Reading and Mathematics Differences by Juvenile Justice Alternative Education Program Placement for White, Hispanic, and Black Texas Grade 6, 7, and 8 Boys: A Statewide Investigation

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Abstract

Analyzed in this study was the extent to which differences were present in reading and mathematics achievement as a function of Juvenile Justice Alternative Education Program placements for Texas Grades 6, 7, and 8 boys. Inferential statistical procedures, used on data obtained from the Texas Education Agency Public Education Information Management System, yielded statistically significant differences in the academic achievement of White, Hispanic, and Black boys as a function of being placed in a Juvenile Justice Alternative Education Program. White, Hispanic, and Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had statistically significantly lower reading and mathematics performance than their peers who were not assigned to a Juvenile Justice Alternative Education Program placement. Implications, suggestions, and recommendations for policy and practice are provided.

Keywords: Academic Achievement, TAKS Reading, TAKS Mathematics, Texas Middle schools, boys, Juvenile Justice Alternative Education Program placement

In conjunction with documented disparities in student discipline, issues of unfairness based on student ethnicity/race continue to exist with respect to the achievement gap. Researchers such as Latimore, Peguero, Popp, Shekarkhar, and Koo (2017) contend that school-based discipline can have negative effects on the academic outcomes of students, specifically for racial/ethnic minorities. Henkel, Slate, and Martinez-Garcia (2015) asserted that students who are removed from the learning environment to serve discipline consequences experience learning deficits in comparison to their peers who are not removed from their regular classroom setting. As such, exclusionary discipline practices may have long-term consequences on student academic achievement.

Increased levels of school suspension are associated with lower student academic achievement (Morris & Perry, 2017). Depending on the length of the suspension, students can be denied access to their regular classroom setting from one class period up to 10 days or more (Gregory & Weinstein, 2008). Researchers (e.g., Fieldman & Matjasko, 2005; Skiba, Michael, Nardo, & Peterson, 2002) have clearly established that students who are assigned discipline consequences that exclude them from school are more likely to receive failing grades, drop out, become academically disengaged, experience diminished self-worth, and eventually become incarcerated. Congruent with the negative effects of school-based discipline, racial/ethnic inequities in the assignment of school consequences may continue to marginalize the very group of students who already struggle with other educational barriers (Kozol, 2005; Kupchik, 2010; Lunenburg, 2013; Noguera, 2003; Rios, 2011). In addition to being the most underprivileged, underserved, the most alienated, and the most likely to attend struggling schools (Gordon, Della Piana, & Keleher, 2001), Black and Hispanic male students are also the most socially and academically marginalized in public schools in the United States (Brown, 2007). Messages of civic and social disengagement are conveyed when certain groups of students are singled out or treated different from their peers as a result of their economic status or ethnicity/race.

The continuation of removing students from their learning environment not only violates their civil rights (Office for Civil Rights, 2014), but it exacerbates their social, emotional, and academic conditions (Skiba& Noam, 2002).

As mandated by the No Child Left Behind Act (2001), all public schools were obligated to exhibit progress regarding reducing the achievement gap among ethnic/racial groups and their White peers (Wenglinsky, 2004). However, the absence of a robust curriculum and ineffective instruction are present in schools embedded in high poverty communities, often consisting of high percentages of Black and Hispanic students (McLoyd & Purtell, 2008), thus increasing the risk for Black and Hispanic students to perform poorly and to be referred for special education placement. The extensive inequitable practices of excluding students from school, particularly Black and Hispanic students, as an initial discipline consequence have contributed to the achievement gap (Gregory, Skiba, &Noguera, 2010; Krezmien, Leone, & Achilles, 2006). The negative effects of lost academic instruction due to exclusionary discipline practices in schools have been well documented in the literature (Gregory et al., 2010; Lo &Cartledge, 2006; Townsend, 2000; Vincent, Swain-Bradway, Tobin, &May, 2011).

Many researchers (e.g., American Psychological Association Zero Tolerance Task Force, 2008; Gregory & Weinstein, 2008; Skiba& Peterson, 2000; Townsend, 2000) contended that suspensions were more likely assigned to boys who were at risk of failing, receiving special education services, economically disadvantaged, and/or involved in the criminal justice system (Bradshaw, Mitchell, O'Brennan, & Leaf, 2010). After multiple occurrences of being excluded from school, students are eventually assigned to take remedial courses, perceived as a behavior problem, referred to special education; and as a result, they develop a negative outlook about school, eventually become truant and likely drop out (Gregory et al., 2010; Noguera, 2003; Skiba& Peterson, 2000; Townsend, 2000).

