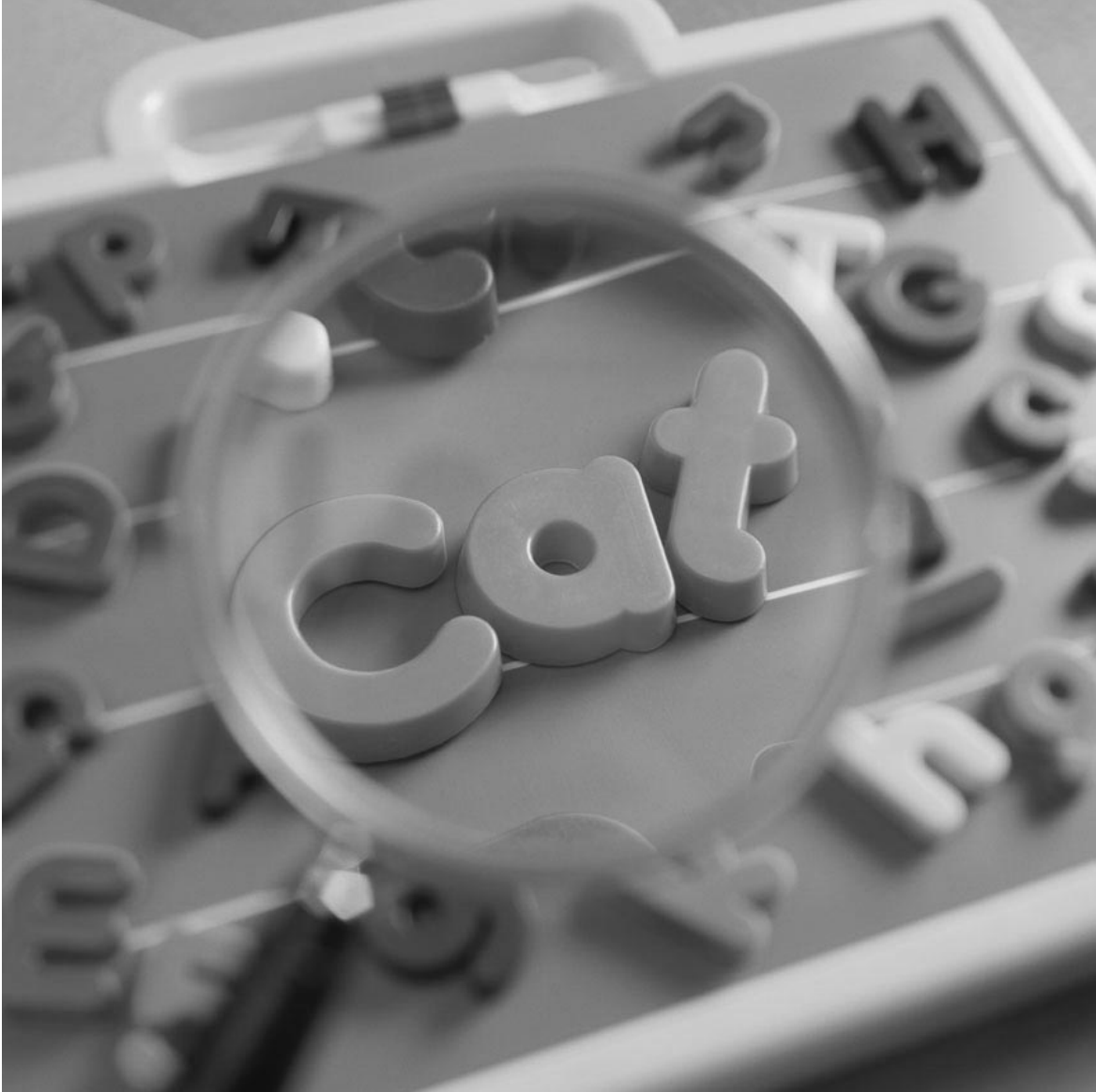


Prekindergarten Evaluation, 1999-2000



Austin Independent School District
Office of Program Evaluation
September 2000

Full-Day Prekindergarten

1999-2000

Austin Independent School District

Office of Program Evaluation

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The AISD prekindergarten program is an important component of the state and district goal of having every student reading on grade level by the end of third grade. In 1999-2000, 57 of the 71 AISD elementary schools provided prekindergarten (pre-K) education. AISD has both half-day and full-day pre-K programs. The AISD prekindergarten program served 3,571 four-year-olds during 1999-2000.

