

PREKINDERGARTEN PROGRAM, 2013–2014

STUDENT ACADEMIC PERFORMANCE

Background. The state of Texas requires districts with at least 15 eligible 4-year-old students to provide a half-day prekindergarten (pre-K) program to prepare students developmentally for the rigors of kindergarten and beyond. In 2013–2014, Austin Independent School District (AISD) provided eligible students with full-day pre-K across 68 elementary campuses, Lucy Read Prekindergarten Demonstration School, Anita Uphaus Early Childhood Center, Dobie Prekindergarten Center, and Webb Primary Center. This report evaluates students' achievement in the AISD pre-K program during the 2013–2014 school year, based on Peabody Picture Vocabulary Test-IV (PPVT) and Test de Vocabulario en Imagenes Peabody (TVIP) results.

Pre-literacy skills. The first 5 years of a child's life are influential with respect to his or her later school and life success (National Research Council, 2001). Decades of research indicate that high-quality educational opportunities benefit young children by preparing them to enter school. Students' early language skills lay the foundation for later reading and writing in school, and students with poorer language skills are more likely to have difficulties learning to read than are students with good language skills (Whitehurst & Lonigan, 1998). Studies have shown that students who have difficulty learning to read in the earliest years of schooling tend to continue having difficulties over time (Scarborough, 2001; Snow, Burns, & Griffin, 1998). The PPVT and the TVIP measure knowledge of receptive vocabulary in English and Spanish, respectively (Dunn & Dunn, 2007). Receptive (i.e., hearing) vocabulary is one domain of language development, and vocabulary recognition is a precursor to the development of reading skills.

Each year, the PPVT is administered to a sample of pre-K students across all AISD elementary campuses with a pre-K program, in the fall and spring. In 2013–2014, the sample was stratified to be representative of each vertical team. A total of 1,280¹ pre-K students were tested in both semesters.

¹ See technical note in Appendix A.



Program description. AISD provides a full-day pre-K program for all children who are 4-years-old on or before September 1st of the current school year and who meet one of the following eligibility criteria:

- Qualify for free or reduced-price lunch program
- English language learner
- Homeless
- Child of an active-duty military member or a military member who was injured or killed in service
- Reside or have ever resided in foster care

(TEC §29.153, [b])

The AISD pre-K program is designed to provide instructional activities to meet the individual needs of young children and stimulate learning in all areas of physical, social, emotional, and cognitive development.

PPVT-IV and TVIP Interpretation

The standard scores for the PPVT and TVIP are based on age norms from samples of native speakers in English and Spanish, respectively. The tests are best interpreted in the native language of the student.

To make group comparisons and estimates of students’ gains and losses, standardized scale scores were converted into normal curve equivalent (NCE) scores. The national normal distribution of NCE scores has a mean of 50 and a standard deviation of 21.06 points.

Interpretation of Normal Curve Equivalent (NCE) Scores

Range of performance	NCE scores	National percentile
Very low	1–24	1–11
Low	25–35	12–25
Low average	36–44	26–39
Average	45–55	40–60
High average	56–64	61–74
High	65–75	75–88
Very high	76–99	89–99

AISD pre-K advances students to the national average in receptive vocabulary. Pre-K programs are designed to prepare students for kindergarten who might otherwise not have access to early educational programs. A quality pre-K program contributes to the reduction of the achievement gap in school performance that students face due to socioeconomic and language barriers. The goal of AISD pre-K is to raise students’ academic performance to the average range of their peers. The assumption is that students who advance to at least the average range in the test of their language of instruction will be ready for future literacy learning in kindergarten.

PPVT and TVIP scores are best interpreted in the students’ native language. For the PPVT, students are compared with a national sample of native English speakers. For the TVIP, students are compared with a national sample of native Spanish speakers.

