

## MEMORANDUM

November 13, 2015

TO: Board Members

FROM: Terry B. Grier, Ed.D.  
Superintendent of Schools

SUBJECT: **PREKINDERGARTEN EDUCATION PROGRAM: EFFECTS OF HISD  
PREKINDERGARTEN ON KINDERGARTEN PERFORMANCE, 2014–2015**

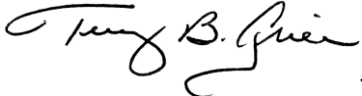
CONTACT: Carla Stevens, (713) 556-6700

The purpose of this evaluation was to evaluate academic performance of students who attended HISD prekindergarten programs with the performance of students who were not enrolled in HISD prekindergarten programs in the previous year. The 2014–2015 IOWA and Logramos English language Arts (ELA) and mathematics subtests were used as the outcome measures to assess the impact of HISD prekindergarten programs on students' academic performance in kindergarten.

Key findings include:

- Effect size indicated that there were no differences in the mean standard scores on both 2014–2015 kindergarten IOWA ELA and mathematics subtests between students who attended HISD prekindergarten programs and their peers who did not attend HISD prekindergarten programs.
- Comparisons by ethnicity subgroup showed that Black students who attended HISD prekindergarten programs outperformed their peers who did not attend HISD prekindergarten programs on the 2014–2015 kindergarten IOWA ELA and mathematics subtests. However, the effect size showed that the magnitude of the differences was small.
- When compared to students who did not attend HISD prekindergarten programs, students who attended HISD prekindergarten programs performed better than their peers on the 2014–2015 kindergarten Logramos ELA and mathematics subtests.
- The performance of students who attended HISD prekindergarten programs outperformed their peers who did not attend HISD prekindergarten programs on the 2014–2015 kindergarten Logramos ELA and mathematics subtests in the following student groups: ethnicity, gender, economically disadvantaged, special education placement, LEP, and at risk.

Should you have any questions or require any further information, please contact Carla Stevens in the Department of Research and Accountability, at 713-556-6700.

  
\_\_\_\_\_ TBG

TBG/CS:lp

cc: Superintendent's Direct Reports  
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School Support Officers  
Lance Menster  
Rachele Vincent  
Janice Dingayan



# RESEARCH

Educational Program Report

**PREKINDERGARTEN EDUCATION PROGRAM:  
EFFECTS OF HISD PREKINDERGARTEN ON KINDERGARTEN  
PERFORMANCE, 2014-2015**



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# PREKINDERGARTEN EDUCATION PROGRAM: EFFECTS OF HISD PREKINDERGARTEN ON KINDERGARTEN PERFORMANCE, 2014–2015

## Executive Summary

### Program Description

In compliance with the Texas Education Code § 29.153, the Houston Independent School District (HISD) has provided free prekindergarten classes for eligible Houston area four-year old students since the 1985–1986 academic year. The program curriculum focuses on beginning literacy, numeracy, social emotional development as well as supporting the individual linguistic and cultural needs of the children served. The prekindergarten program curriculum forms the basis of children’s future academic success. The purpose of this evaluation is to examine the extent that students benefit from attending HISD prekindergarten. To determine the academic benefits of HISD prekindergarten programs, the academic performance of students who attended HISD prekindergarten programs was compared to students who were not enrolled in HISD prekindergarten programs in the previous year. The report will address the following issues:

1. The performance of HISD and Non-HISD prekindergarten students on the 2014–2015 kindergarten IOWA and Logramos ELA and mathematics subtests;
2. The effects of HISD prekindergarten programs on students’ ELA performance by student subgroups; and
3. The effects of HISD prekindergarten programs on students’ mathematics performance by student subgroups.

This evaluation also examined prekindergarten program enrollment trends and the proportion of kindergarten students enrolled in HISD and Non-HISD prekindergarten programs from 2006–2007 to 2014–2015.

### Highlights

- Effect size indicated that there were no differences in the mean standard scores on both 2014–2015 kindergarten IOWA ELA and mathematics subtests between students who attended HISD prekindergarten programs and their peers who did not attend HISD prekindergarten programs.
- Comparisons by ethnicity subgroup showed that Black students who attended HISD prekindergarten programs outperformed their peers who did not attend HISD prekindergarten programs on the 2014–2015 kindergarten IOWA ELA and mathematics subtests. However, the effect size showed that the magnitude of the differences was small.
- When compared to students who did not attend HISD prekindergarten programs, students who attended HISD prekindergarten programs performed better than their peers on the 2014–2015 kindergarten Logramos ELA and mathematics subtests.

- The performance of students who attended HISD prekindergarten programs outperformed their peers who did not attend HISD prekindergarten programs on the 2014–2015 kindergarten Logramos ELA and mathematics subtests in the following student groups: ethnicity, gender, economically disadvantaged, special education placement, LEP, and at risk.

### Recommendations

- HISD may consider modifying its student information database to collect prekindergarten educational placement at students' enrollment in HISD. This will enable district administrators and researchers to determine the full impact of HISD prekindergarten programs with other non-HISD prekindergarten class models and with students who did not attend prekindergarten programs.
- Given findings suggesting that HISD prekindergarten students are benefitting from the program, elementary grade curriculum in the district should consider building on the prekindergarten curriculum to enhance the academic gains made by these students as they progress through elementary school.
- Future evaluations may include social-emotional skill sets such as cooperation, taking directions, self-management, and getting along with others as outcome variables.

### Administrative Response

The HISD Early Childhood Department will continue to certify availability of a high-quality prekindergarten program by implementing a solid curriculum that incorporates recent research on early literacy, mathematical, and social-emotional learning. Relevant, job-embedded training and quality improvement efforts to all prekindergarten teachers and programs will be provided. The department will intensify recruitment efforts to ensure increased enrollment of eligible students for the coming school year. In addition, the HISD Early Childhood Department will continue to develop and provide aligned curriculum, instruction, and assessments to serve the academic needs of prekindergarten students.

## Introduction

Early childhood education researchers have found that high quality prekindergarten programs enhance students' cognitive development and increase academic achievement, particularly for students from disadvantaged backgrounds (Brooks-Gunn, 2003; Currie, 2001; Gormley, Gayer, Phillips, Dawson, 2005; Magnuson, Rhum, and Waldfogel, 2007; Shager et al., 2013). Review of the literature also suggests that the beneficial effects of early childhood interventions are typically much larger for more disadvantaged youth (see Currie, 2001; Magnuson et al., 2007). Despite the improved outcomes for economically-disadvantaged children who attend early childhood programs (i.e., Head Start), their average levels of achievement tend to be lower compared to their non-economically-disadvantaged peers (Currie & Neidell, 2007). The effects of early childhood intervention on low socioeconomic students' academic outcomes are well documented (e.g., Aikens & Barbarin, 2008; Brooks-Gunn, 2003; Chatterji, 2006). The current evaluation examined the effects of Houston Independent School District's (HISD) prekindergarten programs on student academic achievement by taking consideration of students' socioeconomic status, special education placement, Limited English Proficiency (LEP), and at-risk status.