Historically, Black boys receive exclusionary consequences that lead to them missing school. If repeatedly exposed to exclusionary consequences, Black boys may establish a pattern of academic failure and become a constant behavior problem (Gregory & Weinstein, 2008). The National Center for Education Statistics (2014) identified gaps in reading and mathematics achievement for Black students, with the greatest disproportion for Black males. Taken from the National Center for Education Statistics (2014) report, less than 10% of Grade 8 Black boys scored at or above proficient levels in reading compared to 33% of Grade 8 White boys who scored at or above proficient levels in reading. Moreover, 17% of Grade 4 Black students scored at or above proficient levels in reading compared to 34% of Grade 4 white students who scored at or above proficient levels in reading.
In a study in the state of interest for this article, Texas, Hilberth (2010) conducted a statewide 1-year investigation to determine the degree to which the assignment of in-school suspension, out-of-school suspension, and Disciplinary Alternative Education Program placement influenced the academic achievement of Black and White students enrolled in Texas middle schools during the 2008-2009 school year. Hilberth (2010) documented the presence of statistically significant lower Texas Assessment of Knowledge and Skills Reading and Mathematics scores for Grades 6, 7, and 8 Black and White students who were assigned any of the three discipline consequences listed. Of particular relevance to this article were the lower reading and mathematics test scores of Grades 6, 7, and 8 Black and White students who were assigned to a Disciplinary Alternative Education Program placement in comparison to their peers who were not assigned such a discipline consequence.

In a more recent Texas investigation, Jones (2013) conducted a statewide 2-year study to determine the degree to which the assignment of in-school suspension, out-of-school suspension, and Disciplinary Alternative Education Program placement affected the academic achievement of Hispanic and White students enrolled in Texas middle schools during the 2008-2009 and 2010-2011 school years. Jones (2013) established the presence of statistically significant lower Texas Assessment of Knowledge and Skills Reading and Mathematics scores for Grades 6, 7, and 8 Hispanic and White students who were assigned any of the three discipline consequences mentioned. Of specific relevance to this article were the poorer reading and mathematics test scores of Grades 6, 7, and 8 Hispanic and White students who were assigned to a Disciplinary Alternative Education Program placement in comparison to their peers who were not assigned such a consequence.

In both the Hilberth (2010) and the Jones (2013) investigations, the assignment to any of the three discipline consequences had a negative effect on student reading and mathematics achievement. Mathematics test scores were more adversely influenced than were student reading test scores.

Of note for this article was that assignment to a Disciplinary Alternative Education Program placement had a negative effect on student mathematics test scores than on reading test scores.

In an even more recent empirical analysis, Henkel, Slate, and Martinez-Garcia (2015) conducted a Texas statewide 2-year study to ascertain the extent to which a relationship existed between a Disciplinary Alternative Education Program placement and the reading and mathematics achievement of Grades 6, 7 and 8 White, Black, and Hispanic students. Henkel et al. (2015) documented the presence of statistically significantly lower Texas Assessment of Knowledge and Skills Reading and Mathematics scores of Grades 6, 7, and 8 White, Hispanic, and Black boys who were assigned to a Disciplinary Alternative Education Program placement than their peers who did not receive such a consequence. Their results were commensurate for both school years of data they analyzed. Of interest in their investigation, Henkel et al. (2015) contended that ethnicity/race and grade level were not as influential on the mathematics performance of boys as was the assignment of a Disciplinary Alternative Education Program placement.

The Texas Education Agency (2015) reported Texas statewide school enrollment of almost 5.5 million students for the 2015-2016 school year. With respect to the numbers of students who were assigned a discipline consequence, out of 2,491 students in Texas who were assigned to a Juvenile Justice Alternative Education Program in the 2015-2016 school year, 2,013 of the students were students who were at risk, whereas only 310 of the students were students who were not at risk. Additionally, of the 3,824 students who were expelled from their school district, 2,972 of the students expelled were students who were at risk, whereas only 554 of the students expelled were not at risk (Texas Education Agency, 2015).

