evidenced by the results of this study, Grade 4 girls in Texas have better reading scores than do boys. These findings are consistent with the existing literature regarding the disparity between girls and boys in their reading achievement. Although efforts have been made to close the achievement gaps in reading between ethnic and racial subgroups, limited success has occurred with regard to closing the gender gap in reading achievement (Klecker, 2006). When Klecker (2006) analyzed gender differences between students in elementary and high school, he determined that girls outperformed boys in all six years of data that were analyzed. Another researcher, Stinnett (2011), established that statistically significant differences were present between girls and boys in a study analyzing skill development in reading. Girls continue to outperform boys in school as evident by their report card grades and by the state-mandated standardized assessments given each year (Sadker & Zittleman, 2005).

In 2008, Northwestern University claimed that girls have a superior language ability to boys; and that girls enter school with more advanced literacy skills than boys (Stinnett, 2011). Not only are Grade 4 girls outperforming boys in the United States but around the world, scoring higher than boys in all G-20 countries (National Center for Education Statistics, 2015). As identified, the achievement gaps between girls and boys are seen at an early age. When those deficits are not addressed by Grade 3, the first year of state-mandated testing, girls will continue to perform higher than boys (McGown, 2016).

Implications for Policy and Practice

Based on the results of this multiyear statewide investigation in which STAAR reading scores were analyzed by gender, several implications for policy and practice can

be recommended. First, additional funding should be provided to purchase reading material that interest boys. Librarians, Media Specialist, teachers, and Literacy Coaches should provide both girls and boys with an interest survey to determine which subjects, genres, and texts would be of interest. Boys should be allowed to read sports magazines, car magazines, or what reading material interest them the most. Educators should find a process for incorporating rigor as well as relevance in every reading lesson to increase engagement and excitement. Second, school districts in collaboration with state and federal agencies should provide professional development opportunities specifically designed to target the reading gaps between girls and boys. Teachers should be equipped to provide research-based strategies and techniques aimed at ensuring that boys acquire reading skills at the same rate of proficiency as girls. Third, districts should receive funding for full-day pre-kindergarten programs which would provide the early literacy foundation needed for all students to read at or above their reading level. Fourth, schools in conjunction with their district should provide parenting classes to shed light on the disparities between girls and boys and provide resources for parents to use at home. These efforts will assist the teachers, administrators, and coaches in closing the gaps between girls and boys in reading.

Recommendations for Future Research

Based on the results of this empirical multiyear investigation, several recommendations for future research can be made. First, researchers are encouraged to examine the relationship between reading performance and gender in other grade levels. The findings from this investigation are limited to Grade 4 boys and girls. As such, researchers should examine the reading performance of boys and girls in middle school

and high school to determine if the gender differences delineated herein are also present at other grade levels. In this study, reading achievement was analyzed by gender only. Accordingly, a second recommendation would be for researchers to analyze other demographic characteristics such as economic status and ethnicity/race to ascertain whether relationships are present between those characteristics and student reading performance. With only reading achievement being analyzed in this study, the third recommendation is to examine if performance differences by gender are present in other subjects such as mathematics, writing, and science. Fourth, researchers should examine reading performance by gender in other states. Only data on the students in Texas were examined in this study. The extent to which the results of this study can be generalized to other states is unknown. Fifth, to analyze trends over several years, researchers are encouraged to conduct longitudinal studies, beginning in Kindergarten and going through Grade 12. A study of this magnitude will allow researchers to connect gender differences with student achievement in multiple grade levels. Last, researchers are also encouraged to conduct mixed and qualitative research studies to provide meaningful data that policymakers and educators can use in making informed decisions regarding educating students based on their gender.

Conclusion

The purpose of this research study was to determine the degree to which differences were present between Grade 4 boys and girls in their reading performance on the Texas state-mandated assessment. Inferential statistical analyses of three years of Texas statewide data revealed the presence of statistically significant differences between boys and girls in their reading performance. In all analyses, girls had better reading

scores than boys and higher percentages who met the passing standard. As such, results

from this multiyear, statewide analysis are congruent with the extant literature.

References

Ayers, L. (1909). *Laggards in our schools*. New York, NY: Russell Sage Foundation.

Below, J. L., Skinner, C. H., Fearrington, J. Y., & Sorrell, C. A. (2010). Gender

differences in early literacy: Analysis of kindergarten through fifth-grade dynamic

indicators of basic early literacy skills probes. *School Psychology Review*, *39*(2),

240-257.

Catsambis, S. S., Mulkey, L. M., Buttaro, A., Steelman, L. C., & Koch, P. R. (2012).

Examining gender differences in ability group placement at the onset of

schooling: The role of skills, behaviors, and teacher evaluations. *Journal of

Educational Research*, *105*(1), 8-20. doi:10.1080/00220671.2010.514779

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.).

Hillsdale, NJ: Lawrence Erlbaum.

Condron, D. J. (2007). Stratification and educational sorting: Explaining ascriptive

inequalities in early childhood reading group placement. *Social Problems, 54*,

139–160.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Thousand Oaks, CA: Sage.

Johnson, R. B., & Christensen, L. B. (2012). *Educational research: Quantitative,

qualitative, and mixed approaches* (4th ed.) Los Angeles, CA: Sage.

Klecker, B. M. (2006). The gender gap in NAEP fourth-, eighth-, and twelfth- grade

reading scores across years. *Reading Improvement, 43*, 50-56.

McGown, J. A. (2016). *Differences in reading performance of Texas elementary school

students as a function of economic status, gender, and ethnicity/race: A multiyear*

statewide study. Doctoral Dissertation, Sam Houston State University, Huntsville, TX.

Moore, G., Combs, J. P., & Slate, J. R. (2012). Advanced Placement exams participation and performance: A national study of gender differences. *E-International Journal of Educational Research, 3*(3), 18-32.

Mullis, I., Martin, M., Foy, P., & Hooper, M. (2017). *Progress in International Reading Literacy Study*. Retrieved from http://timssandpirls.bc.edu/pirls2016/international-results/wp-content/uploads/structure/CompletePDF/P16-PIRLS-International-Results-in-Reading.pdf

National Center for Education Statistics. (2015). *Comparative indicators of education in the United States and other G-20 countries*. Retrieved from https://nces.ed.gov/pubs2016/2016100/ind_15.asp

Northwestern University. (2008). Boys' and girls' brains are different: Gender differences in language appear biological. *Science Daily*. Retrieved from www.sciencedaily.com/releases/2008/03/080303120346.htm

Sadker, D., & Zittleman, K. (2005). *Closing the gender gaps*. Retrieved from https://www.naesp.org/sites/default/files/resources/2/Principal/2005/M-Ap18.pdf

Sanchez, C. (2018). *The gap between the science on kids and reading, and how it is taught*. Retrieved from https://www.npr.org/sections/ed/2018/02/12/582465905/the-gap-between-the-science-on-kids-and-reading-and-how-it-is-taught

Schleeter, G. D. (2017). *Differences in the reading achievement of Texas Grade 3 English Language Learners as a function of their economic status, ethnicity/race,*

and gender: A multiyear statewide study. Doctoral Dissertation, Sam Houston State University, Huntsville, TX.

Stinnett, M. (2011). Research in reading. *Illinois Reading Council Journal*, *39*(3), 72-77.

Tach, L. M., & Farkas, G. (2006). Learning-related behaviors, cognitive skills, and ability grouping when schooling begins. *Social Science Research, 35*, 1048-1079.

Texas Education Agency. (2016). *Student Assessment Division Frequently Asked Questions*. Retrieved from https://tea.texas.gov/student.assessment/staar/

Texas Education Agency. (2017). *The New STAAR Report Card Presentation*. Retrieved from http://www.stamford.esc14.net/page/open/1039/0/Introducing%20the%20New%20STAAR%20Student%20Report-Guide%20for%20Parents%201.pdf

Wright, L. A., & Slate, J. R. (2015). Differences in critical thinking skills for Texas middle school students as a function of economic disadvantage. *Journal of Education Research, 9*(4).

Table 3.1

Descriptive Statistics for the STAAR Grade 4 Reporting Category 1 Scores of Boys and Girls for the 2012-2013, 2013-2014, and 2014-2015 School Years

Reporting Category 1	*n*	*M*	*SD*
2012-2013			
Boys	190,267	6.93	2.31
Girls	182,531	7.06	2.21
2013-2014			
Boys	192,652	6.43	3.93
Girls	185,118	6.77	3.83
2014-2015			
Boys	199,474	5.97	2.51
Girls	189,254	6.27	2.45

Table 3.2

Descriptive Statistics for the STAAR Grade 4 Reporting Category 2 Scores of Boys and

Girls for the 2012-2013, 2013-2014, and 2014-2015 School Years

Reporting Category 2	*n*	*M*	*SD*
2012-2013			
Boys	190,267	11.01	3.92
Girls	182,531	11.87	3.82
2013-2014			
Boys	192,652	11.17	3.94
Girls	185,118	11.90	3.83
2014-2015			
Boys	199,474	11.65	4.19
Girls	189,254	12.57	3.92

Table 3.3

Descriptive Statistics for the STAAR Grade 4 Reporting Category 3 Scores of Boys and

Girls for the 2012-2013, 2013-2014, and 2014-2015 School Years

Reporting Category 3	*n*	*M*	*SD*
2012-2013			
Boys	190,267	9.92	3.82
Girls	182,531	10.15	3.76
2013-2014			
Boys	192,652	9.79	3.65
Girls	185,118	10.28	3.57
2014-2015			
Boys	199,474	9.65	3.89
Girls	189,254	10.23	3.77

Table 3.4

Frequencies and Percentages for the Grade 4 STAAR Reading Level II Satisfactory

Performance Standard of Boys and Girls for the 2012-2013, 2013-2014, and 2014-2015