## Methods

### Data Collection and Analysis

- The current analyses focused on the academic performance of the 2014–2015 HISD kindergarten students. These kindergarten students were classified into two groups: HISD and Non-HISD prekindergarten students, based on their prekindergarten enrollment status in 2013–2014. **Table 1** (p. 16) summarizes the demographic characteristics of the 2014–2015 HISD kindergarteners by their prekindergarten enrollment status.
- The English Language Arts (ELA) and mathematics test scores in this evaluation were the 2014–2015 IOWA and Logramos ELA and mathematics subtests.
- Both IOWA and Logramos are norm-referenced assessments, and were administered in December of students' kindergarten year. In order to compare students' scores from subgroups, the standard score was used for all subtests in this evaluation.
- Effect size was used to quantify the size of the performance difference between HISD prekindergarten and Non-HISD prekindergarten students. Borman and D'Agostino (1996) suggested that the average effect size associated with Title I programs is  $d = 0.15$ . Kulik, Kulik, and Bangert (1984) suggested that the average effect size in achievement test score is 0.32. Therefore, the effect size of  $d = 0.15$  was considered as small-modest,  $d = 0.3$  as modest-large, and  $d = 0.5$  as large in this report.
- In this evaluation, analyses were conducted to examine the academic achievement differences on ELA and mathematics subtests between HISD prekindergarten students and Non-HISD prekindergarten students. The following characteristics were explored in determining which student demographics were related to their ELA and mathematics performance. These student characteristics included ethnicity, gender, economically-disadvantaged status, special education placement, LEP, and at-risk status.

## Data Limitations

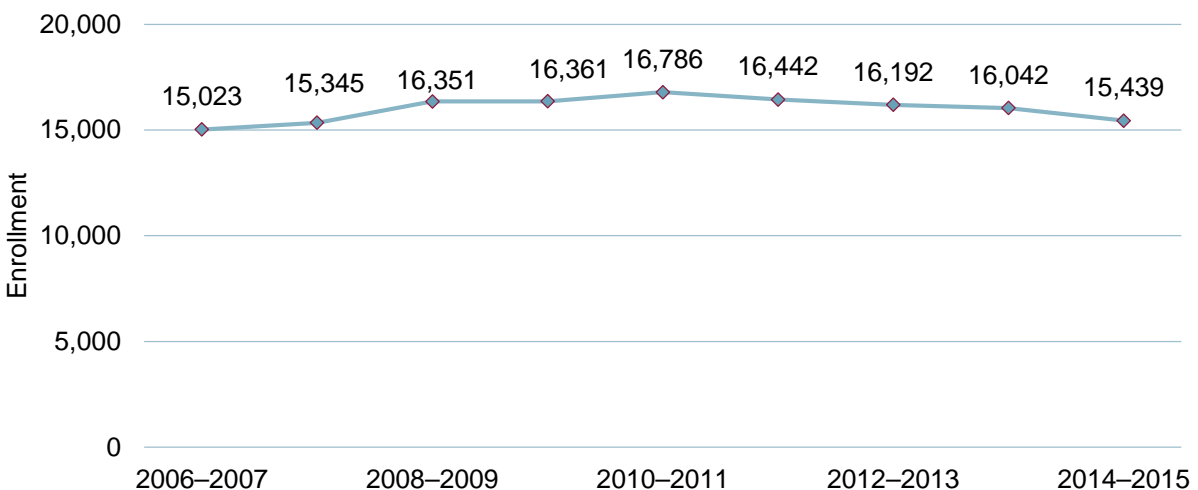
- The Non-HISD prekindergarten students may receive some other form of early childhood intervention before entering HISD kindergarten.
- A randomized experimental design was not implemented to evaluate the effects of HISD prekindergarten on students academic performance; therefore, findings concerning the magnitude of the effect of HISD prekindergarten program on kindergarten performance may be biased.

## Results

### What was the HISD prekindergarten program enrollment trend in the last nine years?

- **Figure 1** presents the prekindergarten enrollment trend of HISD students from 2006–2007 through the 2014–2015 academic years.
- The prekindergarten enrollment decreased from 16,042 in 2013–2014 to 15,439 in 2014–2015, which is a 3.8% drop in the enrollment in 2014–2015 compared to the previous year.

**Figure 1. The 2006–2014 Enrollment Trends of Students Who Attended HISD Prekindergarten**

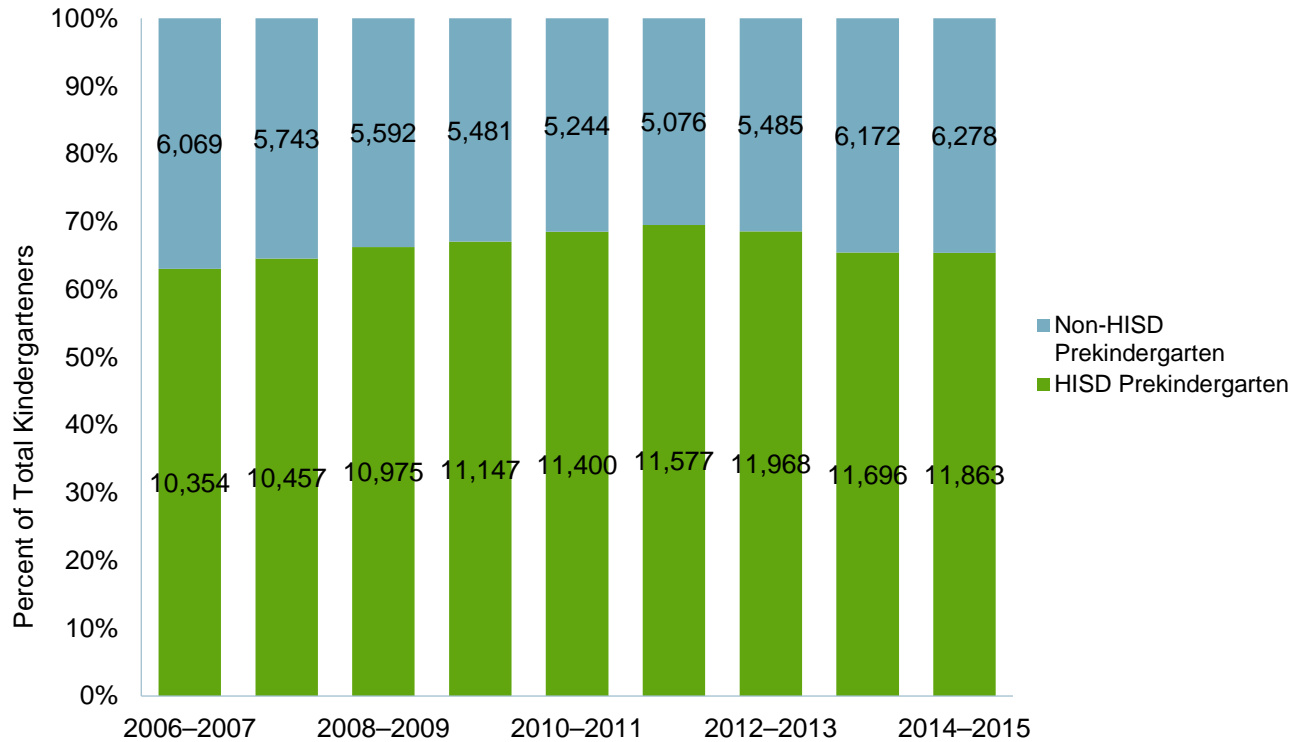




**What was the seven-year trend in the proportion of kindergarten students who were enrolled in HISD prekindergarten the previous year?**

