

EVALUATION BRIEF

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What was the impact of prekindergarten programs on kindergarten student performance based on Stanford, Aprenda, TPRI and TEJAS-LEE assessments for spring 2007?

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The Houston Independent School District (HISD) prekindergarten programs were created to provide students with the skills, necessary for success in the regular school curriculum, including language, mathematics and social skills. Texas Education Code 29.153(a) requires school districts to offer free prekindergarten programs when at least 15 children in the district: (1) are unable to speak and comprehend the English language; (2) are “economically disadvantaged” (eligible to participate in the national free or reduced lunch program); or (3) are homeless. This brief was designed to compare the academic performance of kindergarten students who attended HISD prekindergarten programs and students that did not attend HISD prekindergarten programs using district-mandated assessment results.

Data and Methods

Student demographic data for kindergarten students in 2006–2007 were collected from the Public Education Information Management System (PEIMS) based on the grade-level description codes. The spring 2007 kindergarten performance scores of students who were enrolled in HISD prekindergarten programs in 2005–2006 as well as students who were not enrolled in HISD prekindergarten programs in 2005–2006 were captured from Stanford, Aprenda, TPRI and TEJAS-LEE assessment results. The kindergarten students consisted of those who attended HISD prekindergarten programs and those who did not attend HISD prekindergarten programs. The results were disaggregated by region.

Stanford Achievement Test Series Tenth Edition (Stanford 10) measured the academic performance of English-speakers, while La prueba de logros en español, Tercera edición (Aprenda 3) measured the academic performance of Spanish-speakers. The Stanford 10 and Aprenda spring 2007 results included the normal curve equivalent (NCE) scores. NCE scores 65.6 or greater were considered above average and NCE scores at 33.7 or below were considered below average.

Texas Primary Reading Inventory (TPRI) and TEJAS-LEE, the Spanish Version of the TPRI

provided a comprehensive assessment of reading/language arts development for grades K-3.

The results for TPRI were recorded as “Developed” or “Still Developing”. Students who scored “Developed” were not likely to be at risk for developing reading difficulties. Students who scored “Still Developing” needed further assessment to determine the need for additional reading assistance.

The results for TEJAS-LEE were recorded as “Desarrollado (D)”, “Nivel esperado (NE)”, and “Nivel de intervencion (NI)”. Students who scored “Desarrollado” have mastered the skill. Students who scored “NE” indicate that students are performing at a level expected for that grade and time point. Students who scored “NI” indicate that students are performing well below the expected level for the grade level and time point.

How did HISD kindergarten students who did and did not attend HISD prekindergarten programs perform on the Stanford test?

Table 1 reveals the spring 2007 Stanford 10 test results of 5,170 kindergarten students that attended HISD prekindergarten programs and 4,073 students who did not attend HISD prekindergarten programs in 2005–2006. The findings reflect NCEs that fell within the average to above average range on the reading,

mathematics, and environment/science tests in all HISD regions.

Overall, kindergarten students who attended HISD prekindergarten programs performed as well as students who did not attend HISD prekindergarten programs in reading (59 NCEs). In contrast, students who did not attend HISD prekindergarten programs performed better than students who attended HISD prekindergarten by one and two NCEs, respectively on the math and environment/science tests, overall.

However, there were district regional differences. For the North, East, South and Alternative Regions, the students attending HISD prekindergarten performed higher than the students not attending HISD prekindergarten for all subjects; the opposite was true for the West and Central Regions.

There were 1,414 kindergarten students tested in the South Region on Stanford; 991 of those students attended HISD prekindergarten programs. The students that attended HISD prekindergarten programs averaged the highest kindergarten Stanford reading scores (66 NCEs) and second highest math scores (56 NCEs).

Moreover, the 991 South Region kindergarten students tested on Stanford who attended prekindergarten in HISD attained the highest environment/science mean score (54 NCEs) than kindergarten students in other HISD regions, except Central. In addition, there were 1,162 kindergarten students tested who did not attend prekindergarten in HISD in the Central Region. These students scored the highest reading, math, and environment/science mean NCE scores (65, 58, and 56, respectively) than the remaining HISD kindergarten students who did not attend HISD prekindergarten in other regions.

Table 1. The 2007 Stanford 10 Mean NCEs of Kindergarten Students Who Did and Did Not Attend HISD Prekindergarten Programs in 2005–2006

Region	Prekindergarten			Non-Prekindergarten		
	R NCE	M NCE	Env. Sci. NCE	R NCE	M NCE	Env. Sci. NCE
North	59	49	49	54	43	45
West	56	47	45	59	51	49
Central	59	49	48	65	58	56
East	54	46	44	47	42	41
South	66	56	54	61	50	50
Alt.	56	44	42	49	35	37
HISD	59	49	48	59	50	50

Note: R = Reading; M = Math;
Env. Sci. = Environment/Science

How did HISD kindergarten students who did and did not attend HISD prekindergarten programs in 2005–2006 perform on the Aprenda?

Table 2 reveals the spring 2007 Aprenda test results of 4,697 kindergarten students that attended HISD prekindergarten programs and 1,219 kindergarten students tested who did not attend HISD prekindergarten programs in 2005–2006. The findings reflect NCEs that fell within the average to above average range on the reading, mathematics, and environmental/science tests in all HISD regions.

Overall, students who attended HISD prekindergarten performed better on all three subjects than those who did not attend HISD prekindergarten. This trend held true in all regions as well.