School Years

School Year	Met Standard		Did Not Meet Standard	
	n	%	*n*	%
2012-2013				
Boys	68,748	35.6	124,250	64.4
Girls	72,624	39.5	111,259	60.5
2013-2014				
Boys	64,861	33.2	130,669	66.8
Girls	71,057	38.1	115,509	61.9
2014-2015				
Boys	71,292	36.3	125,110	63.7
Girls	81,134	43.2	106,552	56.8
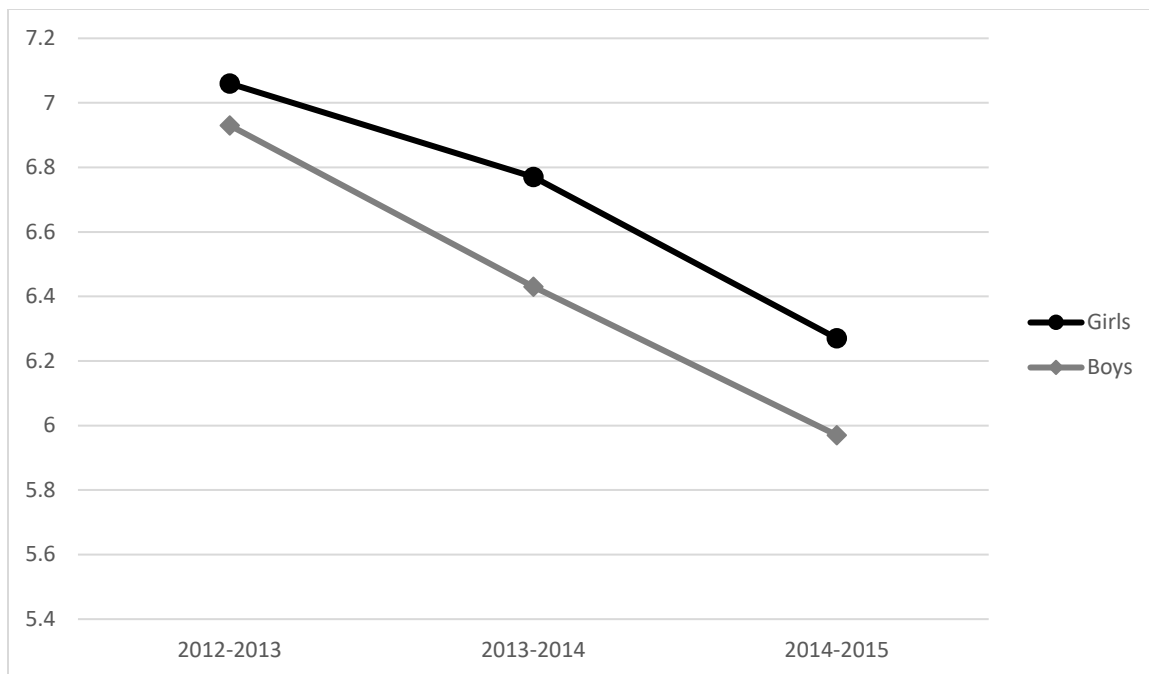
Figure 3.1. Average scores for boys and girls on the STAAR Grade 4 Reporting Category 1 for the 2012-2013, 2013-2014, and 2014-2015 school years.
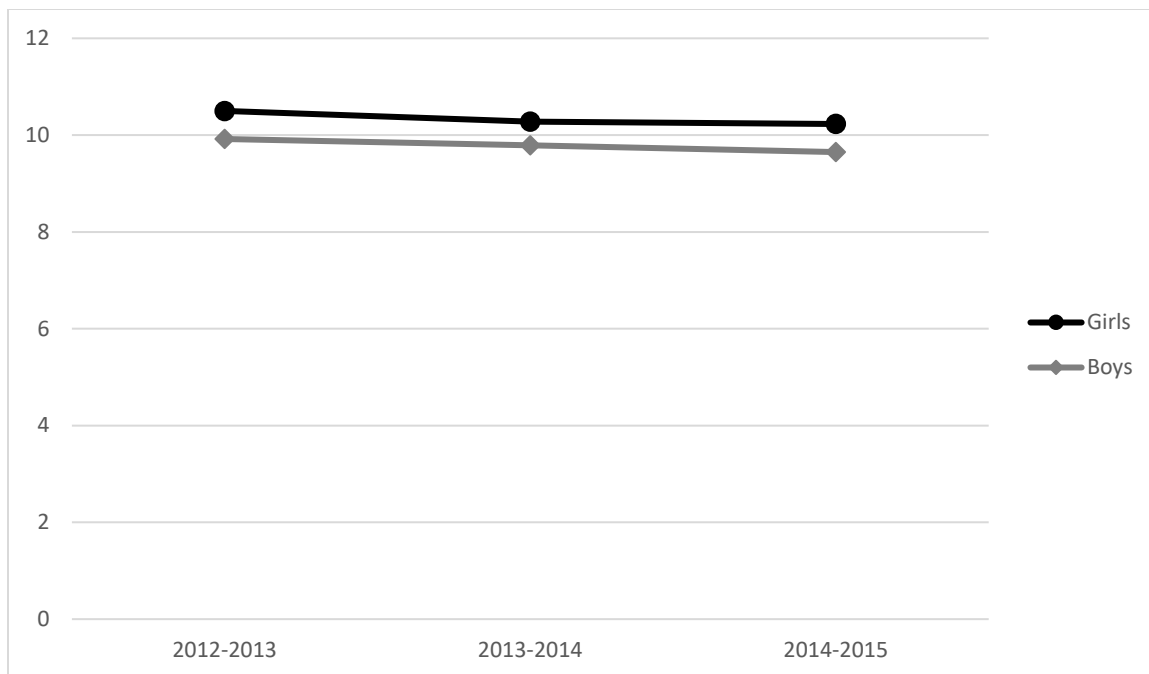
Figure 3.2. Average scores for boys and girls on the STAAR Grade 4 Reporting Category 2 for the 2012-2013, 2013-2014, and 2014-2015 school years.
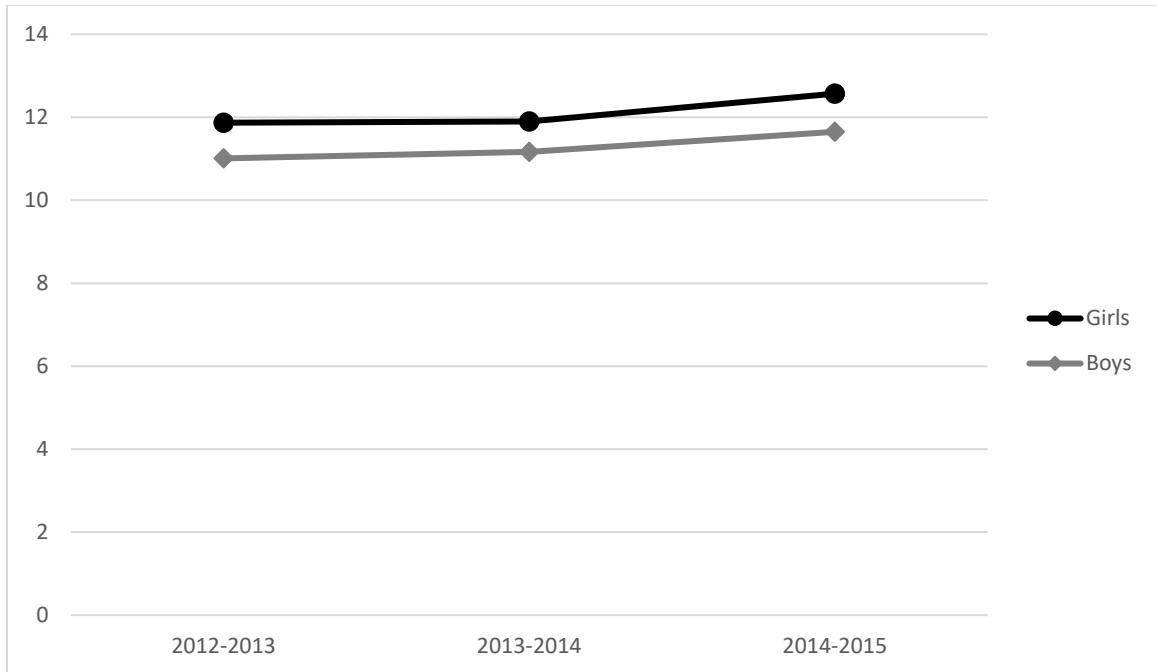
Figure 3.3. Average scores for boys and girls on the STAAR Grade 4 Reporting Category 3 for the 2012-2013, 2013-2014, and 2014-2015 school years.
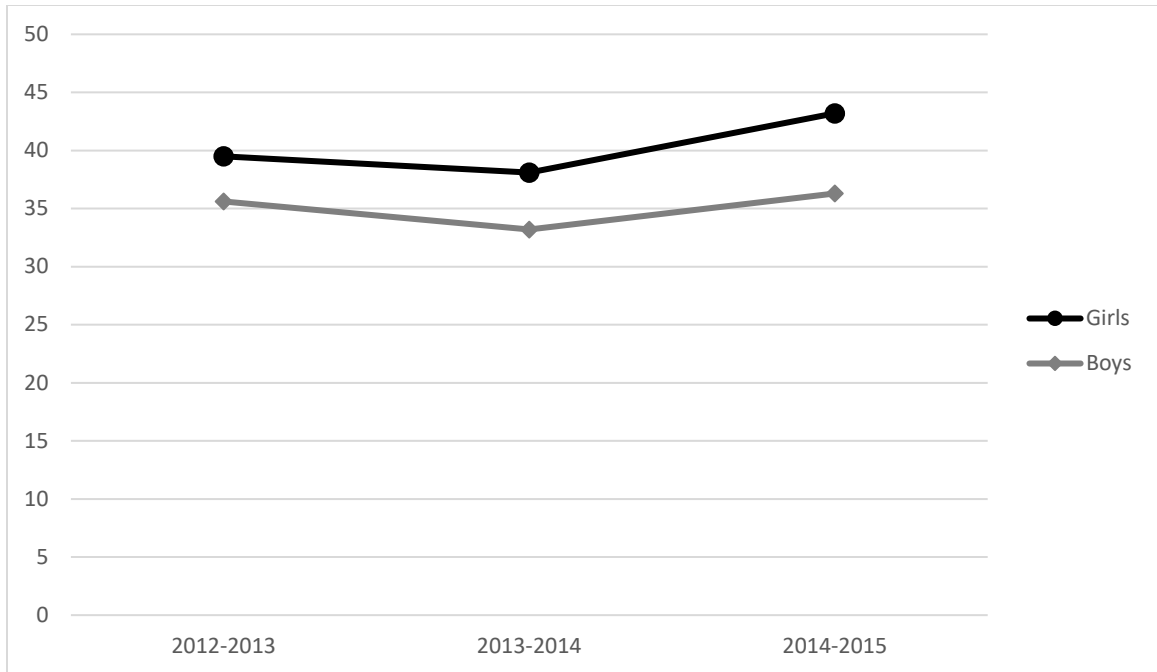
Figure 3.4. Grade 4 STAAR Reading Level II Satisfactory Performance Standard of boys and girls for the 2012-2013, 2013-2014, and 2014-2015 school years.

CHAPTER IV

DIFFERENCES IN THE READING PERFORMANCE OF TEXAS GRADE 4

STUDENTS AS A FUNCTION OF THEIR ETHNICITY/RACE: A MULTIYEAR,

STATEWIDE INVESTIGATION

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

Abstract

In this study, the degree to which differences were present in the reading performance of

Grade 4 Texas students as a function of their ethnicity/race (i.e., Asian, White, Hispanic,

Black) was examined. Data from the Texas Education Agency Public Education

Information Management System for all Grade 4 students in Texas who took the State of

Texas Assessment of Academic Readiness Reading exam were analyzed for the 2012-

2013, 2013-2014, and 2014-2015 school years. In all three years analyzed, statistically

significant differences were established in not only overall reading performance, but also

in all three Reading Reporting categories. A clear stair-step effect was present; Asian

students outperformed White, Hispanic, and Black students in all three Reading

Reporting categories and in the Level II Final Satisfactory Standard. Similarly, White

students had higher reading skills than Hispanic and Black students and Hispanic students

had higher reading skills than Black students. Suggestions for future research, as well as

implications for policy and practice, were provided.

Keywords: Ethnicity/race, Asian, White, Hispanic, Black, STAAR Reading, Texas, Grade

4, and Level II Final Satisfactory Standard

DIFFERENCES IN THE READING PERFORMANCE OF TEXAS GRADE 4

STUDENTS AS A FUNCTION OF THEIR ETHNICITY/RACE: A MULTIYEAR,

STATEWIDE INVESTIGATION

The belief that all children will and can learn has been communicated for decades in the United States. With the enactment of the No Child Left Behind Act in 2001, one of the stated purposes was to close the achievement gap between minority and non-minority students (U. S. Department of Education, 2005). With the requirements of No Child Left Behind Act, school districts were held responsible for improving student performance for all students, including the four ethnic/racial groups (i.e., Asian, Black, Hispanic, and White) of students in the United States. Additionally, schools were forced to focus on the existence of ethnic/racial disparities in academic performance. Recognizing that the No Child Left Behind Act's stringent requirements were becoming increasingly unworkable, the Every Student Succeeds Act (U.S. Department of Education, 2017) was developed and enacted on December 10, 2015. Similar to the No Child Left Behind Act, the Every Student Succeeds Act provided policymakers with new options for closing the opportunity and achievement gaps in their states (National Conference of State Legislators, 2018).

> Opportunity gaps occur when a group of students receives more or fewer
> educational inputs, like access to high-quality teachers or learning opportunities,
> than another student group. Achievement gaps occur when one group of students
> performs better or worse than another group on measurements of student
> achievement, like standardized tests or graduation rates. (National Conference of
> State Legislators, 2018, para 2)

Regardless of race/ethnicity, the accountability system under the Every Student Succeeds Act requires schools to disaggregate data, isolate the performance of subpopulations, and ensure that all students are succeeding. As reported by the Nation's Report Card (2015), only about one-third of Grade 4 students performed at or above the proficient level in reading on the State of Texas Assessment of Academic Readiness (STAAR) Reading assessment. Of those students, 57% were Asian, 18% were Black, 21% were Hispanic, and 46% were White (The Nation's Report Card, 2015). Based on the 2015 STAAR Reading exam results, Grade 4 students had an average score of 223 in reading, a score that was quite similar to 2013 results (The Nation's Report Card, 2015). Black and Hispanic students continue to lag behind White and Asian students on national standardized achievement tests (Rothert, 2005). "The gap between the reading scores of White students and African American and Latino students in Grade 4 has not narrowed significantly from 1992 to 2003" (Rothert, 2005, para 3). The achievement gap between White students and students of color continue to widen.