Statement of the Problem

As documented in the empirical research literature (Carrell & Hoekstra, 2010; Dickinson & Miller, 2006; Hilberth, 2010; Jones, 2013; Luiselli, Putnam, Handler, & Feinberg, 2005; Lunenburg, 2013; Skiba& Peterson, 2000; Wallace, Goodkind, Wallace, & Bachman, 2008; Witt, 2007), extensive evidence exist regarding the relationship between school disciplinary consequences and academic achievement, specifically by student ethnicity/race. Vincent, Frank, Hawk, and Tobin (2012) contended the academic performance of Black and Hispanic students is directly influenced by the exclusionary discipline consequences they receive. However, Henkel et al. (2015) argued limited evidence exists regarding student gender within ethnic/racial groupings, regarding school discipline consequences and their relationships to student academic achievement. In none of the studies that were examined for this article was the discipline consequence of Juvenile Justice Alternative Education Program placement addressed. In all of the investigations that were analyzed, only the major school consequences of in-school suspension, out-of-school suspension, and Disciplinary Alternative Education Program placement were examined. As such, the results of this proposed empirical investigation will add to the literature concerning the extent to which an assignment to a Juvenile Justice Alternative Education Program influences the reading and mathematics achievement of White, Black, and Hispanic boys. Findings from this study may provide useful information to educational leaders and policymakers.

Purpose of the Study

The purpose of this study was to ascertain the degree to which differences might be present in the reading and mathematics achievement of Grades 6, 7, and 8 boys who were assigned to a Juvenile Justice Alternative Education Program placement from their counterparts who were not assigned this discipline consequence. This determination was conducted separately for Grade 6, 7, and 8 boys. Moreover, the relationship of Juvenile Justice Alternative Education Program placement with reading and mathematics achievement were ascertained separately for White, Hispanic, and Black boys. As such, the extent to which consistencies were present with respect to the effect of a Juvenile Justice Alternative Education Program placement on boys reading and mathematics achievement were addressed.

Significance of the Study

In this study, the degree to which assignment to a Juvenile Justice Alternative Education Program placement was related to the academic achievement (i.e., reading and mathematics) of Texas Grade 6, 7, and 8 boys were analyzed for the 2010-2011 school year. For Grades 6, 7, and 8 White, Hispanic, and Black boys, the extent to which their reading and mathematics performance might be influenced by their assignment to a Juvenile Justice

Alternative Education Program placement was determined. Given the importance of education, discipline practices that remove students from school create concerns of their civil liberties being violated. Therefore, results of this study may yield evidence of the effects of a particular discipline consequence assignment on the reading and mathematics achievement of White, Hispanic, and Black boys. Information obtained from the inferential statistical analyses conducted herein may assist educational leaders and policymakers in reviewing the efficacy of their discipline policies.

Research Questions

The following research questions was addressed in this investigation: (a) What is the effect of a Juvenile Justice Alternative Education Program placement on the academic achievement (i.e., reading and mathematics) of Grade 6 boys?; (b) What is the effect of a Juvenile Justice Alternative Education Program placement on the academic achievement (i.e., reading and mathematics) of Grade 7 boys?; and (c) What is the effect of a Juvenile Justice Alternative Education Program placement on the academic achievement (i.e., reading and mathematics) of Grade 8 boys? These three questions were examined for the 2010-2011 school year and were conducted separately for the three major ethnic/racial groups (i.e., White, Hispanic, and Black) of boys in Texas.

Method

Research Design

In this investigation, a non-experimental, causal comparative research design was employed (Creswell, 2009; Johnson & Christensen, 2012). The data that were analyzed herein constitute, previously obtained statewide archival data from the Texas Education Agency Public Education Information Management System. Because both the independent variable and the dependent variables had already occurred, extraneous variables were not controlled in this investigation. The data include reading and mathematics achievement test scores and whether or not Grades 6, 7, and 8 boys had received a Juvenile Justice Alternative Education Program placement. Therefore, the independent variable of a Juvenile Justice Alternative Education Program placement was comprised of two groups: boys who received such a placement and boys who did not receive this consequence. The dependent variables consisted of reading and mathematics test scores for the 2010-2011 school year.