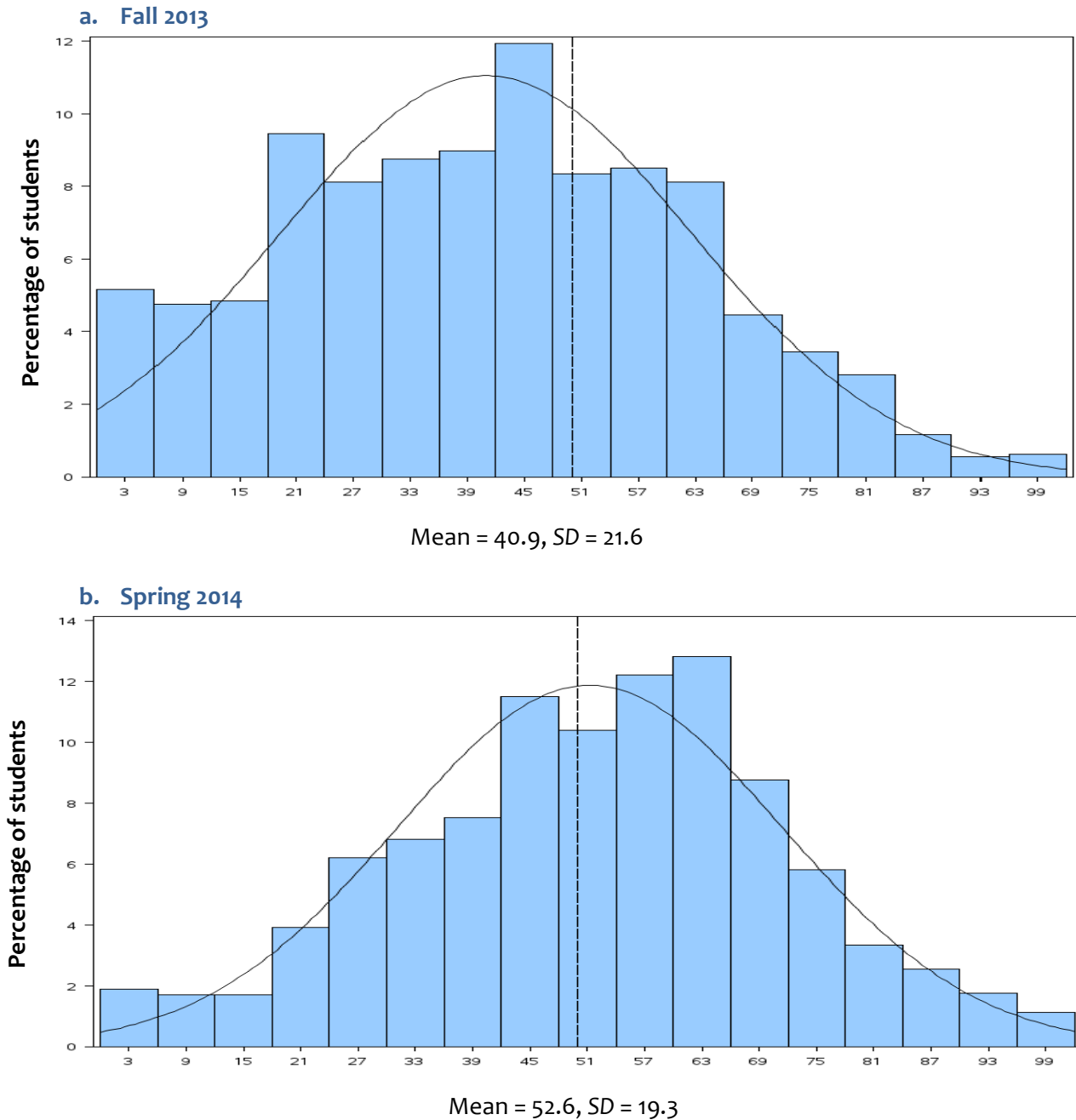
In Fall 2013, students enrolled in AISD’s pre-K program, on average, had a NCE score of 40.9 in their native language (Figure 1a). An estimated 64% of entering AISD pre-K students (rather than an expected 50%) had scores below the national mean score. The median equivalent age (4 years, 6 months) of pre-K students’ native language

receptive vocabulary ability was 1 month above the median actual age (4 years, 5 months).