As indicated by Sáenz (2004), although Black students consist of 17% of the nation's high school population, they only take 4% of the Advanced Placement exams. Although the No Child Left Behind Act (2001) and the Every Student Succeeds Act (2015) both highlighted one of the most critical deficiencies in education in the United States, racial/ethnic disparities in reading performance, minimal progress has been made in closing the achievement gaps between these groups. Clearly the relationship between reading performance and ethnicity/race warrants further examination.

In a recent study in the state of interest for this article, Texas, McGown (2016) addressed the extent to which differences were present in the reading performance of

Grade 3 students as a function of their ethnicity/race. Three years of data (i.e., 2012-2013, 2013-2014, and 2014-2015) from the STAAR Reading exam were analyzed to determine whether Asian, Black, Hispanic, and White students differed in their reading performance. In her study, statistically significant differences were present in the overall reading performance of the four groups of students in all three school years. Regarding Reporting Category 1, Asian students outperformed White, Hispanic, and Black students; White students outperformed Hispanic and Black students; and Hispanic students outperformed Black students. Black students were the lowest performing ethnic/racial group (McGown, 2016). Concerning Reporting Category 2 and Reading Reporting Category 3, results were the same. Asian students had the highest performance, followed by White students, Hispanic students, and then Black students (McGown, 2016). In all three school years, Asian students were the highest performing group to meet the Level II Final Satisfactory Performance Standard. The next highest performing group was White students, followed by Hispanic students, and then Black students for all three school years. Consistent with the literature, Asian and White students outperformed Hispanic and Black students on standardized assessments.

In another recent study conducted in Texas, Schleeter (2017) analyzed the degree to which difference were present in STAAR Reading performance by the ethnicity/race (i.e., Asian, Black, Hispanic, and White) of Grade 3 English Language Learners in the 2012-2013, 2013-2014, and 2014-2015 school years . In 2012-2013, Asian English Language Learners had the highest met standard rate in the Phase-in standards. Asian English Language Learners had a met standard rate that was 7% higher than the met standard rate of White English Language Learners, 7.8% higher than the met standard

rate of Black English Language Learners, and 10.9% higher than the met standard rate of Hispanic English Language Learners (Schleeter, 2017). Clearly documented was the presence of a stair-step effect in student reading performance.

In the 2013-2014 school year, Asian English Language Learners had the highest percentage of students performing at met standard, 8.3% higher than for White English Language Learners, 10.5% higher than for Black English Language Learners, and 11.9% higher for Hispanic English Language Learners (Schleeter, 2017). Concerning the 2014-2015 school year, Asian English Language Learners had the highest percentage who met the Phase-in standard, 11.1% higher than for White English Language Learners, 11.7% higher than for Hispanic English Language Learners, and 12.7% higher than for Black English Language Learners (Schleeter, 2017). Regarding the Level II Phase-in II Satisfactory Performance Standard, the results of all three school years were that Asian English Language Learners had the highest percentage, followed by White English Language Learners, Black English Language Learners, and then Hispanic English Language Learners (Schleeter, 2017). Congruent with the previous STAAR Reading standard, a stair-step effect was present for all three years. In Schleeter's (2017) investigation, Asian English Language Learners had the best performance and Black English Language Learners had the poorest reading performance in all three school years.

Statement of the Problem

"The Brown vs. Board of Education ruling stands as one of the more important cases for the American civil rights movement" (Epps-Robertson, 2016, p. 108). With the overturning of the separate but equal clause, schools were forced to integrate and provide an equal access to education for all students. Nevertheless, students from different

ethnic/racial backgrounds continue to struggle in school. For decades, Asian students have outperformed White, Hispanic, and Black students in reading (The Nations Report Card, 2015). A cadre of researchers (e.g., Barry, 2000; Feldman, 2012; McGown, 2016; National Conference of State Legislators, 2018; Quirk & Schwanenflugel, 2004; Rothert, 2005; Salinger, 2003; Schleeter, 2017; Thoron & Myers, 2011; U. S. Department of Education, 2005; Wu, Morgan, & Farkas, 2014) have documented the presence of extensive achievement gaps among the major ethnic/racial groups. Of note, however, is that researchers have not previously analyzed ethnic/racial gaps of Grade 4 students in reading on the new Texas state-mandated assessment, the STAAR exam. Therefore, the focus of this study was on the reading performance of Grade 4 students to ascertain the degree to which ethnic/racial differences might be present.

Purpose of the Study

The purpose of this study was to examine the degree to which differences were present in the reading achievement of Texas Grade 4 students as a function of their ethnicity/race. Specifically addressed was the extent to which differences existed in reading performance on the Texas state-mandated assessment by the ethnicity/race of Grade 4 students. In this study student ethnicity/race was analyzed by four groupings: Asian, White, Hispanic, and Black.

Significance of the Study

Researchers (e.g., Feldman, 2012; McGown, 2016; Schleeter, 2017; Thoron & Myers, 2011; Wu et al., 2014) have generated a substantial body of research concerning the relationship between ethnicity/race and reading performance. Analyzed in numerous empirical studies have been the gaps in literacy among the four major ethnic/racial

groups of students in the United States: Asian, White, Hispanic, and Black. Of note is

that few researchers (e.g., Harris & Slate, 2017; McGown, 2016) have analyzed the

relationship of ethnicity/race and the state-mandated reading assessment in Texas, the

STAAR Reading test. To date, no published articles were located in which Grade 4

student performance on the Texas state-mandated assessment has been addressed. As

such, the findings of this investigation will add to the existing research literature.

Educational leaders, teachers, policymakers, and legislators might utilize the findings of

this study when making decisions regarding educating students from different

ethnic/racial groups.

Research Questions

In this study, the following overarching research question was addressed: What is

the difference in the reading performance of Texas Grade 4 students as a function of

their ethnicity/race (i.e., Asian, White, Hispanic, and Black)? Specific subquestions

under this overarching research question were (a) What is the difference in

understanding across genres by the ethnicity/race of Texas Grade 4 students?; (b) What

is the difference in comprehension and analysis of literary texts by the ethnicity/race of

Texas Grade 4 students?; (c) What is the difference in comprehension and analysis of

informative texts by the ethnicity/race of Texas Grade 4 students?; (d) What is the

difference in performance on the Level II Final Satisfactory standard by the

ethnicity/race of Texas Grade 4 students?; and (e) What is the degree to which trends are

present in reading by the ethnicity/race of Texas Grade 4 students? The first four

research subquestions were addressed for three school years, whereas the last research

question involved a comparison of results across all three school years.

Method

Research Design

The research design used in this study was a quantitative, causal comparative, non-experimental research design (Johnson & Christensen, 2012). Researchers use causal comparative designs to find relationships between independent and dependent variables after the action has already taken place (Johnson & Christensen, 2012). In this investigation, the action that has already taken place was the STAAR Reading exam that was administered to students in the 2012-2013, 2013-2014, and 2014-2015 school years. The independent variable in this research study was ethnicity/race and the dependent variables were the three reporting categories (i.e., Reporting Category 1, Reporting Category 2, Reporting Category 3) and the Level II Final Satisfactory Performance Standard from the 2012-2013, 2013-2014, and 2014-2015 STAAR Reading exams.

Instrumentation and Procedures

The data that were utilized in this study were previously obtained from the Texas Education Agency Public Education Information Management System database for the 2012-2013, 2013-2014, and 2014-2015 school years. To obtain the data, a Public Information Request was submitted to and fulfilled by the Texas Education Agency. Datasets were requested for (a) Texas Grade 4 students, (b) ethnicity/race, and (c) STAAR Reading Reporting Categories.

Assessed by the STAAR Reading test are three categories for performance. In Reporting Category 1: The student will demonstrate an ability to understand a variety of written texts across reading genres (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 2). Outlined in this category is the focus

on the reading and vocabulary development of the student. Students are expected to understand new vocabulary and use it when reading and writing (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 2). In addition, students are expected to identify the meaning of common prefixes and suffixes and know how they change the meaning of roots words (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 2).

In Reporting Category 2: The student will demonstrate an ability to understand and analyze literary texts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 3). Reporting Category 2 is centered around comprehension of a variety of texts drawing on reading strategies (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 3). Students are expected to ask applicable questions, seek clarification, discover facts and details about stories, and support answers with textual evidence (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 4). In addition, students are expected to make inferences and draw conclusions about theme and genre in different cultural, historical, and contemporary contexts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 4). Reporting Category 2 also measures students' skills on drawing conclusions about the structure and elements of poetry (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 4).

According to The Texas Education Agency, in Reporting Category 3: The student will demonstrate an ability to understand and analyze informational texts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p.

5). Students are expected to analyze, draw conclusions, and make inferences about the author's purpose in cultural, contemporary, and historical contexts (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 5). Similar to Reporting Categories 1 and 2, students are expected to provide evidence from the text to support their understanding.

Each reporting category encompasses Readiness and Supporting Standards (Texas Education Agency The New STAAR Report Card Presentation, 2017, pp. 1-2). The general characteristics of Readiness Standards includes skills that are essential for success in the current grade (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 4). These standards are designed to measure student preparedness for the next grade level. In addition, these standards support college and career readiness benchmarks and measures specific content and concepts. Unlike Readiness Standards, Supporting Standards are introduced in the current grade level but emphasizes subject matter in a subsequent year. Addressed in this standard are more narrowly defined content and concepts. Reporting Category 1 includes five multiple choice questions from both the Readiness and Supporting Standards; Reporting Category 2 contains 15 multiple choice questions from both the Readiness and Supporting Standards; and Reporting Category 3 includes 14 multiple choice questions also from both the Readiness and Supporting Standards (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016, p. 4). Also, students are expected to exhibit "a flexible range of metacognitive reading skills in both assigned and independent reading to understand an author's message… as they become self-directed, critical readers" by being evaluated in their mastery of Figure 19, a TEKS process

standard, across the three Reporting Categories (Texas Education Agency Student Assessment Division Frequently Asked Questions, 2016). Readers are directed to http.//tea.texas.gov/ for more reliability and validity information regarding the STAAR Reading test.

Results

Prior to conducting a multivariate analysis of variance (MANOVA), its underlying assumptions were checked. Specifically examined were data normality, Box's Test of Equality of Covariance and the Levene's Test of Equality of Error Variances. The majority of these assumptions were not met, however, the robustness of a MANOVA procedure made it appropriate to use in this study (Field, 2009). Results of statistical analyses by student ethnicity/race in Texas who took the STAAR Reading test will be described by Reading Reporting Category. The results in this study will be discussed in chronological order for the 2012-2013, 2013-2014, and 2014-2015 school years.

Overall Results for the Three School Years

In respect to the 2012-2013 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .91$, $p < .001$, partial $\eta^2 = .03$, in overall reading performance as a function of student ethnicity/race. The effect size for this statistically significant difference was small (Cohen, 1998). Regarding the 2013-2014 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .92$, $p < .001$, partial $\eta^2 = .03$, in overall reading performance by student ethnicity/race. Using Cohen's (1988) criteria, the effect size was small. Concerning the 2014-2015 school year, the MANOVA revealed a statistically significant difference, Wilks' $\Lambda = .92$, $p < .001$, partial

$\eta^2 = .03$, in overall reading performance between by student ethnicity/race (Cohen, 1988). In all three school years, the effect sizes for the statistically significant ethnic/racial differences in overall reading performance were small.

