

**PURPOSE**

The AISD Department of Early Childhood director requested investigation into the long-term benefits of AISD prekindergarten (pre-K) participation. AISD currently funds a full day pre-K program for all students who qualify. The full day program costs approximately \$18 million for the 5,000+ students who participate.<sup>1</sup>

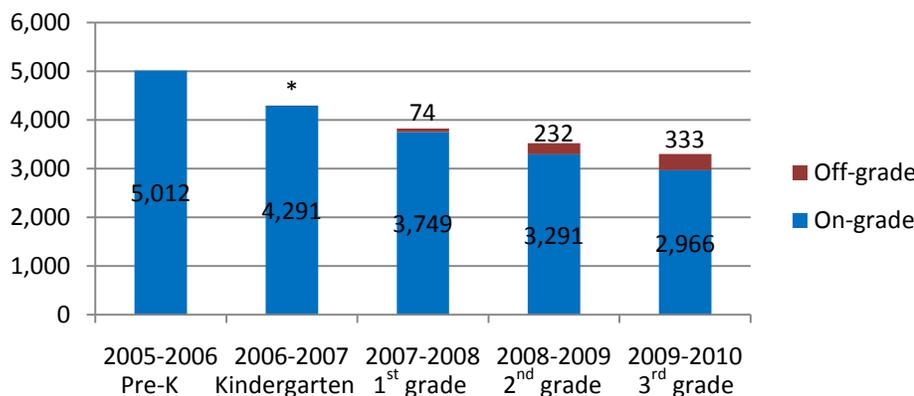
**METHODOLOGY**

Third grade is the first grade level students take the Texas Assessment of Knowledge and Skills in mathematics (math) and reading used by the state to determine whether students are meeting the minimum standards for each content area. The 2005–2006 pre-K cohort ( $N = 5,012$ ) would have been in 3<sup>rd</sup> grade in 2009–2010 if they had been promoted each year. Currently, data on students’ pre-K participation outside the district (e.g., private day care, head start, or half-day or full day program participation in another district) are not collected.

To mediate the influence of students’ district stability (i.e., students who have stayed in the district for 5 years), students who were enrolled in AISD for pre-K were compared to students who were first enrolled in AISD starting at kindergarten. Students who enrolled in AISD any grade level after kindergarten were classified as “later enrolled.” In 2009–2010, the composition of the 3<sup>rd</sup> grade cohort was 41% previously enrolled AISD pre-K students ( $n = 2,966$ ), 32% who began enrollment in AISD at kindergarten ( $n = 2,345$ ), and 27% who first enrolled in AISD later than kindergarten ( $n = 1,972$ ).

Figure 1 depicts the enrollment of the 2005–2006 pre-K cohort through five years at AISD. Fifty-nine percent of the 2005–2006 pre-K cohort was enrolled in AISD at the third grade level.

**Figure 1. 2005-2006 Prekindergarten Cohort Enrollments, 2005-2006 through 2009-2010**



Source. AISD student records

Notes. \* represents fewer than 5 students. Originally, 5,027 students were identified in pre-K in 2005-2006. Fifteen students were classified by more than one grade level and were dropped based on enrollment in 2006-2007 as being higher than kindergarten.

**Key Findings**

- 59% of the 2005–2006 pre-K cohort was enrolled in AISD at the 3<sup>rd</sup> grade level in 2009–2010.
- In 2009–2010, 41% of 3<sup>rd</sup> grade students were previously enrolled in the AISD pre-K program in 2005–2006.
- Economically disadvantaged ELLs who were enrolled in the AISD pre-K program:
  - Performed better on the reading and math TAKS than did similar students who first enrolled in AISD during kindergarten or later;
  - Performed as well on the math TAKS as did economically disadvantaged non-ELLs who were enrolled in AISD since kindergarten;
  - Performed better on the DRA/EDL and TPRI/Tejas Lee than did similar students, on average; and,
  - Had the highest attendance rates among all other groups in the 2009–2010 3<sup>rd</sup> grade cohort (97.5%).
- Third grade students who were enrolled in the AISD pre-K program had significantly higher attendance rates in 2009–2010 than did students who enrolled in AISD during kindergarten or later.