The 685 South Region kindergarten students tested who attended HISD prekindergarten attained the highest reading, math, and environment/science mean NCE scores in kindergarten (62, 68, and 57, respectively) compared to kindergarten students tested who attended HISD prekindergarten in the other HISD regions and compared to those who did not attend HISD prekindergarten.

Table 2. The 2007 Aprenda Mean NCEs of Kindergarten Students Who Did and Did Not Attend HISD Prekindergarten Programs in 2005–2006

Region	Prekindergarten			Non-Prekindergarten		
	R NCE	M NCE	Env. Sci. NCE	R NCE	M NCE	Env. Sci. NCE
North	60	66	55	52	59	51
West	57	63	55	55	60	51
Central	50	57	50	46	53	48
East	57	62	53	53	58	50
South	62	68	57	54	62	51
Alt.	38	41	37	0	0	0
HISD	58	64	54	53	59	50

Note: R = Reading; M = Math;
Env. Sci. = Environment/Science

How did HISD kindergarten students who did and did not attend HISD prekindergarten programs in 2005–2006 perform on the TPRI?

Table 3 reveals the spring 2007 TPRI results of 5,372 kindergarten students tested that attended HISD prekindergarten programs and 3,056 kindergarten students tested who did not attend

HISD prekindergarten programs in 2005–2006. The findings reflect the number of students that are identified as “Developed” and the students that are “Still Developing” basic readiness skills.

Overall, students who attended prekindergarten had a higher percentage of students identified as “Developed” (91.3%) and a lower percentage of students identified as “Still Developing” (8.7%) compared to students who did not attend HISD prekindergarten.

The South Region had the highest percentage (93.9%) of kindergarten students identified as “Developed” among all students who attended prekindergarten in HISD.

At the same time, the Central Region had 882 kindergarten students tested, which contained the highest percentage (93.7%) of kindergarten students identified as “Developed” among students who did not attend HISD prekindergarten programs.

Table 3. The 2007 TPRI Results of Kindergarten Students Who Did and Did Not Attend HISD Prekindergarten Programs in 2005–2006

Region	Prekindergarten		Non--Prekindergarten	
	% D	%SD	% D	% SD
North	91.0	9.0	82.9	17.1
West	89.6	10.4	92.7	7.3
Central	88.8	11.2	93.7	6.3
East	92.9	7.1	85.5	14.5
South	93.9	6.1	87.3	12.7
Alt.	92.5	7.5	86.0	14.0
HISD	91.3	8.7	90.3	9.7

Note: D = “Developed”; SD = “Still Developing”

How did HISD kindergarten students who did and did not attend HISD prekindergarten programs in 2005–2006 perform on the TEJAS-LEE?

Table 4 reveals the spring 2007 TEJAS-LEE inventory results of 4,912 kindergarten students tested that attended HISD prekindergarten programs and 1,024 students who did not attend HISD prekindergarten programs in 2005–2006. The findings reflect the number of students that are “Developed” and the students that are at the “Expected Level” or “Below Expected Level” for basic readiness skills for all prekindergarten and nonprekindergarten students in HISD. Overall, the 4,912 kindergarten students tested who attended HISD prekindergarten programs performed better than the 1,056 students who did not attend HISD prekindergarten programs, as reflected by the

highest percentage of “Developed” students (99.3% vs. 97.0%).

The South Region had 697 students tested and had the highest percentage (99.7%) of kindergarten students identified as “Developed” among all kindergarten students tested who attended prekindergarten in HISD. The North Region had 213 students tested; this region had the highest percentage (98.2%) of kindergarten students who did not attend prekindergarten programs in HISD as “Developed” among all kindergarten students tested in this student group.

Table 4. The 2007 TEJAS-LEE Results of Kindergarten Students Who Did and Did Not Attend HISD Prekindergarten Programs in 2005–2006

Region	Prekindergarten		Non--Prekindergarten	
	% D	% NI	% D	% NI
North	99.5	0.3	98.2	1.8
West	99.4	0.2	97.5	2.2
Central	98.2	1.3	95.6	4.4
East	99.4	0.4	95.9	3.6
South	99.7	0.1	96.5	3.5
Alt.	-	-	-	-
HISD	99.3	0.4	97.0	2.8

Note: D = “Developed”; NE = “Expected Level”; NI = “Below Expected Level”

Conclusions

The results from Stanford, Aprenda, TPRI, and TEJAS-LEE assessments indicated that the kindergarten students who attended HISD prekindergarten programs performed as well as students who did not attend HISD prekindergarten programs in some academic areas. Specifically, in most areas, the Stanford assessment findings showed that the mean NCEs fell within the average to above average range on the reading, mathematics, and environment/science in all HISD regions for both student groups. The Aprenda assessment results indicated that the mean NCEs were higher in reading, math, and environment/science for kindergarten students who attended HISD prekindergarten programs than for kindergarten students who did not attend prekindergarten programs in the district. The TPRI and TEJAS-LEE inventory results revealed that the kindergarten students who attended HISD prekindergarten programs had the highest percentage of “Developed” skills than the comparison group.

Overall, the kindergarten students who attended HISD prekindergarten programs have

shown significant academic developmental progress; which complements the recent studies that support prekindergarten programs and their role in narrowing the achievement gap for economically-disadvantaged minority students.

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