Reading Reporting Category 1 Results (Understanding Across Genres) Across All Three School Years

Following the overall results of the MANOVA, univariate follow-up Analysis of Variance (ANOVA) procedures were conducted for each of the three STAAR Reading Reporting Categories. For the 2012-2013 school year, a statistically significant difference was present on the STAAR Reading Reporting Category 1 by ethnicity/race, $F(3, 364438) = 36880.18$, $p < .001$, partial $\eta^2 = .06$, moderate effect size (Cohen, 1988). With respect to the 2013-2014 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 1 by student ethnicity/race, $F(3, 368968) = 35402.44$, $p < .001$, partial $\eta^2 = .05$, moderate effect size (Cohen, 1988). Concerning the 2014-2015 school year, a statistically significant difference was again yielded on the STAAR Reading Reporting Category 1 by student ethnicity/race, $F(3, 379498) = 59828.64$, $p < .001$, partial $\eta^2 = .08$, moderate effect size (Cohen, 1988). On the STAAR Reading Reporting Category 1, the effect sizes for the statistically significant differences on the STAAR Reading Reporting Category 1 by student ethnicity/race were moderate for all three school years.

Following the three follow-up ANOVA procedures, Scheffe' post hoc procedures were conducted to determine which ethnic/racial pairings were statistically significantly different. Statistically significant differences on the STAAR Reading Reporting Category 1 were revealed for all of the ethnic/racial comparisons. In the 2012-2013

school year, Asian students had higher average reading scores than White students by 0.32 points; 1.35 points higher than Hispanic students; and 1.68 points higher than Black students. Similarly, White students had higher average reading scores than Hispanic students by 1.03 points and 1.36 points higher than Black students. Hispanic students had a higher average reading score, 0.33 points higher, than Black students. Black students were the lowest performing group on the STAAR Reading Reporting Category 1 for the 2012-2013 school year.

Concerning the 2013-2014 school year, Asian students had higher average reading scores than White students by 0.54 points; 1.53 points higher than Hispanic students; and 1.78 points higher than Black students. Similarly, White students had higher average reading scores than Hispanic students by 0.99 points and 1.24 points higher than Black students. Hispanic students had higher average reading scores, 0.25 points higher, than Black students. Black students were again the lowest performing group on the STAAR Reading Reporting Category 1 for the 2013-2014 school year.

With respect to the 2014-2015 school year, Asian students had higher average reading scores than White students by 0.40 points; 1.71 points higher than Hispanic students; and 2.07 points higher than Black students. Similarly, White students had higher average reading scores than Hispanic students by 1.31 points and 1.67 points higher than Black students. Hispanic students had a higher average reading score, 0.36 points higher, than Black students. Again, Black students were the lowest performing group on the STAAR Reading Reporting Category 1 for the 2014-2015 school year.

In all three school years, a clear stair-step effect (Carpenter, Ramirez, & Severn, 2006) was present on the STAAR Reading Reporting Category 1. In all three school

years, Asian students outperformed White students, White students outperformed

Hispanic students, and Hispanic students outperformed Black students. Revealed in

Table 4.1 are the descriptive statistics for this analysis.

Insert Table 4.1 about here

Reading Reporting Category 2 (Understanding Literary Texts) Results Across All

Three School Years

For the 2012-2013 school year, a statistically significant difference in Reading

Reporting Category 2 by ethnicity/race was yielded, $F(3, 364438) = 131525.07$, $p < .001$,

partial $\eta^2 = .07$, moderate effect size (Cohen, 1988). With respect to the 2013-2014

school year, a statistically significant difference was revealed on the STAAR Reading

Reporting Category 2 by student ethnicity/race, $F(3, 368968) = 120306.35$, $p < .001$,

partial $\eta^2 = .06$, moderate effect size (Cohen, 1988). Concerning the 2014-2015 school

year, a statistically significant difference was again yielded on the STAAR Reading

Reporting Category 2 by student ethnicity/race, $F(3, 379498) = 127639.11$, $p < .001$,

partial $\eta^2 = .06$, moderate effect size (Cohen, 1988). On the STAAR Reading Reporting

Category 2, the effect sizes for the statistically significant differences on the STAAR

Reading Reporting Category 2 by student ethnicity/race were moderate for all three

school years.

Next, Scheffe' post hoc procedures were conducted to ascertain which

ethnic/racial pairings were statistically significantly different. Asian, White, Hispanic,

and Black student groups were all determined to have statistically significant STAAR

Reading Reporting Category 2 scores from each other in all school years. Regarding the 2012-2013 school year, Asian students had higher average reading scores than White students by 0.55 points; 2.60 points higher than Hispanic students; and 2.91 points higher than Black students. Similarly, White students had higher average reading scores than Hispanic students by 2.05 points and 2.36 points higher than Black students. Hispanic students had a higher average reading score, 0.31 points higher, than Black students. Black students were the lowest performing group on the STAAR Reading Reporting Category 2 for the 2012-2013 school year.

Concerning the 2013-2014 school year, Asian students had higher average reading scores than White students by 0.67 points; 2.59 points higher than Hispanic students; and 2.91 points higher than Black students. Similarly, White students had higher average reading scores than Hispanic students by 1.92 points and 2.24 points higher than Black students. Hispanic students had a higher average reading score, 0.32 points higher, than Black students. Black students were the lowest performing group on the STAAR Reading Reporting Category 2 for the 2013-2014 school year.

With respect to the 2014-2015 school year, Asian students had higher average reading scores than White students by 0.84 points; 2.68 points higher than Hispanic students; and 3.29 points higher than Black students. Similarly, White students had higher average reading scores than Hispanic students by 1.84 points and 2.45 points higher than Black students. Hispanic students had a higher average reading score, 0.61 points higher, than Black students. Black students were again the lowest performing group on the STAAR Reading Reporting Category 2 for the 2014-2015 school year.

In all three school years, a clear stair-step effect (Carpenter et al., 2006) was present on the STAAR Reading Reporting Category 2. In all three school years, Asian students outperformed White students, White students outperformed Hispanic students, and Hispanic students outperformed Black students. Table 4.2 contains the descriptive statistics of these analyses.

Insert Table 4.2 about here

Reading Reporting Category 3 (Understanding Informational Texts) Results Across All Three School Years

For the 2012-2013 school year, a statistically significant difference on the STAAR Reading Reporting Category 3 by ethnicity/race was yielded, $F(3, 364438) = 146750.62$, $p < .001$, partial $\eta^2 = .08$, moderate effect size (Cohen, 1988). With respect to the 2013-2014 school year, a statistically significant difference was revealed on the STAAR Reading Reporting Category 3 by student ethnicity/race, $F(3, 368968) = 90958.71$, $p < .001$, partial $\eta^2 = .06$, moderate effect size (Cohen, 1988). Concerning the 2014-2015 school year, a statistically significant difference was again yielded on the STAAR Reading Reporting Category 3 by student ethnicity/race, $F(3, 379498) = 127605.43$, $p < .001$, partial $\eta^2 = .07$, moderate effect size (Cohen, 1988). On the STAAR Reading Reporting Category 3, the effect sizes for the statistically significant differences on the STAAR Reading Reporting Category 3 by student ethnicity/race were moderate for all three school years.

Following the three follow-up ANOVA procedures, Scheffe' post hoc procedures were conducted to ascertain which ethnic/racial pairings were statistically significantly different. Asian, White, Hispanic, and Black student groups were all determined to have statistically significant STAAR Reading Reporting Category 3 scores from each other in all school years. Regarding the 2012-2013 school year, Asian students had higher average reading scores than White students by 1.28 points; 2.90 points higher than Hispanic students; and 3.16 points higher than Black students. Similarly, White students had higher average reading scores than Hispanic students by 2.16 points and 3.16 points higher than Black students. Hispanic students had a higher average reading score, 0.26 points higher, than Black students. Black students were the lowest performing group on the STAAR Reading Reporting Category 3 for the 2012-2013 school year.

Concerning the 2013-2014 school year, Asian students had higher average reading scores than White students by 0.92 points; 239 points higher than Hispanic students; and 3.09 points higher than Black students. Similarly, White students had higher average reading scores than Hispanic students by 1.47 points and 2.17 points higher than Black students. Hispanic students had a higher average reading score, 0.70 points higher, than Black students. Black students were again the lowest performing group on the STAAR Reading Reporting Category 3 for the 2013-2014 school year.

With respect to the 2014-2015 school year, Asian students had higher average reading scores than White students by 0.87 points; 2.70 points higher than Hispanic students; and 3.32 points higher than Black students. Similarly, White students had higher average reading scores than Hispanic students by 1.83 points and 2.45 points higher than Black students. Hispanic students had a higher average reading score, 0.62

points higher, than Black students. Black students were the lowest performing group on

the STAAR Reading Reporting Category 3 for the 2014-2015 school year.

In all three school years, a clear stair-step effect (Carpenter et al., 2006) was

present on the STAAR Reading Reporting Category 3. In all three school years, Asian

students outperformed White students, White students outperformed Hispanic students,

and Hispanic students outperformed Black students. Delineated in Table 4.3 for the

descriptive statistics of this analysis.

Insert Table 4.3 about here

Results for the Level II Final Satisfactory Performance Analyses Over Time

Student performance on the Level II Final Satisfactory standard was examined

next through the use of Pearson chi-square procedures. This statistical procedure was the

most appropriate statistical procedure to use because dichotomous data were present for

the Level II Final Satisfactory Performance Standard (i.e., met or did not meet this

standard) and categorical data were present for student ethnicity/race. As such, the chi-

square is the preferred statistical procedure when both variables are categorical (Field,

2009). Because large sample sizes were present, the assumptions for utilizing a chi-

square were met.

Concerning the Level II Final Satisfactory Performance Standard by

ethnicity/race, the result for the 2012-2013 school year was statistically significant, $\chi^2(3)$

$= 23,816.80, p < .001$. The effect size revealed for this finding, Cramer's V, was small,

.25 (Cohen, 1988). Statistically significantly higher percentages of Asian students met

the Level II Final Satisfactory Performance Standard than White, Hispanic, and Black students. Asian students had 9.3% more students who met the Level II Satisfactory Standard than did White students, 33.3% more than Hispanic students, and 36% more than Black students. White students had 24% more students who met this standard than Hispanic students and 26.7% more than Black students. Hispanic students had 2.7% more students who met this standard than Black students. Again, Black students were the lowest performing group in the Level II Final Satisfactory Performance Standard for the 2012-2013 school year. Table 4.4 contains the frequencies and percentages for the 2012-2013 school year.

Insert Table 4.4 about here

With respect to the 2013-2014 school year, the result was statistically significant, $\chi^2(3) = 19,951.68$, $p < .001$. The effect size yielded for this finding, Cramer's V, was small, .23 (Cohen, 1988). Statistically significantly higher percentages of Asian students met the Level II Final Satisfactory Performance Standard than White, Hispanic, and Black students. Asian students had 12.4% more students who met the Level II Satisfactory Standard than did White students, 32.9% more than the Hispanic students, and 36.5% more than Black students. White students had 20.5% more students who met this standard than Hispanic students and 24.1% more than Black students. Hispanic students had 3.6% more students who met this standard than Black students. Again, Black students were the lowest performing group on the STAAR Reading Level II Final

Satisfactory Performance Standard for the 2013-2014 school year. Table 4.4 contains the descriptive statistics for this school year

Concerning the 2014-2015 school year, a statistically significant difference was present, $\chi^2(3) = 26{,}206.87$, $p < .001$. The effect size yielded for this finding, Cramer's V, was small, .26 (Cohen, 1988). Statistically significantly higher percentages of Asian students met the Level II Final Satisfactory Performance Standard than White, Hispanic, and Black students. Asian students had 10.8% more students who met the Level II Satisfactory Standard than White students, 35.3% more than Hispanic students, and 40.5% more than Black students. White students had 24.5% more students who met this standard than Hispanic students and 29.7% more than Black students. Hispanic students had 5.2% more students who met this standard than Black students. Black students were again the lowest performing group on the STAAR Reading Level II Final Satisfactory Performance Standard for the 2014-2015 school year. Descriptive statistics for this school year are revealed in Table 4.4.