<sup>1</sup> For the most recent pre-K program report, see <http://www.austinisd.org/inside/accountability/evaluation/reports.phtml>

ACADEMIC PERFORMANCE

DPE staff examined the following assessments available at grades kindergarten through 3<sup>rd</sup> grade to evaluate academic performance: TAKS (math and reading), Developmental Reading Assessment (DRA) and Evaluación del Desarrollo de la Lectura (EDL), and the Texas Primary Reading Inventory (TPRI) and El Inventario de Lectura en Español de Tejas (Tejas Lee).

Students were matched on two criteria: English language learner (ELL) status and economic disadvantage, the two largest qualifiers admitting students into the pre-K program.<sup>2</sup> While all combinations of students were examined, this brief focuses on economically disadvantaged non-ELLs and economically disadvantaged ELLs. The two groups accounted for 89% of the students who enrolled in AISD pre-K and were in 3<sup>rd</sup> grade in 2009-2010.

**Texas Assessment of Knowledge and Skills**

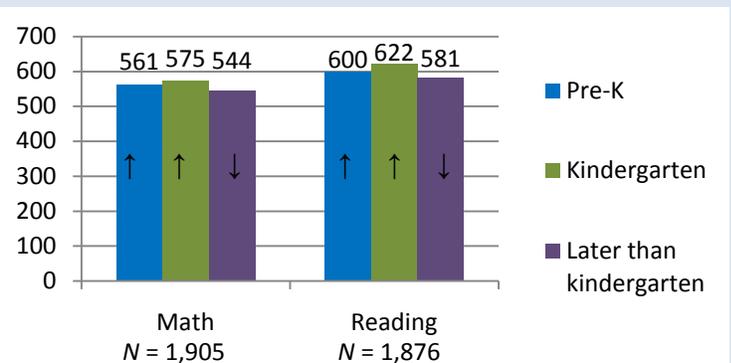
As shown in Figure 2, economically disadvantaged non-ELLs who first enrolled in AISD at kindergarten scored higher in reading and math than did similar students who enrolled in pre-K or in grades later than kindergarten. Students who enrolled in AISD pre-K did score significantly higher than did students who enrolled later than kindergarten; however, student stability within the district might be a contributor to this difference.

AISD pre-K enrollment did provide a significant advantage to economically disadvantaged ELLs on the 3<sup>rd</sup> grade math and reading TAKS. On average, those who enrolled in pre-K scored 16 more points on the math TAKS than did students who first enrolled in kindergarten and 29 more points than did students who entered AISD during later grades (Figure 3). Moreover, economically disadvantaged ELLs who attended pre-K performed as well on math TAKS as economically disadvantaged non-ELLs who have been in the district since kindergarten, while economically disadvantaged ELLs who first entered the district in kindergarten lagged behind their cohort’s economically disadvantaged non-ELLs by 16 points on average. This finding implies that AISD pre-K may contribute to eliminating the achievement gap in math due to ELL status.

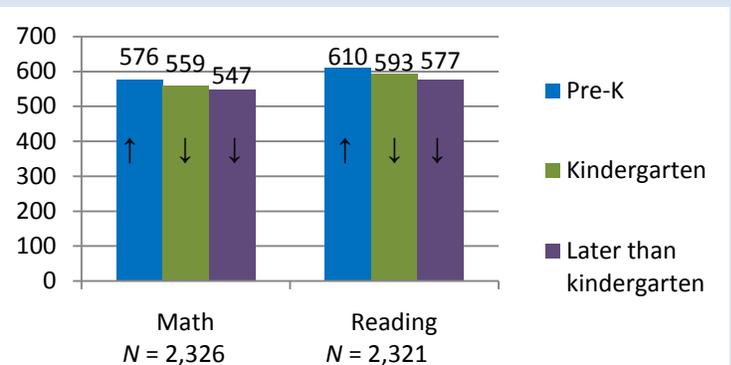
Former AISD pre-K students also scored significantly higher on average on reading TAKS than did students who entered in kindergarten or later.