Participants

Students for whom data were analyzed were all Grade 6, 7, and 8 boys in Texas middle schools in the 2010-2011 school year. In the sample whose data were analyzed herein were boys who were assigned a Juvenile Justice Alternative Education Program placement, as well as boys who did not receive this consequence. The ethnicity/race of three groups of boys was obtained: White, Hispanic, and Black, because these three ethnic/racial groups constitute the majority of the student population in Texas.

Instrumentation

Specific information that was analyzed was test scores on the state-mandated assessments at that time in reading and mathematics. Only one year of available Texas statewide assessment data were obtained from the Texas Education Agency for the 2010-2011 school year. The Texas Assessment of Knowledge and Skills (TAKS) is a comprehensive public school testing program that is designed to measure the ability to which a student has learned, understand, and is able to apply the concepts and skills expected of them at each tested grade level (Texas Education Agency, 2011a, para. 87). Data on middle school campuses that were private schools or charter schools were not analyzed in this investigation because they are not traditional public schools.

For this study, the following variables were of interest: Juvenile Justice Alternative Education Program placements and reading and mathematics test scores. Traditional reliability and validity concepts are not applicable for Juvenile Justice Alternative Education Program placements because such assignments are reported to the Texas Education Agency by each school campus. Readers are directed to the Texas Education Agency website for detailed score reliabilities and score validities on the Texas Assessment of Knowledge and Skills assessments.

Results

Prior to conducting inferential statistics to determine whether a statistically significant difference was present in the TAKS Reading and Mathematics performance of boys who had been assigned to a Juvenile Justice Alternative Education Program placement, checks were conducted to determine the extent to which the data were normally distributed. Of the standardized skewness coefficients (i.e., the skewness value divided by its standard error) and the standardized kurtosis coefficients (i.e., the kurtosis value divided by its standard error), all were within the limits of normality, +/- 3 (Onwuegbuzie& Daniel, 2002). Accordingly, parametric independent samples *t*-tests were conducted to answer the three research questions. Independent samples *t*-tests are an appropriate inferential statistical procedure to calculate when the independent variable (i.e., received or did not receive a Juvenile Justice Alternative Education Program placement)is dichotomous and the dependent variables (i.e., TAKS Reading and Mathematics test scores)are at the interval/ratio level of measurement (Slate & Rojas-Le Bouef, 2011).

Research Question One Results for Grade 6 White Boys

The first analyses were conducted for Grade 6 White boys. For the first research question, a statistically significant difference was present in the TAKS Reading raw scores of Grade 6 White boys, $t(23.01) = -4.22$, $p < .001$. This difference represented a small effect size (Cohen's *d*) of 0.46 (Cohen, 1988). Grade 6 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average score that was almost nine points lower than the average raw score of Grade 6 White boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Table 1 contains the descriptive statistics for this analysis.

Table 1 Descriptive Statistics for the TAKS Reading Test Scores by Juvenile Justice Alternative Education Program Placement of Grade 6 White, Hispanic, and Black Boys

Ethnicity/Race	Received Assignment		Did Not Receive Assignment	
	M	*SD*	*M*	*SD*
White	26.67	10.32	35.57	6.60
Hispanic	25.04	10.41	32.12	8.06
Black	22.13	10.84	31.96	7.86

With respect to the TAKS Mathematics raw scores, a statistically significant difference was present, $t(23.01) = -5.34$, $p < .001$. This difference represented a moderate effect size (Cohen's *d*) of 0.53 (Cohen, 1988). Grade 6 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost 12 points lower than the average raw score of Grade 6 White boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Descriptive statistics for this analysis are contained in Table 2.

Table 2 Descriptive Statistics for the TAKS Mathematics Test Scores by Juvenile Justice Alternative Education Program Placement of Grade 6 White, Hispanic, and Black Boys

Ethnicity/Race	Received Assignment		Did Not Receive Assignment	
	M	*SD*	*M*	*SD*
White	25.42	10.62	37.11	8.08
Hispanic	22.47	9.73	33.64	9.09
Black	20.57	9.99	31.20	9.46

Research Question One Results for Grade 6 Hispanic Boys

For Grade 6 Hispanic boys, a statistically significant difference was present in the their TAKS Reading raw scores, $t(99.13) = -6.80$, $p < .001$. This difference represented a small effect size (Cohen's *d*) of 0.36 (Cohen, 1988). Grade 6 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost eight points lower than the average raw scores of Grade 6 Hispanic boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Delineated in Table 1 are the descriptive statistics for this analysis.Regarding the TAKS Mathematics raw scores, a statistically significant difference was yielded, $t(99.19) = -11.46$, $p < .001$. This difference represented a moderate effect size (Cohen's *d*) of 0.51 (Cohen, 1988). Grade 6 Hispanic boys who were assigned to a Juvenile Justice Alternative Education

Program placement had an average raw score that was more than 11 points lower than the average raw score of Grade 6 Hispanic boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Contained in Table 2 are the descriptive statistics for this analysis.