A star-step effect (Carpenter et al., 2006) was clearly evident in the percentages of students who met this standard in all three school years. Asian students were the highest performing group to meet the Level II Final Satisfactory Performance Standard in all three school years. White students had the second highest percentage of students who met this reading performance standard, followed by Hispanic students. Black students had the lowest percentage of students who met this reading performance standard in all three school years.

Following these analyses, the degree to which consistencies or trends were present in reading performance by student ethnicity/race was examined. In each of the

three STAAR Reading Reporting categories, a clear and consistent stair-step effect was observed. In all instances, the highest reading performance was demonstrated by Asian students, who were followed by White students, then Hispanic students, and finally by Black students. Regarding the STAAR Reading Level II Satisfactory Performance Standard, the same stair-step effect was present. Statistically significantly higher percentages of Asian students met this reading standard, followed by White students, then Hispanic students, and finally by Black students. These trends are revealed in Figures 4.1 through 4.4.

Insert Figures 4.1 through 4.4 about here

Discussion

Analyzed in this investigation was the extent to which differences were present in the reading performance of Texas Grade 4 students by their ethnicity/race. Three years of statewide data on the three Grade 4 STAAR Reading Reporting Categories were examined for the four different student groups. Statistically significant results were present in all three school years examined. Following these statistical analyses, the Level II Final Satisfactory Performance Standard by ethnicity/race was determined.

Connections to Existing Literature

In a recent Texas, multiyear analysis, McGown (2016) examined the reading achievement of Grade 3 students on the STAAR Reading assessment. In her multiyear analysis, she documented the presence of statistically significant differences in all three STAAR Reading Reporting categories, as well as on the percentages of students who met

the passing standard on this exam, as a function of their ethnicity/race. In her investigation, as well as in this article, a clear stair-step effect (Carpenter et al., 2006) was established in student reading performance. Asian students consistently outperformed White students, Hispanic students, and Black students. In all three years investigated, McGown (2016) established that Asian students were the highest performing and Black students were the lowest performing. Findings of this multiyear, statewide analysis were congruent with the extant literature regarding the presence of ethnic/racial differences in reading achievement.

Revealed in this investigation was the clear presence of a stair-step effect in reading achievement. Asian students outperformed White, Hispanic, and Black students in all three Reading Reporting categories. White students had higher reading scores than Hispanic and Black students. Finally, Hispanic students had higher reading scores than Black students. The No Child Left Behind Act in 2001, intended to close the achievement gaps between ethnic/racial groups (U.S. Department of Education, 2005). However, gaps in reading performance based on ethnicity/race continued to remain prevalent (The Nation's Report Card, 2015). From 2012 to 2015, Asian students consistently outperformed White, Hispanic, and Black students (The Nation's Report Card, 2015). Not only is the ethnicity/race achievement gap present but it has not narrowed from 1992 to 2003 (Rothert, 2005).

Implications for Policy and Practice

Several implications for policy and practice can be recommended based on the results of this multiyear statewide investigation. As noted herein, Black students had the poorest reading scores of the four ethnic/racial groups. Black students in Grade 4

performed the lowest in this study and in the study conducted by McGown (2016) on Grade 3 students. First, funds should be provided to hire additional staff to support Black students who are underperforming in reading. Also consistent with the data findings in this study and the study conducted by McGown (2016), Hispanic students are the second lowest performing group. As such Hispanic and Black students could benefit from a strong early literacy foundation. Therefore, programs should be made available in schools with a high percentage of Hispanic and Black students. Third, schools and districts should utilize a progress monitoring system to ensure that the interventions and supports in place are effective in improving the performance for all students, specifically the historically lowest performing groups.

Recommendations for Future Research

Based on the results of this empirical multiyear study, several recommendations for future research can be offered. A first recommendation would be for researchers to examine the link between ethnicity/race and reading performance at other grade levels. Data on only Grade 4 students reading performance were analyzed herein. To that end, researchers are encouraged to examine the reading performance of students in middle school and high school to determine the differences based on ethnicity/race. In this study, the relationship of only ethnicity/race to reading achievement was addressed. Second, researchers should also analyze reading achievement by ethnicity/race and other subgroups to determine if gaps exist in other areas. Third, researchers should ascertain if performance differences are present in other subject areas such as mathematics and writing. The focus of this study was on only reading performance. Grade 4 students are also required by the State of Texas to take STAAR Mathematics and Writing exams.

Fourth, researchers should examine reading performance by ethnicity/race in other states. Only data regarding students in Texas were examined in this study. The degree to which the results of this study can be generalized to other states is unknown. Fifth, to analyze trends over several years, researchers are encouraged to conduct longitudinal studies that span from Kindergarten to Grade 12. A study of this magnitude will allow researchers to connect ethnicity/race performance with student achievement in multiple grade levels. Last, researchers are also encouraged to conduct mixed and qualitative research studies to provide meaningful data that policymakers and educators can use in making informed decisions regarding educating students based on their ethnicity/race.

Conclusion

The purpose of this research study was to determine the extent to which differences were present in the reading performance of Texas Grade 4 students as a function of their ethnicity/race. Through the analysis of three years of Texas statewide data, statistically significant differences were revealed in the reading performance of students who were Asian, White, Hispanic, and Black. A stair-step effect (Carpenter et al., 2006) was clearly established in all three school years. Asian students outperformed White, Hispanic, and Black students in Reading Reporting Category 1, 2, and 3 as well as on the Level II Final Satisfaction Performance Standard. White students had better reading skills than Hispanic and Black students and Hispanic students had better reading skills than Black students. As such, results were commensurate with the extant literature.

References

Barry, A. L. (2000). High school reading programs revisited. *Journal of Adolescent and Adult Literacy, 40*(7), 527-531.

Carpenter, D., Ramirez, A., & Severn, L. (2006). Gap or gaps – Challenging the singular definition of the achievement gap. *Education and Urban Society, 39*(1), 113-127.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Epps-Robertson, C. (2016). The race to erase Brown v. Board of Education: The Virginia way and the rhetoric of massive resistance. *Rhetoric Review*, *35*(2), 108-120. doi:10.1080/07350198.2016.1142812

Feldman, D. (2012). The relationship of writing and writing instruction with standardized reading scores for secondary students. *Ohio Reading Teacher*, *42*(1), 18-31.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Thousand Oaks, CA: Sage.

Harris, L., & Slate, J. R. (2017). Differences in reading by the economic status of Grade 3 Black boys and girls. *Annals of Language and Literature, 2*, 1-8.

Johnson, R. B., & Christensen, L. B. (2012). *Educational research: Quantitative, qualitative, and mixed approaches* (4th ed.) Los Angeles, CA: Sage.

McGown, J. A. (2016). *Differences in reading performance of Texas elementary school students as a function of economic status, gender, and ethnicity/race: A multiyear statewide study.* Doctoral Dissertation, Sam Houston State University, Huntsville, TX.

National Conference for State Legislators. (2018). *Closing the opportunity gap under ESSA*. Retrieved from http://www.ncsl.org/research/education/equity-and-the-opportunity-gap.aspx

Quirk, M. P., & Schwanenflugel, P. J. (2004). Do supplemental remedial reading programs address the motivational issues of struggling readers? An analysis of five popular programs. *Reading Research and Instruction, 43*(3), 1-19.

Rothert, C. (2005). *Achievement gaps and No Child Left Behind*. Retrieved from https://youthlaw.org/publication/achievement-gaps-and-no-child-left-behind/print/

Sáenz, V. (2004). Resources and information for serving minority populations. *New Directions for Community Colleges*, (127), 97-106. doi:10.1002/cc.167

Salinger, T. (2003). Helping older, struggling readers. *Preventing School Failure, 47*(2), 79-85.

Schleeter, G. D. (2017). *Differences in the reading achievement of Texas Grade 3 English Language Learners as a function of their economic status, ethnicity/race, and gender: A multiyear statewide study.* Doctoral Dissertation, Sam Houston State University, Huntsville, TX.

Texas Education Agency. (2016). *Student Assessment Division Frequently Asked Questions*. Retrieved from https://tea.texas.gov/student.assessment/staar/

Texas Education Agency. (2017). *The New STAAR Report Card Presentation*. Retrieved from http://www.stamford.esc14.net/page/open/1039/0/Introducing%20the%20New%20STAAR%20Student%20Report-Guide%20for%20Parents%201.pdf

The Nations Report Card. (2015). *Mathematics and reading assessment*. Retrieved from

      https://www.nationsreportcard.gov/reading_math_2015/#reading?grade=4

Thoron, A. T., & Myers, B. B. (2011). Impact of gender, ethnicity, year in school, social

      economic status, and state standardized assessment scores on student content

      knowledge achievement when using Vee Maps as a formative assessment tool.

      Journal of Agricultural Education, *52*(1), 85-95. doi:10.5032/jae.2011.01085

United States Department of Education. (2005). *Closing the achievement gap*. Retrieved

      from https://www2.ed.gov/about/offices/list/ovae/pi/hs/factsh/ctag_rpt.pdf

United States Department of Education. (2017). *Every Student Succeeds Act*. Retrieved

      from https://www.ed.gov/esea

Wu, Q., Morgan, P. L., & Farkas, G. (2014). Does minority status increase the effect of

      disability status on elementary schoolchildren's academic achievement? *Remedial*

      & Special Education, *35*(6), 366-377. doi:10.1177/0741932514547644

Table 4.1

Descriptive Statistics for the STAAR Grade 4 Reporting Category 1 Scores by Student

Ethnicity/Race for the 2012-2013, 2013-2014, and 2014-2015 School Years

Reporting Category 1	*n*	*M*	*SD*
2012-2013			
Asian	14,274	8.01	2.01
White	111,000	7.69	2.03
Hispanic	193,159	6.66	2.27
Black	46,009	6.33	2.33
2013-2014			
Asian	14,915	7.79	2.06
White	110,331	7.25	2.17
Hispanic	197,259	6.26	2.27
Black	46,467	6.01	2.32
2014-2015			
Asian	15,565	7.40	2.33
White	111,583	7.00	2.33
Hispanic	204,055	5.69	2.42
Black	48,299	5.33	2.49

Table 4.2

Descriptive Statistics for the STAAR Grade 4 Reporting Category 2 Scores by Student

Ethnicity/Race for the 2012-2013, 2013-2014, and 2014-2015 School Years

Reporting Category 2	*n*	*M*	*SD*
2012-2013			
Asian	14,274	13.32	3.72
White	111,000	12.77	3.58
Hispanic	193,159	10.72	3.84
Black	46,009	10.41	3.85
2013-2014			
Asian	14,915	13.46	3.63
White	110,331	12.79	3.67
Hispanic	197,259	10.87	3.82
Black	46,467	10.55	3.85
2014-2015			
Asian	15,565	14.19	3.66
White	111,583	13.35	3.77
Hispanic	204,055	11.51	4.03
Black	379,502	12.08	4.09

Table 4.3

Descriptive Statistics for the STAAR Grade 4 Reporting Category 3 Scores by Student

Ethnicity/Race for the 2012-2013, 2013-2014, and 2014-2015 School Years

Reporting Category 3	*n*	*M*	*SD*
2012-2013			
Asian	14,274	12.17	3.49
White	111,000	11.43	3.52
Hispanic	193,159	9.27	3.70
Black	46,009	9.01	3.68
2013-2014			
Asian	14,915	11.96	3.34
White	110,331	11.04	3.43
Hispanic	197,259	9.57	3.55
Black	46,467	8.87	3.61
2014-2015			
Asian	15,565	12.04	3.45
White	111,583	11.17	3.62
Hispanic	204,055	9.34	3.76
Black	48,299	8.72	3.80

Table 4.4

Frequencies and Percentages for the Grade 4 STAAR Reading Level II Satisfactory

Performance Standard by Ethnicity/Race for the 2012-2013, 2013-2014, and 2014-2015

School Years

School Year	Met Standard		Did Not Meet Standard	
	n	*%*	*n*	*%*
2012-2013				
Asian	8,975	62.3	5,430	37.7
White	59,442	53.0	52,624	47.0
Hispanic	56,703	29.0	138,539	71.0
Black	12,276	26.3	34,348	73.7
2013-2014				
Asian	9,228	61.3	5,822	38.7
White	54,456	48.9	56,913	51.1
Hispanic	56,588	28.4	142,997	71.6
Black	11,715	24.8	35,508	75.2
2014-2015				
Asian	10,278	66.7	5,142	33.3
White	61,748	55.9	48,683	44.1
Hispanic	63,384	31.4	138,217	68.6
Black	12,447	26.2	35,024	73.8

Figure 4.1. Average student scores by ethnicity/race for the STAAR Grade 4 Reporting Category 1 for the 2012-2013, 2013-2014, and 2014-2015 school years.