**MATH AND READING TAKS RESULTS, SPRING 2010**

**Figure 2. Economically Disadvantaged, Non-English Language Learners’ Average Scale Scores, by AISD Grade Entry**



**Figure 3. Economically Disadvantaged, English Language Learners’ Average Scale Scores, by AISD Grade Entry**



Source. AISD TAKS records

Notes. Up and down arrows indicate significant differences. Students who took the modified version of the exams were excluded from the analyses. Students were economically disadvantaged at the time of entry into the district and during the year of testing.

<sup>2</sup> Ninety-two percent of students from the 2005-2006 cohort qualified for pre-K by low income status. Fifty-seven percent of pre-K students were identified as ELL.

Curry, J. (2006). *Prekindergarten Expansion Grant Evaluation Report, 2005-2006*. (Publication No. 05.09) Austin, TX: Austin Independent School District.

## Developmental Reading Assessment (DRA) and Evaluación del Desarrollo de la Lectura (EDL)

DRA and EDL are criterion-referenced reading assessments used to identify students' independent reading level in terms of accuracy, fluency, and comprehension. Tests are individually administered by teachers at the middle and end of year for kindergarteners and beginning, middle, and end of year for first graders to determine students' "at grade level" performance. Unlike the TPRI and Tejas Lee, teachers are able to select the text they find appropriate for the student, which makes the assessments susceptible to confirmation bias (i.e., the tendency for people to choose based on preconceived notions of what they believe is true.<sup>3</sup>)

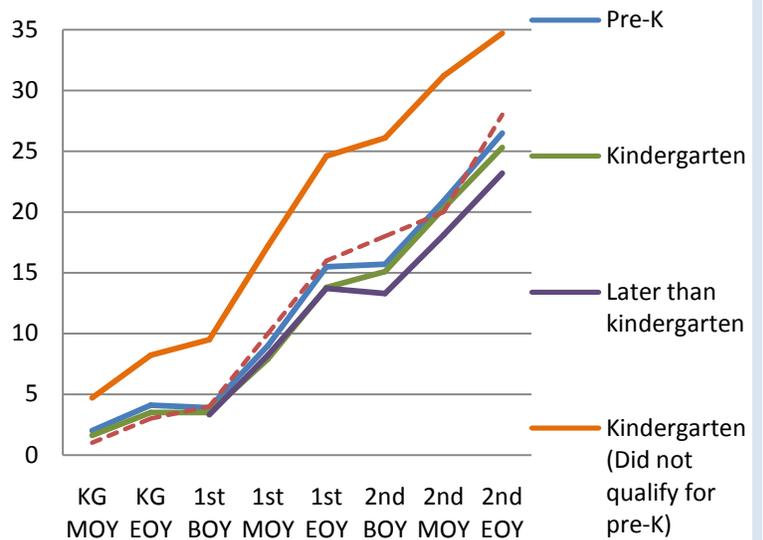
Low income non-ELL students who attended pre-K performed, on average, near the DRA performance of similar students who entered AISD in kindergarten (Figure 4). The average performance for all economically disadvantaged non-ELLs dipped below grade level at the beginning of 1<sup>st</sup> grade. Another dip took place at the beginning of 2<sup>nd</sup> grade for all economically disadvantaged students (regardless of ELL status), while the average performance of non-low income students slightly increased.

Low income ELLs who attended pre-K at AISD performed higher on the DRA/EDL, on average, than did students with similar characteristics who entered in kindergarten or later. The DRA/EDL score advantage experienced by the pre-K students over other economically disadvantaged ELLs continued through 1<sup>st</sup> grade and 2<sup>nd</sup> grade. However, the average performance for previously enrolled pre-K students slipped slightly below grade level by the end of second grade.