Research Question One Results for Grade 6 Black Boys

In reference to Grade 6 Black boys, a statistically significant difference was present in their TAKS Reading raw scores, $t(45.09) = -6.14$, $p < .001$. This difference represented a small effect size (Cohen's d) of 0.46 (Cohen, 1988). Grade 6 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost 10 points lower than the average raw score of Grade 6 Black boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Descriptive statistics for this analysis are presented in Table 1.

With respect to the TAKS Mathematics raw scores, a statistically significant difference was revealed, $t(45.16) = -7.21$, $p < .001$. This difference represented a small effect size (Cohen's d) of 0.48 (Cohen, 1988). Grade 6 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost 11 points lower than the average raw score of Grade 6 Hispanic boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Contained in Table 2 are the descriptive statistics for this analysis.

Research Question Two Results for Grade 7 White Boys

Regarding Grade 7 White boys, a statistically significant difference was present in their TAKS Reading raw scores, $t(62.05) = -5.55$, $p < .001$. This difference represented a small effect size (Cohen's d) of 0.38 (Cohen, 1988). Grade 7 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was more than nine points lower than the average raw score of Grade 7 White boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Revealed in Table 3 are the descriptive statistics for this analysis.

Table 3 Descriptive Statistics for the TAKS Reading Test Scores by Juvenile Justice Alternative Education Program Placement of Grade 7 White, Hispanic, and Black Boys

Ethnicity/Race	Received Assignment		Did Not Receive Assignment	
	M	*SD*	*M*	*SD*
White	30.43	13.19	39.66	8.34
Hispanic	25.31	13.49	35.01	9.93
Black	22.10	12.56	34.13	9.73

With respect to the TAKS Mathematics raw scores, a statistically significant difference was yielded, $t(62.09) = -8.57$, $p < .001$. This difference represented a moderate effect size (Cohen's d) of 0.51 (Cohen, 1988). Grade 7 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was more than 12 points lower than the average raw score of Grade 7 White boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Presented in Table 4 are the descriptive statistics for this analysis.

Table 4 Descriptive Statistics for the TAKS Mathematics Test Scores by Juvenile Justice Alternative Education Program Placement of Grade 7 White, Hispanic, and Black Boys

Ethnicity/Race	Received Assignment		Did Not Receive Assignment	
	M	*SD*	*M*	*SD*
White	24.08	11.36	36.35	9.25
Hispanic	20.55	11.94	32.24	10.06
Black	18.13	10.98	29.21	10.21

Research Question Two Results for Grade 7 Hispanic Boys

For Grade 7 Hispanic boys, a statistically significant difference was present in their TAKS Reading raw scores, $t(223.60) = -10.74$, $p < .001$. This difference represented a small effect size (Cohen's d) of 0.38 (Cohen, 1988). Grade 7 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost 10 points lower than the average raw score of Grade 7 Hispanic boys who were

not assigned to a Juvenile Justice Alternative Education Program placement. Delineated in Table 3 are the descriptive statistics for this analysis.

Concerning the TAKS Mathematics raw scores, a statistically significant difference was revealed, $t(223.79) = -14.64$, $p < .001$. This difference represented a moderate effect size (Cohen's d) of 0.47 (Cohen, 1988). Grade 7 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost 12 points lower than the average raw score of Grade 7 Hispanic boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Table 4 contains the descriptive statistics for this analysis.

Research Question Two Results for Grade 7 Black Boys

With regard to Grade 7 Black boys, a statistically significant difference was present in their TAKS Reading raw scores, $t(79.32) = -8.56$, $p < .001$. This difference represented a small effect size (Cohen's d) of 0.47 (Cohen, 1988). Grade 7 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was more than 12 points lower than the average raw score of Grade 7 Black boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Descriptive statistics for this analysis are contained in Table 3.