Figure 4.2. Average student scores by ethnicity/race for the STAAR Grade 4 Reporting Category 2 for the 2012-2013, 2013-2014, and 2014-2015 school years.
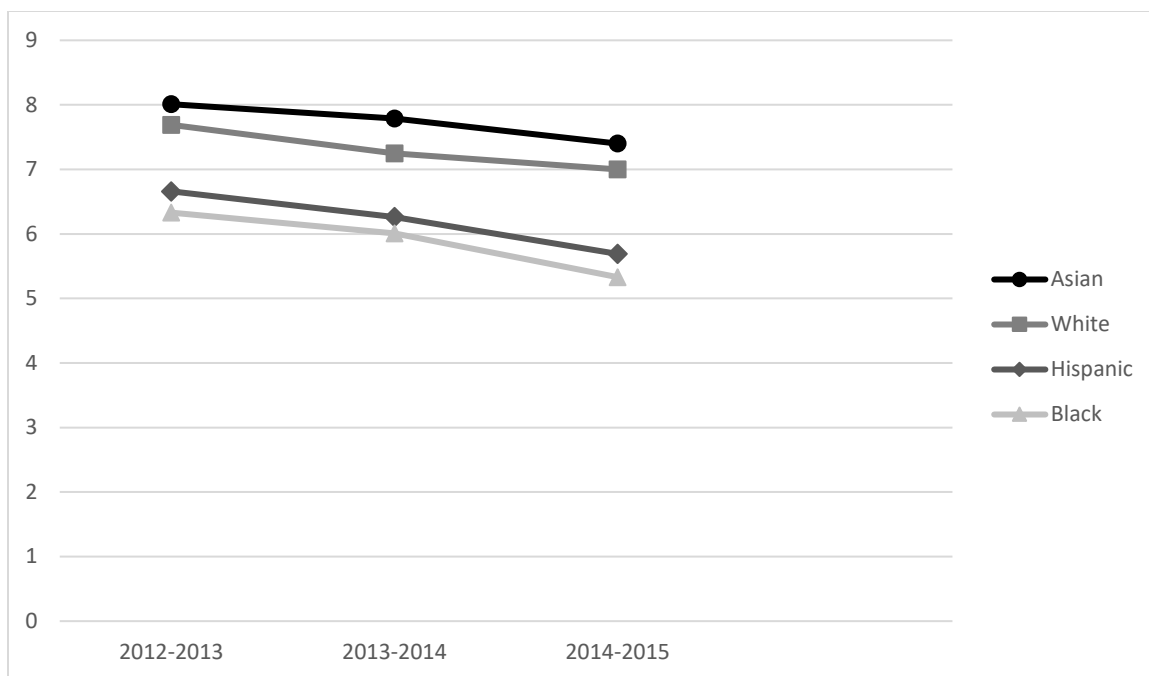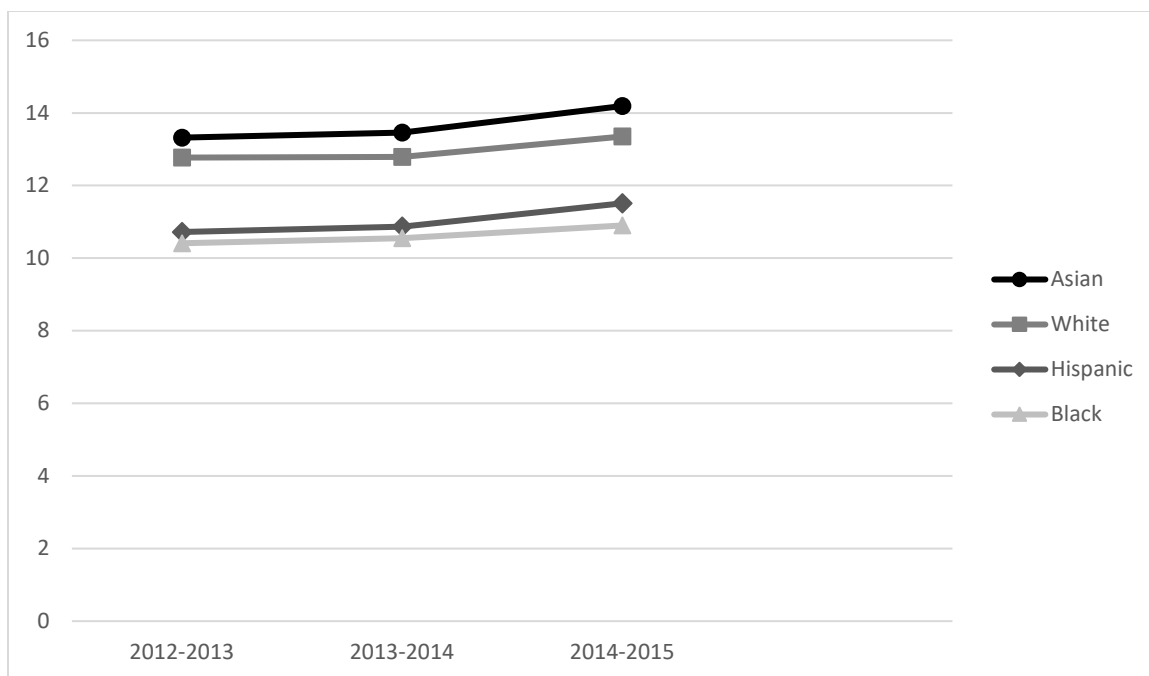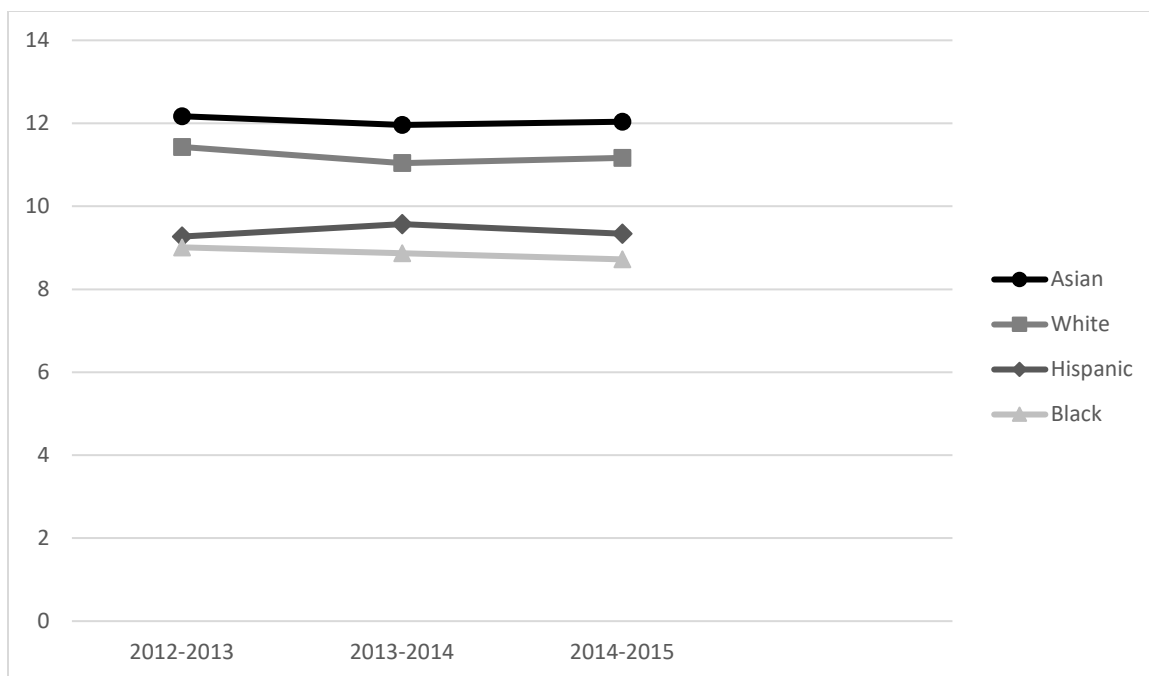
Figure 4.3. Average student scores by ethnicity/race for the STAAR Grade 4 Reporting Category 3 for the 2012-2013, 2013-2014, and 2014-2015 school years.
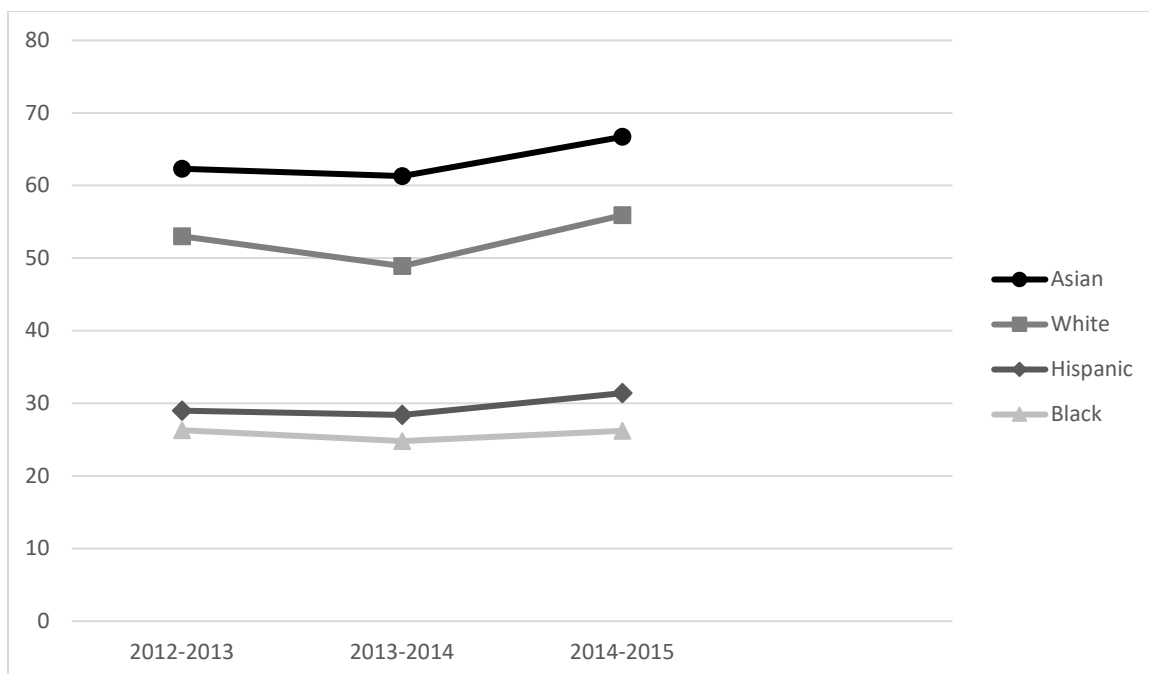
Figure 4.4. Grade 4 STAAR Reading Level II Satisfactory Performance Standard student scores by ethnicity/race for the 2012-2013, 2013-2014, and 2014-2015 school years.

CHAPTER V

DISCUSSION

It is widely acknowledged that educational opportunities for all children should be considered equal. It is doubtful that any child will be successful in life if he/she is denied the opportunity of an education (Epps-Robertson, 2016). Despite the claim that education is society's equalizer (McGown, 2016), differences regarding student performance in reading continue to exist. In response to the disparities in reading achievement, legislators enacted the No Child Left Behind Act (2002) and the Every Student Succeeds Act (2015) to close the performance gaps between students. Efforts have been as successful as intended as evidenced by the results of the three articles in this journal-ready dissertation. In this Chapter V, the results of the three articles in this journal-ready dissertation will be summarized.