- **Figure 2** depicts the percent of kindergarteners from 2006–2007 through 2014–2015 who were enrolled in an HISD prekindergarten program the previous year.
- The proportion of kindergarteners who attended HISD prekindergarten the previous year increased on average by 1.0 percent annually from 2006–2007 through 2011–2012 with a slight drop from 2011–2012 to 2014–2015.
- In 2006–2007, approximately 63.0% of kindergarteners were enrolled in HISD prekindergarten the previous year. By 2014–2015, the proportion of kindergarteners who attended HISD prekindergarten was 65.4%.

**Figure 2. Seven-year Trend in the Percent and Number of Kindergarteners by Prekindergarten Enrollment in HISD and Non-HISD Perk Programs**



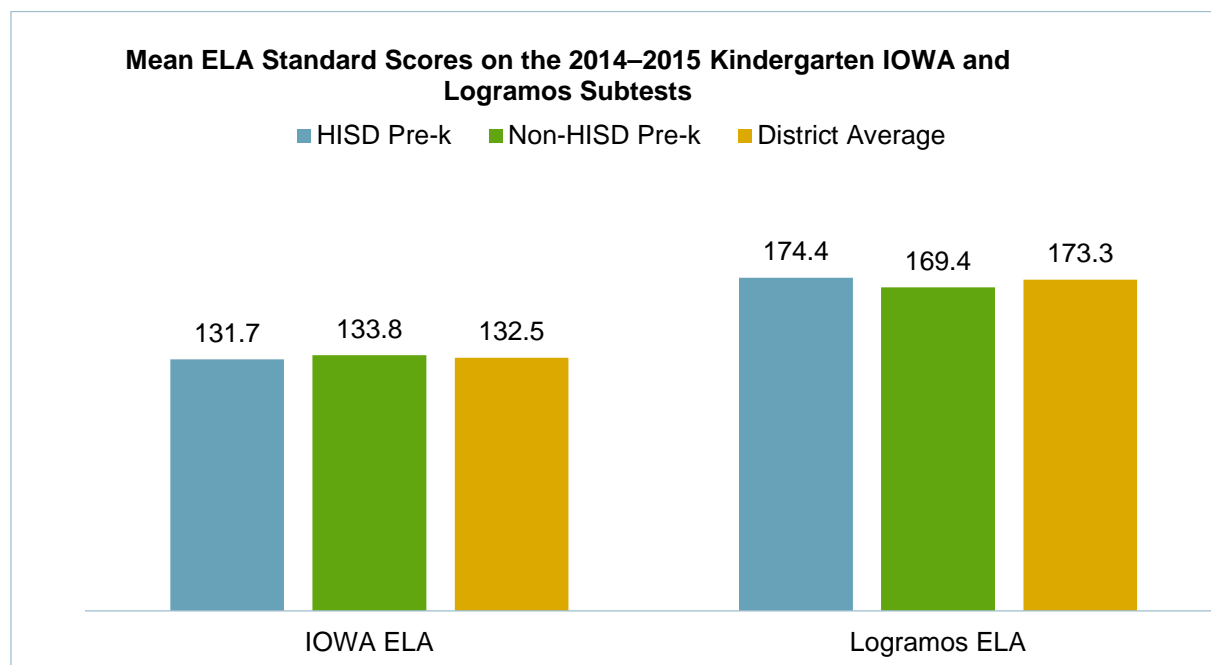
### What were the demographic characteristics of HISD and Non-HISD prekindergarten students?

- The demographic characteristics of HISD and Non-HISD prekindergarten students were similar with respect to gender, special education placement, and at-risk status, but were different relative to ethnicity, economically-disadvantaged status, and LEP status based on their kindergarten enrollment record in 2014–2015 (Table 1, p. 16). Notably, 71.6% of the HISD prekindergarten students were Hispanic, 87.6% were economically disadvantaged, and 52.3% were LEP. These proportions of Hispanic, economically disadvantaged, and LEP students were lower in the Non-HISD prekindergarten sample. There is a lower proportion of Asian (2.2%) and White (2.7%) students in the HISD prekindergarten group than in the Non-HISD prekindergarten group, with Asian (7.5%) and White (18.7%).
- Enrollement in HISD prekindergarten reflects the eligibility criteria. <sup>1</sup>

### How did HISD prekindergarten and Non-HISD prekindergarten students perform on the 2014–2015 kindergarten IOWA and Logramos ELA subtests?

- The kindergarten IOWA and Logramos ELA subtest performance of HISD and Non-HISD prekindergarten students in 2014–2015 was compared by using descriptive statistics, and the results are presented in **Figure 3**. Effect size was used to quantify the performance difference between HISD and Non-HISD prekindergarten students on IOWA and Logramos ELA subtests, and the results were presented in **Tables 2** and **3** (p. 17 & 18). A similar analytic procedure was applied to the IOWA and Logramos mathematics subtest data.

**Figure 3. Mean Standard Scores on the 2014–2015 Kindergarten IOWA and Logramos ELA Subtests for HISD and Non-HISD Prekindergarten Students**