In reference to the TAKS Mathematics raw scores,, a statistically significant difference was yielded, $t(79.46) = -9.01$, $p < .001$. This difference represented a small effect size (Cohen's d) of 0.46 (Cohen, 1988). Grade 7 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was more than 11 points lower than the average raw score of Grade 7 Black boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Revealed in Table 4 are the descriptive statistics for this analysis.

Research Question Three Results for Grade 8 White Boys

Regarding Grade 8 White boys, a statistically significant difference was present in their TAKS Reading raw scores, $t(73.08) = -4.01$, $p < .001$. This difference represented a small effect size (Cohen's d) of 0.27 (Cohen, 1988). Grade 8 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost five points lower than the average raw score of Grade 8 White boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Descriptive statistics for this analysis are presented in Table 5.

Table 5 Descriptive Statistics for the TAKS Reading Test Scores by Juvenile Justice Alternative Education Program Placement of Grade 8 White, Hispanic, and Black Boys

Ethnicity/Race	Received Assignment		Did Not Receive Assignment	
	M	*SD*	*M*	*SD*
White	37.45	10.65	42.41	6.89
Hispanic	29.61	13.76	38.52	9.92
Black	29.20	13.92	38.41	8.82

With respect to the TAKS Mathematics raw scores, a statistically significant difference was yielded, $t(73.12) = -5.92$, $p < .001$. This difference represented a small effect size (Cohen's d) of 0.35 (Cohen, 1988). Grade 8 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost eight points lower than the average raw score of Grade 8 White boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Table 6 contains the descriptive statistics for this analysis.

Table 6 Descriptive Statistics for the TAKS Mathematics Test Scores by Juvenile Justice Alternative Education Program Placement of Grade 8 White, Hispanic, and Black Boys

Ethnicity/Race	Received Assignment		Did Not Receive Assignment	
	M	*SD*	*M*	*SD*
White	30.46	11.04	38.06	9.12
Hispanic	22.00	10.23	33.36	10.89
Black	20.46	10.46	31.01	10.03

Research Question Three Results for Grade 8 Hispanic Boys

For Grade 8 Hispanic boys, a statistically significant difference was present in their TAKS Reading raw scores, $t(322.24) = -11.60$, $p < .001$. This difference represented a small effect size (Cohen's *d*) of 0.35 (Cohen, 1988). Grade 8 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost nine points lower than the average raw score of Grade 8 Hispanic boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Descriptive statistics for this analysis are presented in Table 5.

Regarding the TAKS Mathematics raw scores, a statistically significant difference was yielded, $t(323.71) = -19.89$, $p < .001$. This difference represented a small effect size (Cohen's *d*) of 0.47(Cohen, 1988). Grade 8 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost 12 points lower than the average raw score of Grade 8 Hispanic boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Delineated in Table 6 are the descriptive statistics for this analysis.

Research Question Three Results for Grade 8 Black Boys

With regard to Grade 8 Black boys, a statistically significant difference was present in their TAKS Reading raw scores, $t(95.32) = -6.48$, $p < .001$. This difference represented a small effect size (Cohen's *d*) of 0.37 (Cohen, 1988). Grade 8 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was more than nine points lower than the average raw score of Grade 8 Black boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Descriptive statistics for this analysis are delineated in Table 5.

In reference to the TAKS Mathematics raw scores, a statistically significant difference was yielded, $t(95.72) = -9.87$, $p < .001$. This difference represented a small effect size (Cohen's *d*) of 0.46 (Cohen, 1988). Grade 8 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score that was almost 11 points lower than the average raw score of Grade 8 Black boys who were not assigned to a Juvenile Justice Alternative Education Program placement. Contained in Table 6 are the descriptive statistics for this analysis.

Summary of Results across Grade Levels and Ethnic/Racial Groups

Across the three grade levels that were analyzed and across the three ethnic/racial groups of boys, the academic achievement of boys was statistically significantly related to whether or not they were assigned to a Juvenile Justice Alternative Education Program. In all analyses, White, Hispanic, and Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had statistically significantly lower average TAKS Reading and Mathematics raw scores than White, Hispanic, and Black boys who were not assigned to a Juvenile Justice Alternative Education Program placement. In almost all of the analyses, the TAKS Mathematics raw scores were more adversely affected than were the TAKS Reading raw scores.