In Spring 2014, the mean NCE of 52.6 for pre-K students was above the national mean score (Figure 1b). The median equivalent age (5 years, 5 months) of pre-K students’ native language receptive vocabulary ability was 1 month below the median actual age (5 years, 6 months). In spring 2014, 57% of AISD pre-K students had scores at or above the national mean score. Note that 50% of students were expected to have scores below the national mean.

Figure 1. Prekindergarten (pre-K) Students’ Peabody Picture Vocabulary Test (PPVT-IV) and Test de Vocabulario en Imagenes Peabody (TVIP) Performance Scores in Native Language, by Semester, 2013–2014

Normal curve equivalent (NCE) scores



Source. AISD student records, Department of Research and Evaluation

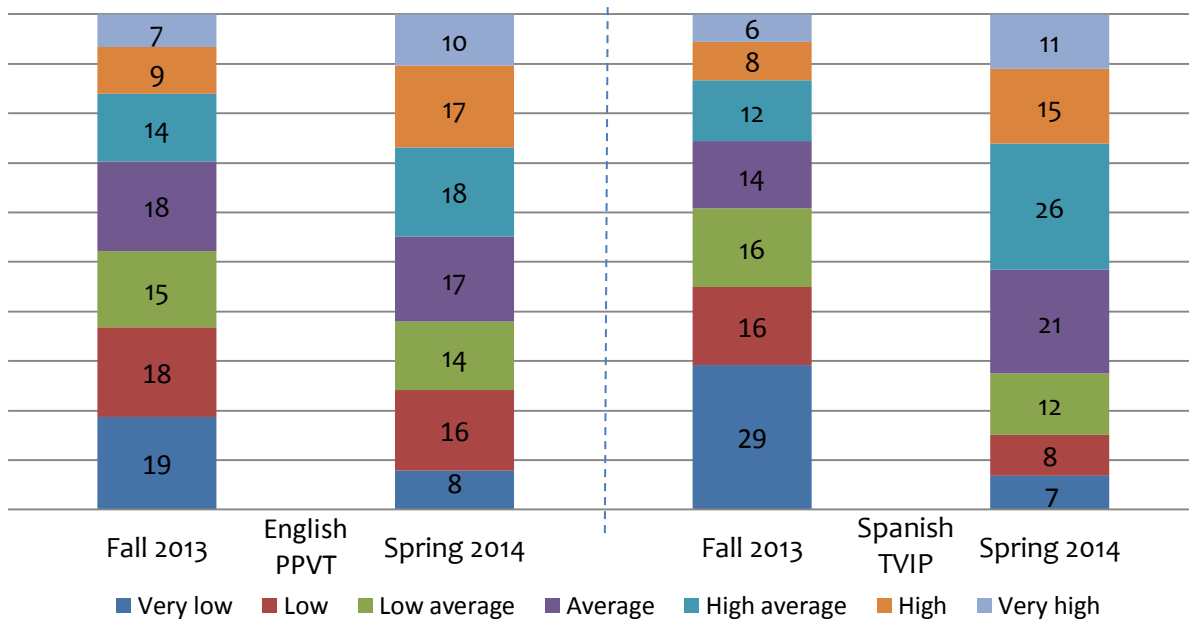
Note. n = 1,280. Dotted lines indicate the national mean NCE.

PPVT and TVIP, by English language learner (ELL) status. The average PPVT-IV NCE score for English-speaking students in Fall 2013 was 40.2, while the average TVIP NCE score for Spanish-speaking ELLs was 36.7. In Spring 2014, the average NCE score for English-speaking pre-K students was 47.7, with an average gain of 7.4 points, indicating greater than expected growth. For Spanish-speaking ELLs, the posttest scores averaged 53.7, with an average gain of 17 points.

In Spring 2014, at least 50% of students scored above the national average on the PPVT and TVIP.

Approximately 84% of students were expected to be in the average range or higher in the standard normal distribution in which the scores were based. However, 48% of English-speaking students and 40% of Spanish-speaking ELLs scored in the average range or higher in Fall 2013. In Spring 2014, 73% of Spanish-speaking ELLs and 62% of English-speaking students scored in the average range or higher in their native language (Figure 2).