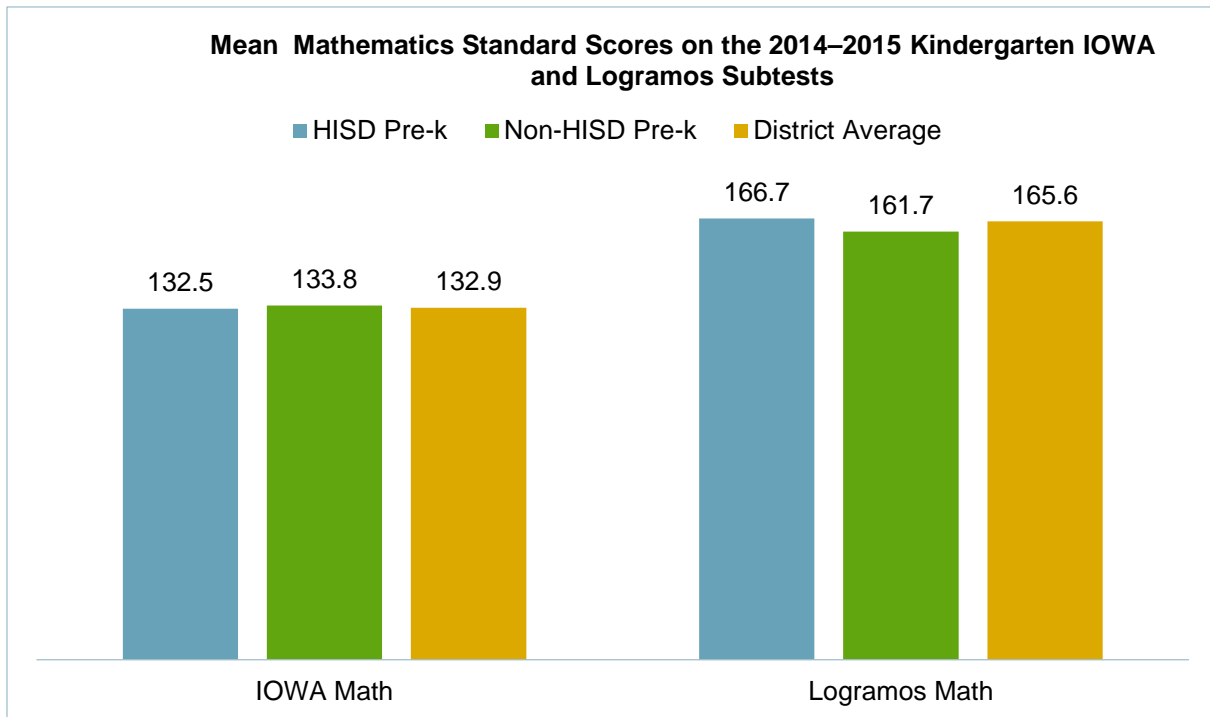


- The HISD prekindergarten students (M = 131.7) obtained a lower mean standard score than Non-HISD prekindergarten students (M = 133.8) on the 2014–2015 kindergarten IOWA ELA subtest with an effect size -0.21. The effect size indicated that the magnitude of the mean score difference was modest (Table 2, p. 17).
- On the 2014–2015 kindergarten Logramos ELA subtest, HISD prekindergarten students (M = 174.4) obtained a higher mean standard score than Non-HISD prekindergarten students (M = 169.4) with an effect size of 0.34. The effect size indicated that the magnitude of the mean score difference was modest (Table 3, p. 18).
- Both HISD prekindergarten students and Non-HISD prekindergarten students obtained comparable mean standard scores as the district’s mean standard score on the 2014–2015 kindergarten IOWA ELA subtest. On the kindergarten Logramos ELA subtest, the HISD prekindergarten students obtained a comparable mean standard score as the district, while the Non-HISD prekindergarten students obtained a lower mean standard score than the district (Figure 3, p. 6).

**How did HISD prekindergarten and Non-HISD prekindergarten students perform on the 2014–2015 kindergarten IOWA and Logramos mathematics subtests?**

- The HISD prekindergarten students (M = 132.5) obtained a lower mean standard score than Non-HISD prekindergarten students (M = 133.8) on the 2014–2015 kindergarten IOWA mathematics subtest with an effect size -0.12. The effect size indicated that the magnitude of the mean score difference was negligible (Table 4, p. 19).

**Figure 4. Mean Standard Scores of Students on the 2014–2015 Kindergarten IOWA and Logramos Mathematics Subtests for HISD and Non-HISD Prekindergarten Students**



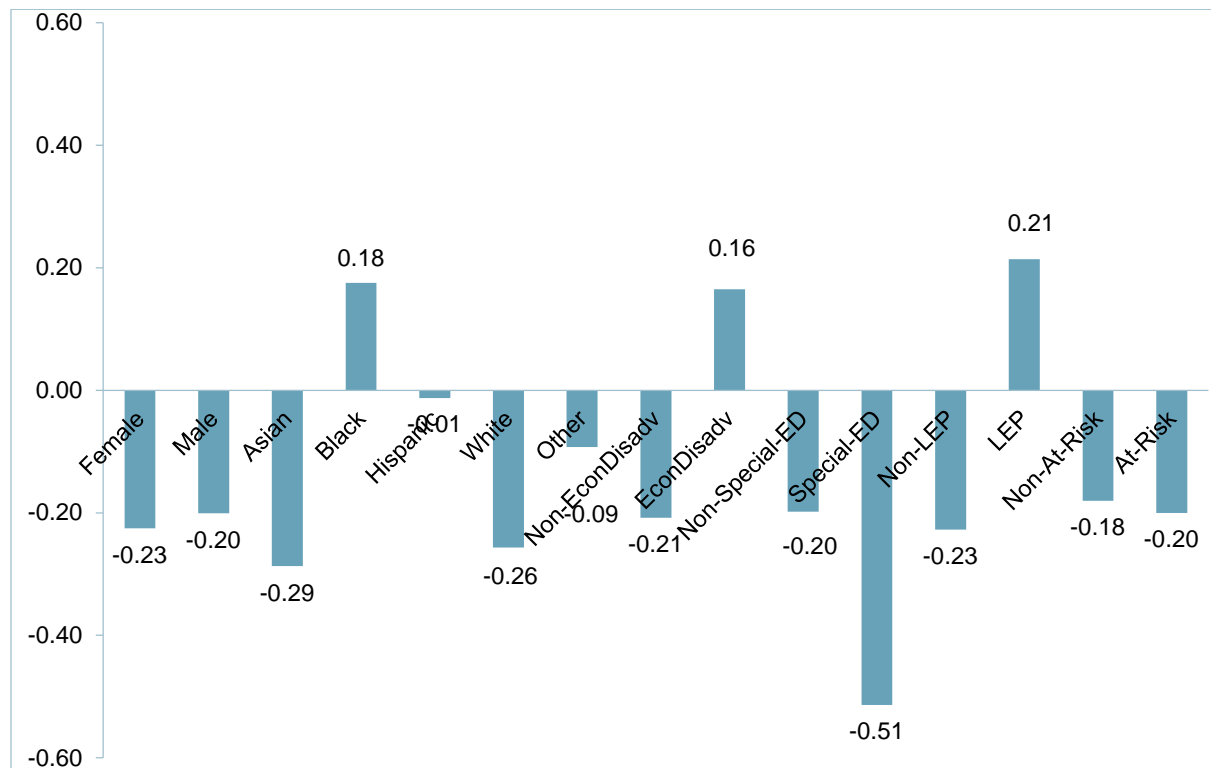
- Students who attended HISD prekindergarten programs (M = 166.7) scored higher than their peers who did not attend HISD prekindergarten programs (M = 161.7) the previous year on the 2014–2015 kindergarten Logromas mathematics subtest with an effect size of 0.36. The effect size indicated that the magnitude of the mean score difference was modest (**Table 5**, p. 20).
- Both HISD prekindergarten students and Non-HISD prekindergarten students obtained comparable mean standard scores as the district’s mean standard score on the 2014–2015 kindergarten IOWA mathematics subtest. On the Logromas mathematics subtest, the HISD prekindergarten students obtained a higher mean standard score than the district, while the Non-HISD prekindergarten students obtained a lower mean standard score than the district (**Figure 4**, p. 7).