Discussion

Analyzed in this investigation was the extent to which differences were present in the reading and mathematics performance of Grades 6, 7, and 8 boys as a function of whether or not they were assigned to a Juvenile Justice Alternative Education Program placement. One year of Texas statewide TAKS Reading and Mathematics data for Grades 6, 7, and 8 White, Hispanic, and Black boys who received or did not receive a Juvenile Justice Alternative Education Program placement were analyzed. Statistically significant results were yielded in all grade levels. Results will now be summarized.

Summary of Results on the Grade 6 TAKS Reading and Mathematics Test Scores

In the 2010-2011 school year, Grade 6 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had a statistically significantly lower average raw score on their TAKS Reading and Mathematics exams than Grade 6 White boys who were not assigned this discipline consequence. Grade 6 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of nine points lower on their TAKS Reading exam than Grade 6 White boys who were not assigned this discipline consequence.

Additionally, Grade 6 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 12 points lower on their TAKS Mathematics exam than Grade 6 White boys who were not assigned this discipline consequence.

In the 2010-2011 school year, Grade 6 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had a statistically significantly lower average raw score on their TAKS Reading and Mathematics exams than Grade 6 Hispanic boys who were not assigned this discipline consequence. Grade 6 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of eight points lower on their TAKS Reading exam than Grade 6 Hispanic boys who were not assigned this discipline consequence. Additionally, Grade 6 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 11 points lower on their TAKS Mathematics exam than Grade 6 Hispanic boys who were not assigned this discipline consequence.

In the 2010-2011 school year, Grade 6 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had a statistically significantly lower average raw scoreon their TAKS Reading and Mathematics exams than Grade 6 Black boys who were not assigned this discipline consequence. Grade 6 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 10 points lower on their TAKS Reading exam than Grade 6 Black boys who were not assigned this discipline consequence. Additionally, Grade 6 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 11 points lower on their TAKS Mathematics exam than Grade 6 Black boys who were not assigned this discipline consequence.

Summary of Results on the Grade 7 TAKS Reading and Mathematics Raw Scores

In the 2010-2011 school year, Grade 7 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had a statistically significantly lower average raw scoreon their TAKS Reading and Mathematics exams than Grade 7 White boys who were not assigned this discipline consequence. Grade 7 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of nine points lower on their TAKS Reading exam than Grade 7 White boys who were not assigned this discipline consequence. Additionally, Grade 7 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 12 points lower on their TAKS Mathematics exam than Grade 7 White boys who were not assigned this discipline consequence.

In the 2010-2011 school year, Grade 7 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had a statistically significantly lower average raw scoreon their TAKS Reading and Mathematics exams than Grade 7 Hispanic boys who were not assigned this discipline consequence. Grade 7 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 10 points lower on their TAKS Reading exam than Grade 7 Hispanic boys who were not assigned this discipline consequence. Additionally, Grade 7 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 12 points lower on their TAKS Mathematics exam than Grade 7 Hispanic boys who were not assigned this discipline consequence.

In the 2010-2011 school year, Grade 7 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had a statistically significantly lower average raw scoreon their TAKS Reading and Mathematics exams than Grade 7 Black boys who were not assigned this discipline consequence. Grade 7 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 12 points lower on their TAKS Reading exam than Grade 7 Black boys who were not assigned this discipline consequence. Additionally, Grade 7 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 11 points lower on their TAKS Mathematics exam than Grade 7 Black boys who were not assigned this discipline consequence.

Summary of Results on the Grade 8 TAKS Reading and Mathematics Raw Scores

In the 2010-2011 school year, Grade 8 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had a statistically significantly lower average raw scoreon their TAKS Reading and Mathematics exams than Grade 8 White boys who were not assigned this discipline consequence.

Grade 8 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of five points lower on their TAKS Reading exam than Grade 8 White boys who were not assigned this discipline consequence. Additionally, Grade 8 White boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of eight points lower on their TAKS Mathematics exam than Grade 8 White boys who were not assigned this discipline consequence.

In the 2010-2011 school year, Grade 8 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had a statistically significantly lower average raw scoreon their TAKS Reading and Mathematics exams than Grade 8 Hispanic boys who were not assigned this discipline consequence. Grade 8 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of nine points lower on their TAKS Reading exam than Grade 8 Hispanic boys who were not assigned this discipline consequence. Additionally, Grade 8 Hispanic boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 11 points lower on their TAKS Mathematics exam than Grade 8 Hispanic boys who were not assigned this discipline consequence.