Discussion of Results based on Economic Status

Delineated in Table 5.1 is a summary of the statistical analyses results for Texas Grade 4 students who took the STAAR Reading Exam during the 2012-2013, 2013-2014, and 2014-2015 school years. Statistically significant differences in the Grade 4 STAAR Reading performance by degree of economic status were revealed in all three school years examined. In each of the three Reporting Categories, moderate effective sizes were yielded in the three school years. In examining the results, a stair-step effect (Carpenter et al., 2006) was clearly present in that the higher the degree of poverty, the lower the performance in reading for each Reporting Category. In addition, the higher the degree of poverty, the lower the percentage was of students who met the Level II Final

Satisfactory Performance Standard. Overwhelmingly established herein was that student'

reading performance in Grade 4 was directly influenced by their degree of poverty.

Table 5.1

Summary of Reading Performance Results for the Grade 4 STAAR Reading Exam as a

Function of Economic Disadvantage for the 2012-2013, 2013-2014, and 2014-2015

School Years

STAAR Reading Category	Statistically Significant	Effect Size	Lowest Performing Group
2012-2013			
Reporting Category 1	Yes	Moderate	Very Poor
Reporting Category 2	Yes	Moderate	Very Poor
Reporting Category 3	Yes	Moderate	Very Poor
2013-2014			
Reporting Category 1	Yes	Moderate	Very Poor
Reporting Category 2	Yes	Moderate	Very Poor
Reporting Category 3	Yes	Moderate	Very Poor
2014-2015			
Reporting Category 1	Yes	Moderate	Very Poor
Reporting Category 2	Yes	Moderate	Very Poor
Reporting Category 3	Yes	Moderate	Very Poor

Discussion of Results based on Gender

Summarized in Table 5.2 are the results of the statistical analyses of Texas Grade

4 girls and boys who took the STAAR Reading Exam during the 2012-2013, 2013-2014,

and 2014-2015 school years. In all three school years examined, statistically significant

differences in the Grade 4 STAAR Reading performance by gender were revealed. In all

three Reporting Categories, small effect sizes were resent from 2012-2013 through 2014-

2015. Girls outperformed the boys in reading in each Reporting Category. Additionally,

a higher percentage of girls met the Level II Final Satisfactory Performance Standard in

each of the three years analyzed.

Table 5.2

Summary of Reading Performance Results for the Grade 4 STAAR Reading Exam for

Boys and Girls in the 2012-2013, 2013-2014, and 2014-2015 School Years

STAAR Reading Category	Statistically Significant	Effect Size	Lowest Performing Group
2012-2013			
Reporting Category 1	Yes	Small	Boys
Reporting Category 2	Yes	Small	Boys
Reporting Category 3	Yes	Below Small	Boys
2013-2014			
Reporting Category 1	Yes	Small	Boys
Reporting Category 2	Yes	Small	Boys
Reporting Category 3	Yes	Small	Boys
2014-2015			
Reporting Category 1	Yes	Below Small	Boys
Reporting Category 2	Yes	Small	Boys
Reporting Category 3	Yes	Small	Boys

Discussion of Results based on Ethnicity/Race

Presented in Table 5.3 are the results of the statistical analyses of Texas Grade 4 students by ethnicity/race who took the STAAR Reading Exam during the 2012-2013, 2013-2014, and 2014-2015 school years. In all three school years examined, statistically significant differences were present in the Grade 4 STAAR Reading performance by ethnicity/race. In all three Reporting Categories, moderate effect sizes were present in all three school years. A stair-step effect (Carpenter et al., 2006) was clearly present in that Asian students had higher reading test scores than White, Hispanic, and Black students; White students had higher reading test scores than Hispanic and Black students; and Hispanic students had higher reading test scores than Black students.

Table 5.3

Summary of Reading Performance Results for the Grade 4 STAAR Reading Exam as a

Function of Ethnicity/Race for the 2012-2013, 2013-2014, and 2014-2015 School Years

STAAR Reading Category	Statistically Significant	Effect Size	Lowest Performing Group
2012-2013			
Reporting Category 1	Yes	Moderate	Black
Reporting Category 2	Yes	Moderate	Black
Reporting Category 3	Yes	Small	Black
2013-2014			
Reporting Category 1	Yes	Moderate	Black
Reporting Category 2	Yes	Moderate	Black
Reporting Category 3	Yes	Moderate	Black
2014-2015			
Reporting Category 1	Yes	Moderate	Black
Reporting Category 2	Yes	Moderate	Black
Reporting Category 3	Yes	Moderate	Black

Connections with the Existing Literature

In this multi-year investigation, the degree of poverty (i.e., Not Poor, Moderately

Poor, and Very Poor) was clearly connected to the reading performance of Grade 4

students in Texas. A stair-step effect (Carpenter et al., 2006) was present in that the

higher the degree of poverty, the poorer students performed in each Reporting Category

and on the Level II Final Satisfactory Standard. Findings were consistent across all three

school years. Results from this study were congruent with the existing literature (e.g.,

Crosnoe & Cooper, 2010; Harris & Slate, 2017; McGown, 2016) in which poverty was

clearly related to student ability to read fluently and proficiently.

Regarding the reading performance of Grade 4 boys and girls, girls continue to

outperform boys. Girls enter school with more advanced literacy skills than boys

(Stinnett, 2011) and this difference in performance continues through high school

(Wright & Slate, 2015). Furthermore, this disparity in gender performance spans across the globe in 48 out of 50 counties analyzed (Mullis et al., 2017). Commensurate with other researchers (e.g., Below et al., 2010; McGown, 2016; Wright & Slate, 2015), girls had higher reading test scores than boys in all three Reading Reporting Categories. Additionally, more girls met the Level II Final Satisfactory Performance Standard in all three years examined.

With respect to ethnicity/race, A stair-step effect (Carpenter et al., 2006) was clearly present in that Asian students had higher reading test scores than White, Hispanic, and Black students; White students had higher reading test scores than Hispanic and Black students; and Hispanic students had higher reading test scores than Black students. Results were consistent for all three Reporting Categories and in meeting the Level II Final Satisfactory Performance Standard for the 2012-2013, 2013-2014, and 2014-2015 school years.

Implications for Policy and for Practice

Based on the analysis of three years of Texas statewide data, several implications for policy and practice can be recommended. First, additional funding should be made available to school districts and school campuses to assist students underperforming on district and state assessments. If students have not met the passing standard on the Grade 3 STAAR Reading exam, a specific educational plan should be established to prevent them from repeating the same performance in Grade 4. Second, funding should be provided for full-day pre-kindergarten programs which would assist in providing the early literacy foundation that is essential for students to develop as proficient readers. Third, school districts in collaboration with state and federal agencies should provide

professional development opportunities specifically designed to target the reading gaps

between students. Teachers should be equipped to provide research-based strategies and

techniques aimed at improving reading skills for all students. Fourth, schools in

conjunction with their district should provide parenting classes to equip parents with the

necessary skills needed to support their child at home in reading. Fifth, schools and

districts should use a progress monitoring system to ensure that the interventions and

supports in place are effective in improving the reading performance for all students.

Additional funds and collaborative efforts among the federal, state, and local educational

agencies will support these efforts and close the achievement gap between all students.

Recommendations for Future Research

Given the results of this empirical multiyear investigation, several

recommendations for future research regarding disparities in performance among

students by economic status, gender, and ethnicity/race can be made. With the enactment

of No Child Left Behind Act, school districts were held responsible for improving student

performance for all students. However, inequalities in academic performance were still

present. Now with the recent enactment of the Every Student Succeeds Act (2015)

policymakers are focused on closing the opportunity and achievement gaps for all

students (National Conference of State Legislators, 2018). In a study conducted by

McGown (2016), gaps in achievement were already present at the first opportunity for

standardized assessment by students in Grade 3. As evidenced in the results from this

study, statistically significant differences in reading performance are still present in Texas

with Grade 4 students. Therefore, a first recommendation would be for researchers to

examine the connections between reading performance by economic status, gender, and

ethnicity/race at other grade levels. If these gaps continue as students matriculate through the educational system, differences in reading performance possibly will result in unequal opportunities on Advanced Placement exams and college and career preparation (Klecker, 2006; Sáenz, 2004; Wright & Slate, 2015).

Under the Every Student Succeeds Act (2015), the accountability system requires schools to disaggregate data, isolate the performance of subpopulations, and ensure that all students are succeeding in every subject measured on the standardized state assessment (National Conference of State Legislators, 2018). Therefore, researchers should examine the state required assessments from Grade 3 through Grade 12 and determine if differences by economic status, gender, and ethnicity/race are present in other subjects. Likewise, researchers should also ascertain if those differences exist beyond Texas. In this study, only Grade 4 students in the state of Texas were examined. The extent to which the results of this study can be generalized to other states is unknown. If these differences are present in other states, measures towards closing the achievement gaps across the nation are in jeopardy.

As this study isolated the reading performance of Grade 4 students in Texas in 2012-2013, 2013-2014, and 2014-2015, researchers are highly encouraged to conduct longitudinal studies that span from Kindergarten through Grade 12. A study of this magnitude will allow researchers to analyze trends for multiple years. Lastly, researchers are encouraged to conduct mixed and qualitative research studies to provide meaningful data that policymakers and educators can use in making informed decisions regarding educating all students.

Conclusion

In this journal-ready dissertation, the degree to which differences were present in the reading performance of Texas Grade 4 students as a function of their economic status, gender, and ethnicity/race was addressed. With respect to economic status, a clear stair-step effect (Carpenter et al., 2006) was established in all three school years. Students who were Not Poor had the best reading skills, followed by students who were Moderately Poor, and then by students who were Very Poor. Concerning gender, girls had better reading scores than boys in all three school years. Regarding ethnicity/race, a stair-step effect was again present, with Asian students having higher reading test scores than White, Hispanic, and Black students. White students had higher reading test scores than Hispanic and Black students; and Hispanic students had higher reading test scores than Black students. As such, results from all three investigations were commensurate with the extant literature.

REFERENCES

Ayers, L. (1909). *Laggards in our schools*. New York, NY: Russell Sage Foundation.

Barker, P. E., & Coley, R. T. (2007). *The family: America's smallest school*. Retrieved from https://eric.ed.gov/?id=ED498878

Barry, A. L. (2000). High school reading programs revisited. *Journal of Adolescent and Adult Literacy, 40*(7), 527-531.

Below, J. L., Skinner, C. H., Fearrington, J. Y., & Sorrell, C. A. (2010). Gender differences in early literacy: Analysis of kindergarten through fifth-grade dynamic indicators of basic early literacy skills probes. *School Psychology Review*, *39*(2), 240-257.

Carpenter, D., Ramirez, A., & Severn, L. (2006). Gap or gaps – Challenging the singular definition of the achievement gap. *Education and Urban Society, 39*(1), 113-127.

Catsambis, S. S., Mulkey, L. M., Buttaro, A., Steelman, L. C., & Koch, P. R. (2012). Examining gender differences in ability group placement at the onset of schooling: The role of skills, behaviors, and teacher evaluations. *Journal of Educational Research*, *105*(1), 8-20. doi:10.1080/00220671.2010.514779

Center for Public Policy Priorities. (2016). *State of Texas children 2016 race and ethnicity*. Retrieved from https://forabettertexas.org/sotc2016/kc16_web.pdf

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Condron, D. J. (2007). Stratification and educational sorting: Explaining ascriptive inequalities in early childhood reading group placement. *Social Problems, 54*, 139-160.