**Did HISD prekindergarten and Non-HISD prekindergarten students perform differently on kindergarten IOWA and Logromas ELA subtests by student groups?**

**IOWA ELA**

- At the student group level analysis, Table 2 (p. 17) shows that HISD Black prekindergarten students outperformed their Non-HISD prekindergarten peers on the 2014–2015 kindergarten IOWA ELA subtest. The effect size was 0.18. The magnitude of the differences was small (**Figure 5**).

**Figure 5. Effect sizes of HISD Prekindergarten Students vs. Non-HISD Prekindergarten Students on the 2014–2015 Kindergarten IOWA ELA Subtest by Student Groups**



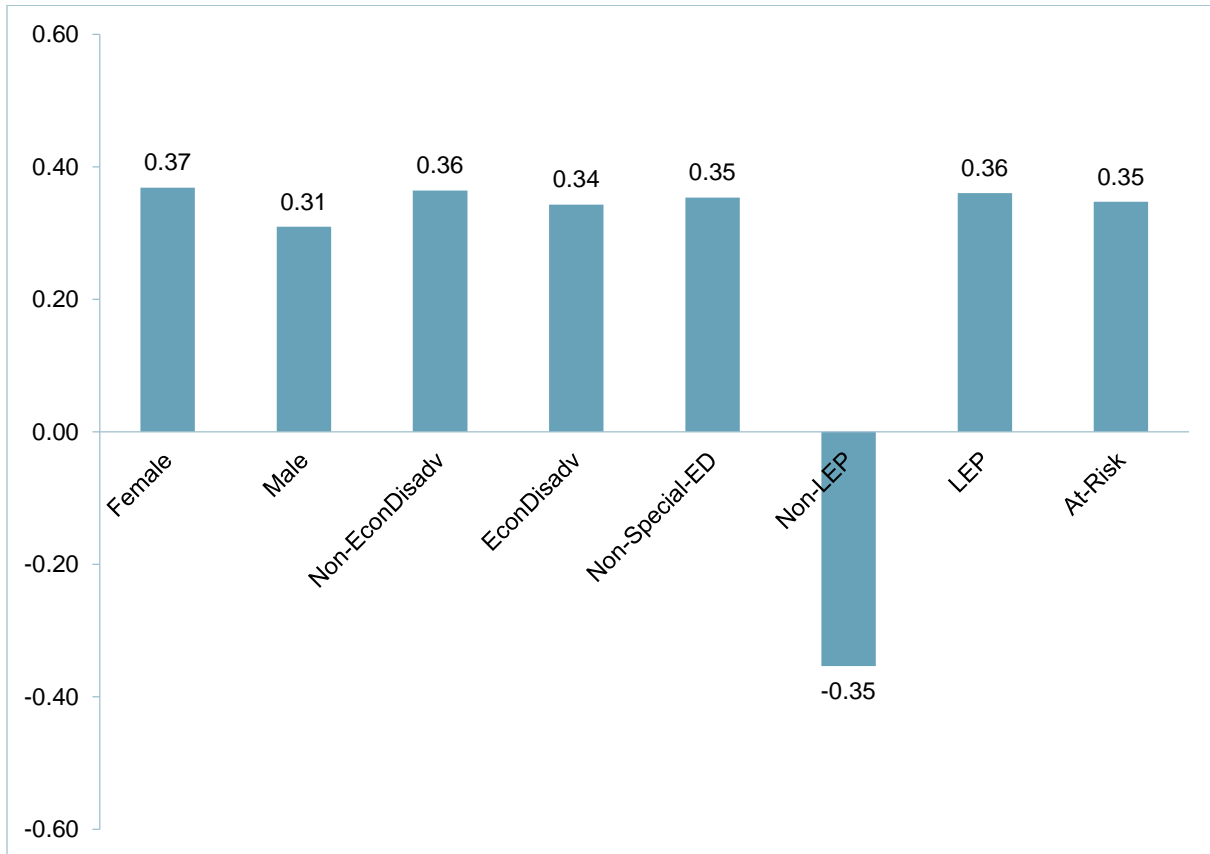
Note. Defined d = 0.15 as small-modest, d = 0.3 as modest-large, d = 0.5 as large.

- Table 2 (p. 17) shows that HISD Asian and White prekindergarten students scored lower than their Non-HISD prekindergarten peers on the 2014–2015 kindergarten IOWA ELA subtest. The effect sizes were -0.29 and -0.26, respectively, for Asian and White subgroups. The effect sizes indicated that the magnitude of the mean score differences were modest (Figure 5, p. 8).
- Table 2 (p. 17) shows the economically-disadvantaged students who attended HISD prekindergarten scored higher on the 2014–2015 IOWA ELA subtest compared to their peers who did not attend HISD prekindergarten (mean standard score difference = 1.5). The corresponding effect size for the mean standard score difference between HISD and Non-HISD prekindergarten economically-disadvantaged students is 0.16. The effect size indicated that the magnitude of the difference was small (Figure 5, p. 8).
- Among students who attended HISD prekindergarten, the economically-disadvantaged students obtained a lower mean standard score than their non-economically-disadvantaged peers on the 2014–2015 kindergarten IOWA ELA subtest (mean standard score difference = 4.3) (Table 2, p. 17). However, this gap was larger than the one evidenced for students who did not attend HISD prekindergarten (mean standard score difference = 8.0).
- Table 2 (p. 17) shows that HISD special education prekindergarten students (M = 125.9) scored lower than their Non-HISD prekindergarten peers (M = 130.8) on the 2014–2015 kindergarten IOWA ELA subtest. The effect size was -0.51. The effect sizes indicated that the magnitude of the mean score difference was large (Figure 5, p. 8).
- Table 2 (p. 17) shows that HISD LEP prekindergarten students (M = 129.1) outperformed their Non-HISD prekindergarten peers (M = 127.2) on the 2014–2015 kindergarten IOWA ELA subtest. The effect size was 0.21. The effect sizes indicated that the magnitude of the mean score difference was modest (Figure 5, p. 8).

### Logramos ELA

- Table 3 (p. 18) shows that HISD prekindergarten students obtained higher mean standard scores on the 2014–2015 kindergarten Logramos ELA subtest than their Non-HISD prekindergarten peers within the following student groups: gender, economically disadvantaged, special education placement, and at risk.
- **Figure 6** (p. 10) shows that the effect size within each student group was modest or large ( $d > 0.3$ ) when HISD prekindergarten students were compared with their Non-HISD prekindergarten peers on the 2014–2015 kindergarten Logramos ELA subtest.

**Figure 6. Effect sizes of HISD Prekindergarten Students vs. Non-HISD Prekindergarten Students on the 2014–2015 Kindergarten Logramos ELA Subtest by Student Groups**



Note. Defined  $d = 0.15$  as small-modest,  $d = 0.3$  as modest-large,  $d = 0.5$  as large.