In the 2010-2011 school year, Grade 8 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had a statistically significantly lower average raw scoreon their TAKS Reading and Mathematics exams than Grade 8 Black boys who were not assigned this discipline consequence. Grade 8 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of nine points lower on their TAKS Reading exam than Grade 8 Black boys who were not assigned this discipline consequence. Additionally, Grade 8 Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had an average raw score of 11 points lower on their TAKS Mathematics exam than Grade 8 Black boys who were not assigned this discipline consequence.

Connections with Existing Literature

In this statewide investigation, the reading and mathematics achievement of boys who were assigned to a Juvenile Justice Alternative Education Program placement were examined. Results were congruent with other researchers (e.g., Hilberth, 2010; Hilberth & Slate, 2012, 2014; Latimore, Peguero, Popp, Shekarkhar, & Koo, 2017) who documented that the assignment of school-based discipline consequences can negatively influence the academic achievement of students. Results of this investigation were also in agreement with Henkel, Slate, and Martinez-Garcia (2015) who established that students who are removed from school as a discipline consequences experience learning deficits compared to students who are not removed from school. Finally, findings established herein were commensurate with Hilberth (2010), Hilberth and Slate (2012, 2014) who documented in Texas that mathematics test scores were more adversely influenced by receipt of a discipline consequence than were reading test scores.

Implications for Policy and for Practice

Based on the results of this investigation, school leaders are encouraged to analyze their school discipline data to determine if a relationship exists between their exclusionary discipline consequences and their student academic achievement. If their school discipline data reveal that certain discipline policies and practices are negatively related to student academic performance, then the revision of those discipline policies would merit consideration. A second implication for school leaders is to examine the influence of instruction on student academic performance at an alternative school setting. As a result of teachers teaching multiple grade levels and subject areas, some of which they are not certified to teach, the Texas Education Agency (2007) indicated the need for more qualified teachers in content areas at alternative school programs. A final implication would be for teachers in alternative school settings and teachers in traditional school settings to have the opportunity to collaborate and plan together to promote well-aligned academic instruction for instructing at-risk students. In a statewide study of the Tennessee state system of alternative schools, Moore and King (2005) indicated the need for common training opportunities for teachers in alternative schools and teacher in regular schools.

Recommendations for Future Research

In this study, the relationship of a Juvenile Justice Alternative Education Program placement to student reading and mathematics achievement for Texas Grade 6, 7, and 8 White, Hispanic, and Black boys for the 2010-2011 school year was examined.

Based upon the results of this study, several recommendations for future research can be made. First, researchers are encouraged to extend this study to other states. The extent of the generalizability of the findings of this study to other states is not known. Second, more years of data need to be analyzed to ascertain whether the results delineated herein on a single school year of data would be generalizable over time. As such, the new Texas state assessment (e.g., the State of Texas Assessment of Academic Readiness) should be analyzed to ascertain whether inequities in achievement are similar on the new state assessment.

A third recommendation for researchers is to replicate this investigation for girls. Results obtained from repeating this study with middle school girls will reveal whether the results are similar across gender groups. Researchers are also encouraged to conduct a similar, but more extensive study using multiple years of data from the new state assessment. Finally, given that this article encompassed test data only on middle school boys, researchers are encouraged to extend this study on data for elementary school students, as well as high school students. Results derived from extending this study to students enrolled in elementary and in high schools will reveal whether academic results are similar across grade levels.

Conclusion

In this statewide analysis, the extent to which inequities were present in the, reading and mathematics achievement of Texas Grade 6, 7, and 8 boys as a function of whether or not they had received a Juvenile Justice Alternative Education Program placement was ascertained. Texas statewide data on all Grade 6, 7, and 8 boys for the 2010-2011 school year were analyzed. Inferential statistical analyses yielded statistically significant differences in reading and mathematics performance of Grade 6, 7, and 8 boys as a function of whether or not they had received a Juvenile Justice Alternative Education Program placement. At all three grade levels, White, Hispanic, and Black boys who were assigned to a Juvenile Justice Alternative Education Program placement had lower average reading and mathematics tests scores than their peers who were not assigned this discipline consequence.

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