Conradi, K., Amendum, S. J., & Liebfreund, M. D. (2016). Explaining variance in comprehension for students in a high-poverty setting. *Reading & Writing Quarterly, 32*(5), 427-453. doi:10.1080/10573569.2014.994251

Crosnoe, R., & Cooper, C. E. (2010). Economically disadvantaged children's transitions into elementary school: Linking family processes, school contexts, and educational policy. *American Educational Research Journal*, *47*, 258-291. doi:10.3102/0002831209351564

Dearing, E., Walsh, M. E., Sibley, E., Lee-St. John, T., Foley, C., & Raczek, A. E. (2016). Can community and school-based supports improve the achievement of first-generation immigrant children attending high-poverty schools? *Child Development*, *87*, 883-897.

Duncan, G. J., Claessens, A., Huston, A. C., Pagani, L. S., Engel, M., Sexton, H., & ... Duckworth, K. (2007). School readiness and later achievement. *Developmental Psychology*, *43*, 1428-1446. doi:10.1037/0012-1649.43.6.1428

Epps-Robertson, C. (2016). The race to erase Brown v. Board of Education: The Virginia way and the rhetoric of massive resistance. *Rhetoric Review*, *35*(2), 108-120. doi:10.1080/07350198.2016.1142812

Feldman, D. (2012). The relationship of writing and writing instruction with standardized reading scores for secondary students. *Ohio Reading Teacher*, *42*(1), 18-31.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Thousand Oaks, CA: Sage.

Garrett-Peters, P. T., Mokrova, I., Vernon-Feagans, L., Willoughby, M., & Pan, Y. (2016). The role of household chaos in understanding relations between early

poverty and children's academic achievement. *Early Childhood Research Quarterly*, *37*, 16-25. doi:10.1016/j.ecresq.2016.02.004

Harris, L., & Slate, J. R. (2017). Differences in reading by the economic status of Grade 3 Black boys and girls. *Annals of Language and Literature, 2*, 1-8.

Herbers, J. E., Cutuli, J. J., Supkoff, L. M., Heistad, D., Chan, C., Hinz, E., & Masten, A. S. (2012). Early reading skills and academic achievement trajectories of students facing poverty, homelessness, and high residential mobility. *Educational Researcher*, *41*(9), 366-374. doi:10.3102/0013189X12445320

Hernandez, D. J. (2011). *Double jeopardy: How third-grade reading skills and poverty influence high school graduation*. Albany, NY: Annie E. Casey Foundation. Retrieved from https://files.eric.ed.gov/fulltext/ED518818.pdf

Johnson, R. B., & Christensen, L. B. (2012). *Educational research: Quantitative, qualitative, and mixed approaches* (4th ed.) Los Angeles, CA: Sage.

Jones, G., Ostojic, D., Menard, J., Picard, E., & Miller, C. J. (2017). Primary prevention of reading failure: Effect of universal peer tutoring in the early grades. *Journal of Educational Research*, *110*(2), 171-176. doi:10.1080/00220671.2015.1060929

Klecker, B. M. (2006). The gender gap in NAEP fourth-, eighth-, and twelfth- grade reading scores across years. *Reading Improvement, 43*, 50-56.

McGown, J. A. (2016). *Differences in reading performance of Texas elementary school students as a function of economic status, gender, and ethnicity/race: A multiyear statewide study*. Doctoral Dissertation, Sam Houston State University, Huntsville, TX.

Moore, G., Combs, J. P., & Slate, J. R. (2012). Advanced Placement exams participation and performance: A national study of gender differences. *E-International Journal of Educational Research, 3*(3), 18-32.

Mullis, I., Martin, M., Foy, P., & Hooper, M. (2017). *Progress in International Reading Literacy Study*. Retrieved from http://timssandpirls.bc.edu/pirls2016/international-results/wp-content/uploads/structure/CompletePDF/P16-PIRLS-International-Results-in-Reading.pdf

National Center for Children in Poverty. (2017). *Putting research to work for children and families.* Retrieved from http://www.nccp.org/profiles/TX_profile_7.html

National Center for Education Statistics. (2015). *Comparative indicators of education in the United States and other G-20 countries*. Retrieved from https://nces.ed.gov/pubs2016/2016100/ind_15.asp

National Center for Education Statistics. (2017). *Characteristics of children's families*. Retrieved from https://nces.ed.gov/programs/coe/indicator_cce.asp

National Conference for State Legislators. (2018). *Closing the opportunity gap under ESSA*. Retrieved from http://www.ncsl.org/research/education/equity-and-the-opportunity-gap.aspx

Northwestern University. (2008). Boys' and girls' brains are different: Gender differences in language appear biological. *Science Daily*. Retrieved from www.sciencedaily.com/releases/2008/03/080303120346.htm

Olszewski-Kubilius, P., & Corwith, S. (2018). Poverty, academic achievement, and giftedness: A literature review. *Gifted Child Quarterly*, *62*(1), 37-55. doi:10.1177/0016986217738015

PEIMS Data Standards. (2018). *Public Education Information Management System Overview*. Retrieved from

https://tea.texas.gov/Reports_and_Data/Data_Submission/PEIMS/PEIMS_-_Overview/

Quirk, M. P., & Schwanenflugel, P. J. (2004). Do supplemental remedial reading programs address the motivational issues of struggling readers? An analysis of five popular programs. *Reading Research and Instruction, 43*(3), 1-19.

Reardon, S. F., Valentino, R. A., & Shores, K. A. (2012). Patterns of literacy among U.S. students. *The Future of Children, 22*(2), 17-37. doi:10.1353/foc.2012.0015

Rothert, C., (2005). *Achievement gaps and No Child Left Behind*. Retrieved from https://youthlaw.org/publication/achievement-gaps-and-no-child-left-behind/print/

Sadker, D., & Zittleman, K. (2005). *Closing the gender gaps*. Retrieved from https://www.naesp.org/sites/default/files/resources/2/Principal/2005/M-Ap18.pdf

Sáenz, V. (2004). Resources and information for serving minority populations. *New Directions for Community Colleges*, (127), 97-106. doi:10.1002/cc.167

Salinger, T. (2003). Helping older, struggling readers. *Preventing School Failure*, 47(2), 79-85.

Sanchez, C. (2018). *The gap between the science on kids and reading, and how it is taught*. Retrieved from https://www.npr.org/sections/ed/2018/02/12/582465905/the-gap-between-the-science-on-kids-and-reading-and-how-it-is-taught

Schleeter, G. D. (2017). *Differences in the reading achievement of Texas Grade 3 English Language Learners as a function of their economic status, ethnicity/race,*

and gender: A multiyear statewide study. Doctoral Dissertation, Sam Houston State University, Huntsville, TX.

Stinnett, M. (2011). Research in reading. *Illinois Reading Council Journal*, *42*(3), 65-69.

Tach, L. M., & Farkas, G. (2006). Learning-related behaviors, cognitive skills, and ability grouping when schooling begins. *Social Science Research, 35*, 1048-1079.

Texas Classroom Teacher Association. (2014). *Teachers deal with the prevalence of poverty.* Retrieved from https://tcta.org/node/13805-teachers_deal_with_the_prevalence_of_poverty

Texas Education Agency. (2011). *STAAR Reading Resources*. Retrieved from https://tea.texas.gov/student.assessment/staar/reading/

Texas Education Agency. (2013). *Appendix F Supplemental Information for Reporting Ethnicity and Race Data Reporting*. Retrieved from https//tea.texas.gov/WorkArea/DownloadAsset.aspx?id=2147507471

Texas Education Agency. (2016a). *STAAR Performance Level Descriptors*. Retrieved from https://tea.texas.gov/student.assessment/staar/performance-standards/

Texas Education Agency. (2016b). *Student Assessment Division Frequently Asked Questions*. Retrieved from https://tea.texas.gov/student.assessment/staar/

Texas Education Agency. (2017). *The New STAAR Report Card Presentation.* Retrieved from http://www.stamford.esc14.net/page/open/1039/0/Introducing%20the%20New%20STAAR%20Student%20Report-Guide%20for%20Parents%201.pdf

Texas Education Agency. (2018). *About TEA*. Retrieved from https://tea.texas.gov/About_TEA/

The Nations Report Card. (2015). *Mathematics and reading assessment.* Retrieved from

    https://www.nationsreportcard.gov/reading_math_2015/#reading?grade=4

Thoron, A. T., & Myers, B. B. (2011). Impact of gender, ethnicity, year in school, social

    economic status, and state standardized assessment scores on student content

    knowledge achievement when using Vee Maps as a formative assessment tool.

    Journal of Agricultural Education, *52*(1), 85-95. doi:10.5032/jae.2011.01085

Tran, T. D., Luchters, S., & Fisher, J. (2017). Early childhood development: Impact of

    national human development, family poverty, parenting practices and access to

    early childhood education. *Child: Care, Health & Development*, *43*, 415-426.

    doi:10.1111/cch.12395

United States Department of Education. (2005). *Closing the achievement gap*. Retrieved

    from https://www2.ed.gov/about/offices/list/ovae/pi/hs/factsh/ctag_rpt.pdf

United States Department of Education. (2017). *Every Student Succeeds Act*. Retrieved

    from https://www.ed.gov/esea

Wright, L. A., & Slate, J. R. (2015). Differences in critical thinking skills for Texas

    middle school students as a function of economic disadvantage. *Journal of*

    Education Research, 9(4).

Wu, Q., Morgan, P. L., & Farkas, G. (2014). Does minority status increase the effect of

    disability status on elementary schoolchildren's academic achievement? *Remedial*

    & Special Education, *35*(6), 366-377. doi:10.1177/0741932514547644

APPENDIX

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

DATE: July 12, 2018

TO: Latracy Harris [Faculty Sponsor: Dr. John Slate]

FROM: Sam Houston State University (SHSU) IRB

PROJECT TITLE: *Differences in the Reading Performance of Texas Grade 4 Students as a Function of their Economic Status, Gender, and Ethnicity/Race: A Multiyear, Statewide Investigation [T/D]*

PROTOCOL #: 2018-06-41489

SUBMISSION TYPE: INITIAL SUBMISSION

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: July 11, 2018

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

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

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

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

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

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

Sincerely,

Donna Desforges
IRB Chair, PHSC

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

VITA

LaTracy Harris

EDUCATIONAL HISTORY
Doctorate of Education – Educational Leadership (December, 2018)
Sam Houston State University, Huntsville, Texas
Dissertation: Differences in the Reading Performance of Texas Grade 4 Students as a Function of Their Economic Status, Gender, and Ethnicity/Race: A Multiyear, Statewide Investigation

Masters of Education in Administration, EC-12, May 2006
Prairie View A & M University, Prairie View, Texas
Bachelor of Arts in Business Management, May 2002
University of Houston, Houston, Texas

PROFESSIONAL EXPERIENCE
Principal, Beneke Elementary School, Spring ISD, July 2014-present
Associate Principal, Clark Elementary, Spring ISD, June 2013-July 2014
Assistant Principal, Clark Intermediate, Spring ISD, July 2010-June 2013
Testing Coordinator, Clark Intermediate, Spring ISD, July 2008-July 2010
Team Leader, Clark Intermediate, Spring ISD, July 2006-July 2008
Teacher, Clark Intermediate, Spring ISD, July 2004-July 2006
Teacher, Hilliard Elementary, North Forest ISD, August 2002-July 2004

RECOGNITIONS
Principal of the Year, Spring ISD, 2018-2019
TABSE Demonstration School, Houston, TX, 2018-2019

PRESENTATIONS & PUBLICATIONS
Harris, L. V. (2016, November). *Building a culture of collaboration*. Workshop presentation at the annual HAABSE Conference for aspiring principals, Houston, TX.
Harris, L. V. (2017, October). *Differences in reading by the economic status of Grade 3 Black boys and girls*. Paper presented at the Texas Council of Professors of Educational Administration fall meeting, Dallas, TX.
Harris, L.V. (2018, February). *Demonstration school collaborative*. Workshop presentation at the annual TABSE Conference designed to bring together high performing K-12 schools from across the state to share best practices and inspire other school leaders (superintendents, principals, teachers, etc.) to model after these high performing schools, Houston, TX.
Harris, L., & Slate, J. R. (2017). Differences in reading by the economic status of Grade 3 Black boys and girls. *Annals of Language and Literature, 2*, 1-8.