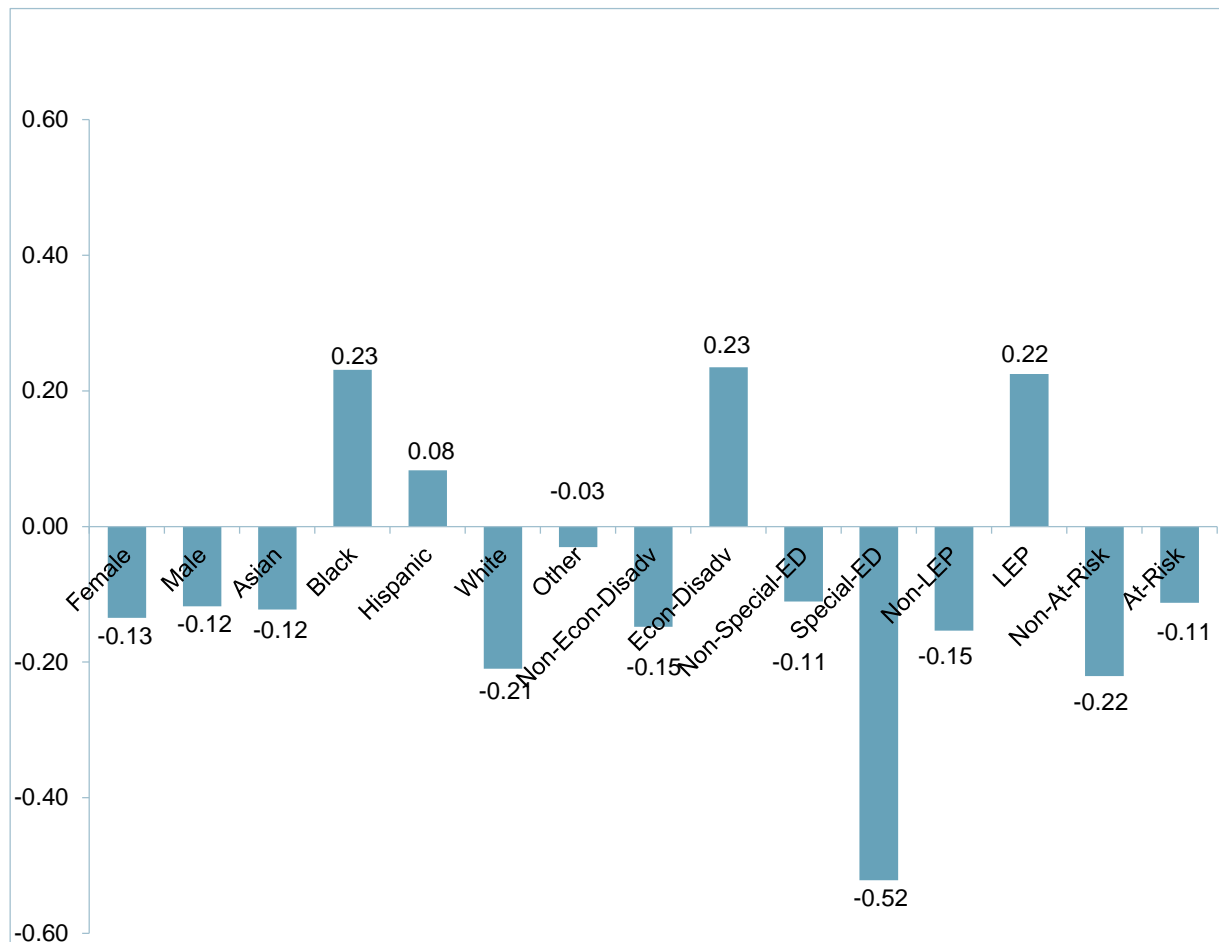
- Table 3 (p. 18) shows that HISD non-LEP prekindergarten students obtained a lower mean standard score than their Non-HISD prekindergarten peers on the 2014–2015 kindergarten Logramos ELA subtest. The effect size was  $-0.35$ . The effect sizes indicated that the magnitude of the mean score difference was modest (Figure 6).

## Did HISSD prekindergarten and Non-HISSD prekindergarten students perform differently on kindergarten IOWA and Logramos mathematics subtests by student groups?

### IOWA Mathematics

- Table 4 (p. 19) shows that HISSD Black prekindergarten students outperformed their Non-HISSD prekindergarten peers on the 2014–2015 kindergarten IOWA mathematics subtest. The effect sizes for the mean standard score difference was 0.23. The effect size indicated that the magnitude of the difference was modest for Black student subgroup (**Figure 7**).

**Figure 7. Effect sizes of HISSD Prekindergarten Students vs. Non-HISSD Prekindergarten Students on the 2014–2015 Kindergarten IOWA Mathematics Subtest by Student Groups**



Note. Defined  $d = 0.15$  as small-modest,  $d = 0.3$  as modest-large,  $d = 0.5$  as large.