Figure 2. Prekindergarten Students’ Peabody Picture Vocabulary Test (PPVT-IV) and Test de Vocabulario en Imagenes Peabody (TVIP) Performance, by Native Language and Semester, 2013-2014



Source. AISD student records, Department of Research and Evaluation

Note. English, n = 606; Spanish, n = 674.

Early childhood centers. AISD currently has four early childhood centers. Lucy Read, which opened in 2006–2007, serves pre-K students in the attendance zones for Cook, McBee, and Wooldridge Elementary Schools to ease overcrowding in those schools. Uphaus Early Childhood Center, which opened in 2012–2013 in South Austin, serves pre-K and kindergarten students in the Linder Elementary School attendance zone to ease overcrowding for that campus. The Dobie and Webb centers, located in North Central Austin, opened in 2012–2013 to ease overcrowding at Barrington, Hart, and Graham Elementary Schools.

During 2013–2014, 10 classrooms at Read and two classrooms at Uphaus were tested. Six classrooms at Dobie also were tested. Webb was not included due to sampling. Results are provided in Table 1. On average, pre-K students at Dobie and Read scored lower in the fall on the Peabody than did students who were not enrolled in a childhood center, indicating these schools had greater student academic needs, in general, than did other pre-K programs across the district. Read and Dobie students, on average, had greater gains per student than did students who were not enrolled at a childhood center. In Fall 2013, pre-K students at Uphaus had higher average Peabody scores than did students district wide. In Spring 2014, Uphaus students scored in the average to high range.

Table 1. Peabody Normal Curve Equivalent (NCE) Results for State-Mandated Prekindergarten (pre-K) Students, Early Childhood Centers, 2013–2014

	# students tested both	Avg. NCE Fall	Avg. NCE Spring	Average gain per student
District wide	1,280	40.9	52.6	11.7
Dobie pre-K	81	36.7	50.8	14.1
Read	139	36.9	54.8	17.9
Uphaus	27	54.9	59.2	4.3
Non-early childhood centers	1,033	41.4	52.3	10.9

Source. AISD student records, Department of Research and Evaluation

Vertical teams. In Fall 2013, the average NCE for pre-K students in nine of the 11 vertical teams in AISD was below the national mean NCE. By Spring 2014, the average NCE for seven vertical teams was above the national mean. The McCallum vertical team had the greatest average gain per student (Table 2).

Table 2. Peabody Normal Curve Equivalent (NCE) Results for State-Mandated Prekindergarten Students, by Vertical Team, 2013–2014

	# students tested	Avg. NCE Fall	Avg. NCE Spring	Average gain per student
District wide	1,280	40.9	52.6	11.7
Akins vertical team	141	40.3	53.6	13.3
Anderson vertical team	39	46.2	59.9	13.7
Austin vertical team	60	55.8	59.8	4
Bowie vertical team	33	55.6	63.8	8.2
Crockett vertical team	140	41.9	55.4	13.5
Eastside vertical team	93	42	49.1	7.1
Lanier vertical team	183	38.3	53.2	14.9
LBJ vertical team	188	34.7	45.8	11.1
McCallum vertical team	84	43.2	60.6	17.4
Reagan vertical team	172	39.9	47.1	7.2
Travis vertical team	144	39.5	47.1	7.6

Source. AISD student records, Department of Research and Evaluation

Conclusion. The AISD mandatory pre-K program continued to achieve its goal of raising the majority of pre-K students to grade-level expectations by the end of the year, and preparing them for success in kindergarten. Overall, the data show that the AISD pre-K program was effective in increasing growth in receptive vocabulary. AISD should continue to support funding of a full-day program for students to ensure that students continue to enter kindergarten ready to learn on grade level.

References.

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Appendix A

Technical Note

During the fall, 140 pre-K classrooms were tested. Due to tester attrition, the number of classrooms was reduced to 103 classrooms in the spring.

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