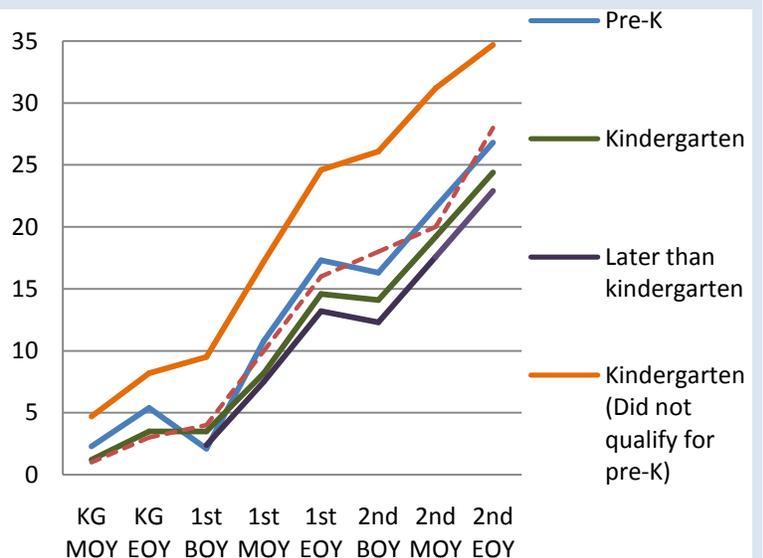
The lowest performing students on the DRA and EDL, on average, were economically disadvantaged students (ELLs or non-ELLs) who entered AISD in grades later than kindergarten. Students who were assumed to not have qualified for pre-K outperformed those students who had characteristics that would make them eligible for pre-K.

## DRA AND EDL, 2006–2007 THROUGH 2008–2009

**Figure 4. Economically Disadvantaged, Non-English Language Learners' Average Scores, by AISD Grade Entry**



**Figure 5. Economically Disadvantaged, English Language Learners' Average Scores, by AISD Grade Entry**



*Source.* AISD student assessment records  
*Notes.* The dotted red line represents "on grade level" performance. Kindergarten students who did not meet any of the eligibility requirements for pre-K in 2006–2007 were assumed to not have qualified for pre-K in 2005–2006 for purposes of the analyses; however, this assumption might not reflect students' true pre-K eligibility status. BOY indicates "beginning of year;" MOY indicates "middle of year;" and EOY indicates "end of year".

<sup>3</sup> Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, 2, 175-220.

**TEXAS PRIMARY READING INVENTORY (TPRI) AND EL INVENTARIO DE LECTURA EN ESPAÑOL DE TEJAS (TEJAS LEE)**

TPRI and Tejas Lee are screening and monitoring assessments used to help teachers identify strengths and problem areas in students' reading/language arts development, so teachers may effectively deliver appropriate instructional activities for each of their students. The assessments are given to kindergarten through third-grade students by their teachers at three time periods during the year.

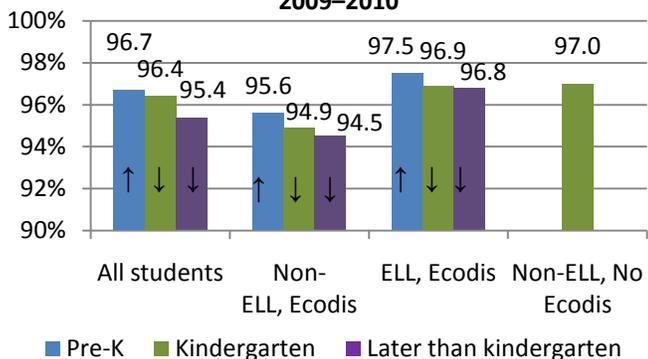
Economically disadvantaged non-ELLs who were enrolled in AISD pre-K scored higher on the 1<sup>st</sup> grade TPRI than did those who first enrolled at AISD in kindergarten; however, performance dropped for all groups at the beginning of 2<sup>nd</sup> grade, closing the performance gap between former AISD pre-K students and students who enrolled in kindergarten.