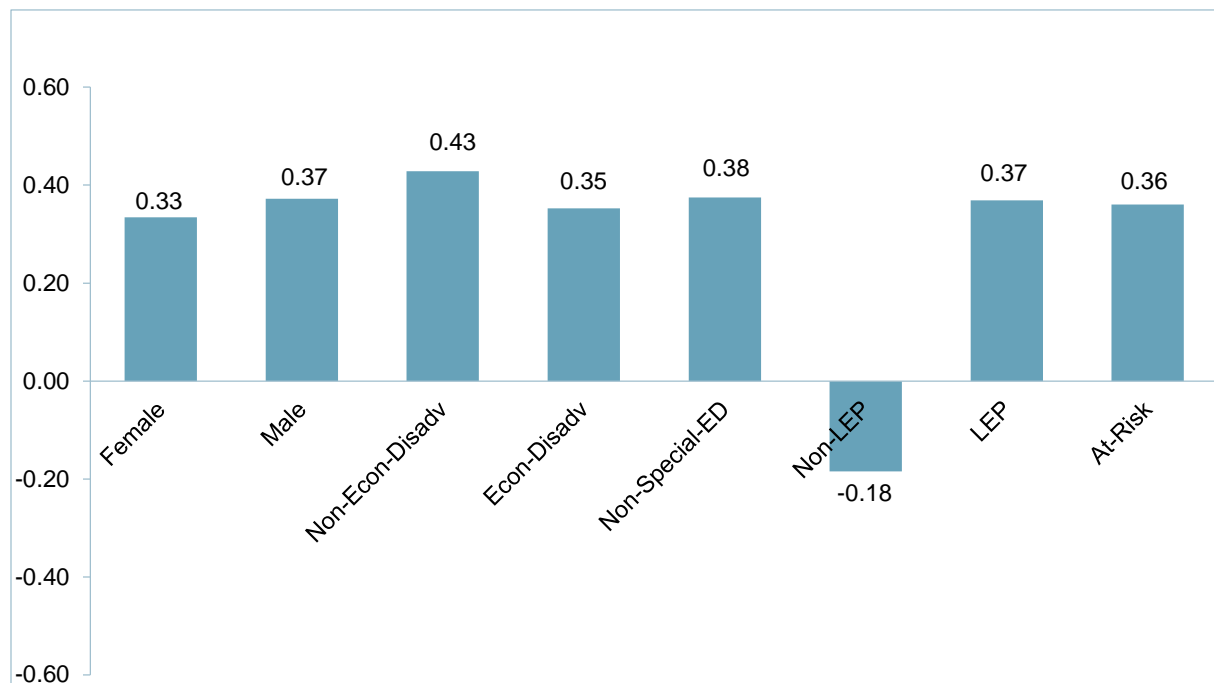
- Table 4 (p. 19) shows that HISD White prekindergarten students obtained a lower mean standard score than their Non-HISD prekindergarten peers on the 2014–2015 kindergarten IOWA mathematics subtest. The effect sizes for the mean standard score difference was -0.21. The effect size indicated that the magnitude of the difference was modest (Figure 7, p. 11).
- Economically-disadvantaged students who attended HISD prekindergarten scored higher on the 2014–2015 IOWA mathematics subtest compared to economically-disadvantaged students who did not attend HISD prekindergarten (mean standard score difference = 2.2) (Table 4, p. 19). The corresponding effect size for the mean standard score difference between HISD and Non-HISD economically-disadvantaged students was 0.23. The effect size indicated that the magnitude of the difference was modest (Figure 7, p. 11).
- Among students who attended HISD prekindergarten, economically-disadvantaged students obtained a lower mean standard score than their non-economically-disadvantaged peers on the 2014–2015 kindergarten IOWA mathematics subtest (mean standard score difference = 3.9) (Table 4, p. 19). However, this gap was larger than the one evidenced for students who did not attend HISD prekindergarten (mean standard score difference = 7.7).
- Table 4 (p. 19) shows that HISD special education prekindergarten students (M = 126.6) scored lower than their Non-HISD peers (M = 132.0) on the 2014–2015 kindergarten IOWA mathematics subtest. The effect sizes for the mean standard score difference was -0.52 for special education subgroup. The effect size indicated that the magnitude of the mean standard score difference was large (Figure 7, p. 11).
- Table 4 (p. 19) shows that HISD LEP prekindergarten students (M = 131.6) outperformed their Non-HISD peers (M = 129.5) on the 2014–2015 kindergarten IOWA mathematics subtest. The effect size for the mean standard score difference was 0.22. The effect size indicated that the magnitude of the mean standard score difference was modest (Figure 7, p. 11).
- HISD non-at-risk students (M = 134.1) obtained a lower mean standard score than their peers (M = 136.4) on the 2014–2015 kindergarten IOWA mathematics subtest (Table 4, p. 19). The effect size for the mean standard score difference was -0.22. The effect size indicated that the magnitude of the mean standard score difference was modest (Figure 7, p. 11).



## Logramos Mathematics

- Table 5 (p. 20) shows that HISD prekindergarten students obtained higher mean standard scores on the 2014–2015 kindergarten Logramos mathematics subtest than their Non-HISD prekindergarten peers within following student groups: gender, economically-disadvantaged status, special education placement, LEP, and at-risk.
- **Figure 8** shows that the effect size within each student group was modest ( $d > 0.3$ ) when HISD prekindergarten students were compared with their Non-HISD prekindergarten peers except for non-LEP group.

**Figure 8. Effect sizes of HISD Prekindergarten Students vs. Non-HISD Prekindergarten Students on the 2014–2015 Kindergarten Logramos Mathematics Subtest**



Note. Defined  $d = 0.15$  as small-modest,  $d = 0.3$  as modest-large,  $d = 0.5$  as large.

## Discussion

The overall goal of prekindergarten education is to increase school readiness of disadvantaged students who may otherwise fall behind because of their environments and conditions. The current evaluation examined the effect of 2013–2014 HISD prekindergarten programs on students' performance in kindergarten during the 2014–2015 academic year. The findings based on the kindergarten Logramos ELA and mathematics subtests shows that HISD prekindergarten programs had positive effects on Hispanic test takers. Findings based on kindergarten IOWA ELA and mathematics suggested that HISD prekindergarten programs had positive effects on Black, economically-disadvantaged, and LEP students' kindergarten IOWA ELA and mathematics performance. The findings also suggested that HISD prekindergarten program may help to close the achievement gap between disadvantaged students and their non-disadvantaged peers on the kindergarten IOWA ELA and mathematics performance.

A methodological challenge of this evaluation is selection bias. The Non-HISD prekindergarten students in this evaluation may have had preschool experience in other Non-HISD prekindergarten programs. The current HISD student information database does not identify children who did not attend any early childhood education programs or attended Non-HISD prekindergarten programs, therefore, there are two recommendations. First, policymakers must be cautious when they make inference about the quality of HISD prekindergarten programs based on the performance difference between HISD prekindergarten and Non-HISD prekindergarten groups. Second, HISD may consider modifying its student information database to collect prekindergarten educational placement information when students enroll in HISD kindergarten. This will enable district administrators and researchers to determine the full impact of HISD prekindergarten education. Another limitation of this evaluation is that the kindergarten academic performance was the only outcome variable to evaluate the quality of HISD prekindergarten programs. However, many benefits of early childhood education are unmeasured through test scores. In the future, HISD should aim to include measures of success other than test scores. A broader definition of early scholastic success, such as social-emotional learning measures may be included in future evaluations.

## References

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## Endnote

<sup>1</sup> HISD prekindergarten eligibility criteria:

a) four years old on or before September 1 of the school year;

b) live in the HISD attendance boundary; and

c) meet at least one of the following criteria:

- homeless;
- unable to speak or understand English;
- economically-disadvantaged;
- the child of an active-duty member of the U.S. military or one who has been killed, injured, or missing in action while on active duty;
- has been in the conservatorship of the Department of Family and Protective Services following an adversary hearing held as provided by Section 262.201, Family code;
- meet any eligibility criteria for Head Start, not only those who meet the low-income eligibility criteria for Head Start.

**Table 1. Demographic Characteristics of HISD Kindergarteners by Prekindergarten Enrollment Status in 2013–2014**

		<b>HISD Prek</b>		<b>Non-HISD Prek</b>	
		<b>(n = 11,863)</b>		<b>(n = 6,278)</b>	
<b>Demographic Characteristic</b>		<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
Gender	Female	6,014	50.7	3,007	47.9
	Male	5,849	49.3	3,271	52.1
Ethnicity	Asian	260	2.2	469	7.5
	Black	2,705	22.8	1,546	24.6
	Hispanic	8,496	71.6	2,927	46.6
	White	316	2.7	1,175	18.7
	Other	86	.7	161	2.6
Economically-Disadvantaged	No	1,474	12.4	2,765	44.0
	Yes	10,389	87.6	3,513	56.0
Special Education	No	11,329	95.5	6,090	97.0
	Yes	534	4.5	188	3.0
Limited English Proficient (LEP)	No	5,656	47.7	4,551	72.5
	Yes	6,207	52.3	1,727	27.5
At-Risk	No	339	2.9	385	6.1
	Yes	11,524	97.1	5,893	93.9

*Note.* All data retrieved from PEIMS 2014–2015. The demographic information used in this evaluation was based on student information at the time that the student enrolled in kindergarten.

**Table 2. Performance of HISD PreK Students and Non-HISD PreK Students on the 2014–2015 Kindergarten IOWA ELA by Student Groups**

Student Group	HISD Prek			Non-HISD Prek			Mean Difference	Effect Size (d)	
	Mean	SD	n	Mean	SD	n			
Overall Sample	131.7	9.3	6,313	133.8	11.0	4,500	-2.1	-0.21	
Gender	Female	132.4	9.2	3,207	134.6	10.8	2,183	-2.2	-0.23
	Male	130.9	9.4	3,106	133.0	11.2	2,317	-2.1	-0.20
Ethnicity	Asian	134.0	10.5	250	137.4	12.3	437	-3.4	-0.29
	Black	132.6	9.5	2,477	130.9	9.4	1,333	1.7	0.18
	Hispanic	130.2	8.5	3,226	130.3	9.6	1,464	-0.1	-0.01
	White	136.8	10.2	281	139.6	10.9	1,116	-2.8	-0.26
	Other	138.4	9.9	79	139.4	11.1	150	-1.0	-0.09
Economically-disadvantaged	No	135.3	10.0	1,074	137.5	11.2	2,407	-2.2	-0.21
	Yes	131.0	9.0	5,239	129.5	9.1	2,093	1.5	0.16
Special Education	No	131.9	9.3	6,128	133.9	11.0	4,402	-2.0	-0.20
	Yes	125.9	8.8	185	130.8	10.8	98	-4.9	-0.51
Limited English Proficient (LEP)	No	132.3	9.3	5,182	134.5	11.0	4,040	-2.2	-0.23
	Yes	129.1	9.0	1,131	127.2	9.1	460	1.9	0.21
At-Risk	No	135.1	9.6	249	137.1	12.1	306	-2.0	-0.18
	Yes	131.6	9.3	6,064	133.5	10.9	4,194	-1.9	-0.20

**Table 3. Performance of HISD PreK Students and Non-HISD PreK Students on the 2014–2015 Kindergarten Logramos ELA by Student Groups**

Student Group	HISD Prek			Non-HISD Prek			Mean Difference	Effect Size (d)	
	Mean	SD	n	Mean	SD	n			
Overall Sample	174.4	14.5	4,909	169.4	14.2	1,231	5.0	0.34	
Gender	Female	175.9	14.5	2,544	170.6	13.6	594	5.3	0.37
	Male	172.7	14.3	2,365	168.2	14.8	637	4.5	0.31
Economically-disadvantaged	No	174.9	15.6	320	169.4	14.2	180	5.5	0.36
	Yes	174.3	14.4	4,589	169.4	14.3	1,051	4.9	0.34
Special Education	No	174.7	14.4	4,768	169.6	14.2	1,206	5.1	0.35
	Yes	163.6	13.1	141	159.5	9.9	25	--	--
Limited English Proficient (LEP)	No	166.8	14.1	39	171.6	13.6	91	-4.8	-0.35
	Yes	174.4	14.5	4,870	169.2	14.3	1,140	5.2	0.36
At-Risk	No	156.6	13.9	5	172.8	16.0	9	--	--
	Yes	174.4	14.5	4,904	169.4	14.2	1,222	5.0	0.35

*Note.* Effect size and mean difference were not reported when  $n < 30$ , and were denoted by "--".

**Table 4. Performance of HISD PreK Students and Non-HISD PreK Students on the 2014–2015 Kindergarten IOWA Mathematics by Student Groups**

Student Group		HISD Prek			Non-HISD Prek			Mean Difference	Effect Size (d)
		Mean	SD	n	Mean	SD	n		
Overall Sample		132.5	9.3	6,470	133.8	10.9	4,623	-1.3	-0.12
Gender	Female	132.9	9.2	3,266	134.2	10.7	2,237	-1.3	-0.13
	Male	132.2	9.3	3,204	133.4	11.2	2,386	-1.2	-0.12
Ethnicity	Asian	137.6	10.2	252	138.9	11.5	450	-1.3	-0.12
	Black	132.2	9.2	2,569	130.0	9.3	1,395	2.2	0.23
	Hispanic	131.9	8.9	3,282	131.1	9.5	1,500	0.8	0.08
	White	136.9	9.2	286	139.2	11.1	1,126	-2.3	-0.21
	Other	138.5	10.6	81	138.8	10.9	152	-0.3	-0.03
Economically-disadvantaged	No	135.8	9.7	1,093	137.4	11.0	2,449	-1.6	-0.15
	Yes	131.9	9.1	5,377	129.7	9.4	2,174	2.2	0.23
Special Education	No	132.7	9.2	6,277	133.8	10.9	4,520	-1.1	-0.11
	Yes	126.6	9.5	193	132.0	11.6	103	-5.4	-0.52
Limited English Proficient (LEP)	No	132.7	9.3	5,322	134.3	10.9	4,147	-1.6	-0.15
	Yes	131.6	9.3	1,148	129.5	10.1	476	2.1	0.22
At-Risk	No	134.1	8.7	258	136.4	11.7	313	-2.3	-0.22
	Yes	132.5	9.3	6,212	133.6	10.9	4,310	-1.1	-0.11

**Table 5. Performance of HISD PreK Students and Non-HISD PreK Students on the 2014–2015 Kindergarten Logramos Mathematics by Student Groups**

Student Group		HISD Prek			Non-HISD Prek			Mean Difference	Effect Size (d)
		Mean	SD	n	Mean	SD	n		
Overall Sample		166.7	13.6	4,984	161.7	14.8	1,265	5.0	0.36
Gender	Female	167.4	13.4	2,591	162.9	14.2	606	4.5	0.33
	Male	165.8	13.8	2,393	160.6	15.2	659	5.2	0.37
Economically-disadvantaged	No	167.6	14.2	328	161.5	14.1	183	6.1	0.43
	Yes	166.6	13.6	4,656	161.7	14.9	1,082	4.9	0.35
Special Education	No	166.9	13.5	4,837	161.8	14.8	1,239	5.1	0.38
	Yes	157.6	16.0	147	157.5	10.6	26	--	--
Limited English Proficient (LEP)	No	160.6	11.9	39	163.0	13.2	98	-2.4	-0.18
	Yes	166.7	13.6	4,945	161.6	14.9	1,167	5.1	0.37
At-Risk	No	163.0	14.0	5	164.6	16.1	10	--	--
	Yes	166.7	13.6	4,979	161.7	14.7	1,255	5.0	0.36

*Note.* Effect size and mean difference were not reported when  $n < 30$ , and were denoted by "--".