Economically disadvantaged ELLs who were former AISD pre-K students continued to have higher performance on the TPRI/Tejas Lee throughout 1<sup>st</sup> and 2<sup>nd</sup> grade compared with other economically disadvantaged ELLs who first enrolled in AISD during kindergarten or later.

**THIRD GRADE ATTENDANCE RATES**

Former AISD pre-K students had significantly higher attendance rates than did all other students in the 2009–2010 3<sup>rd</sup> grade cohort, regardless of economic status or ELL status (Figure 8). When taking economic status and ELL status into account, economically disadvantaged ELLs who attended AISD pre-K had the highest averaged attendance rate (97.5%) compared to all other groups.

**Figure 8. Third Grade Attendance Rates, by AISD Grade Entry, 2009–2010**

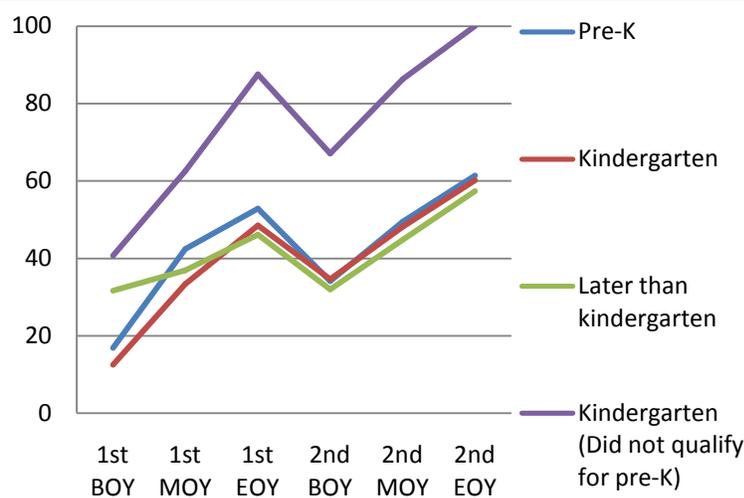


Source. AISD student attendance records

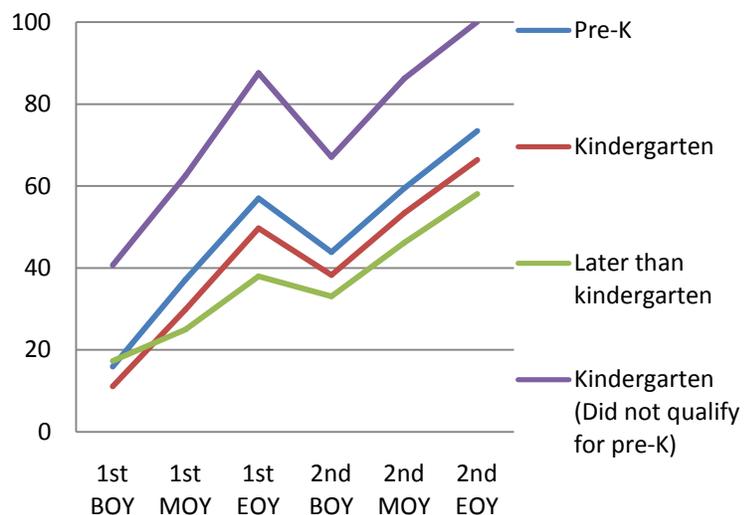
Note. Up and down arrows indicate significant differences.

**TPRI AND TEJAS LEE, 2007–2008 THROUGH 2008–2009**

**Figure 6. Economically Disadvantaged, Non-English Language Learners' Average Scores, by Grade Entry**



**Figure 7. Economically Disadvantaged, English Language Learners' Average Scores, by Grade Entry**



Source. AISD student assessment records

Notes. TPRI/Tejas Lee data for the kindergarten year were unavailable for the analyses. Kindergarten students who did not meet any of the eligibility requirements for pre-K in 2006–2007 were assumed to not have qualified for pre-K in 2005–2006 for purposes of the analyses; however, this assumption might not reflect students' true pre-K eligibility status. BOY indicates "beginning of year;" MOY indicates "middle of year;" and EOY indicates "end of year".