Program effectiveness for pre-K was determined by gains from pretest to posttest on the English language *Peabody Picture Vocabulary Test-III* (PPVT-III) and the Spanish language *Test de Vocabulario en Imágenes Peabody* (TVIP). The PPVT-III and TVIP measure knowledge of receptive (hearing) vocabulary.

Traditionally, half-day programs have shown greater gains from pretest to posttest on the PPVT-III and on the TVIP. However, in 1999-2000, full-day programs showed greater gains than half-day programs in every comparison. *T* tests were performed to determine if differences found were statistically significant. The gains for Spanish-speaking full-day students on the TVIP and for monolingual English full-day students on the PPVT-III were found to be significantly higher than gains for similar students in half-day pre-K programs. Therefore, it was found that, when tested in their native language (English or Spanish), the gains for full-day students were found to be significantly higher than gains for half-day students.

In 1999-2000, there were 179 pre-K classrooms in AISD. A look at average overall gains on the PPVT-III and TVIP for the 93 bilingual classrooms and on the PPVT-III for 86 English only classrooms reveals the following general observations:

- All of the bilingual classes showed a gain in either English or Spanish.
- Seventy-seven percent of the bilingual classes showed a gain in both English and Spanish.
- Thirteen percent of the bilingual classes showed a gain in English and a loss in Spanish.
- Ten percent of the bilingual classes showed a gain in Spanish and a loss in English.
- Ninety-nine percent of English-only classes had an overall gain on the PPVT-III.

In the past, the extra half day of instruction was funded by Title I. In 1999-2000, AISD received a \$4.6 million *Prekindergarten Expansion Grant* from the state that was used to reimburse schools that were using Title I funds to pay for the extra half day of instruction in their full-day pre-K programs. This evaluation examines the achievement growth of pre-K students in half-day and full-day programs to determine if the extra half day of school benefits students in receptive vocabulary.

Background

Texas Education Code, Section 29.153(a) requires school districts to offer a prekindergarten program if the district identifies 15 or more eligible (limited English proficient, educationally disadvantaged, or homeless) children who are at least four years of age. Educationally disadvantaged prekindergarten students are defined by the Texas Education Agency as students eligible to participate in the national free or reduced-price lunch program (referred to in this report as low-income students). Funding is provided for half-day prekindergarten through the State of Texas Foundation School Program.

Important changes for early childhood education have occurred as a result of Senate Bill 4 passed by the 76th Texas Legislature in 1999. The bill directs \$100 million in new funding to support *Instructional Excellence* for kindergarten and prekindergarten grant programs. Austin ISD was accepted to participate in the *Kindergarten and Prekindergarten Expansion Grant, Cycle 1*. The grant authorized expenditures for school districts and open-enrollment charter schools to expand prekindergarten services by operating an existing half-day prekindergarten on a full-day basis. AISD used the funds to replace Title I funds at campuses that were using those monies to support the extra half day of pre-K.

As a result of the legislation, the state provided teacher professional development programs related to accelerated instruction. In summer 1999, kindergarten teachers participated in the Kindergarten Teacher Reading Academy, training developed by the Texas Center for Reading and Language Arts which includes current information on research-based best practices in reading instruction. During summer 2000, the state offered training to first grade teachers through the First Grade Teacher Reading Academy. Second grade teachers will be trained during summer 2001.

This emphasis on early childhood education has also resulted in the development of the *Prekindergarten Curriculum Guidelines* published by the Texas Education Agency. The guidelines are based on knowledge of theory and research about how children develop and learn. The guidelines also provide a means to align the prekindergarten programs with the *Texas Essential Knowledge and Skills* (TEKS). The state *Kindergarten and Prekindergarten Expansion Grant, Cycle 2* funds will be used for professional development on the prekindergarten guidelines and for follow-up training for kindergarten teachers who attended a Kindergarten Academy this summer. Funds will also be used to provide curriculum training for full-day pre-K teachers.

Other districtwide initiatives also provide support for literacy learning. The Academics 2000 grants in place in many of the elementary schools in AISD promote literacy in pre-K and kindergarten. In addition, the AISD language arts team offers training in components of balanced literacy through the Professional Development Academy.

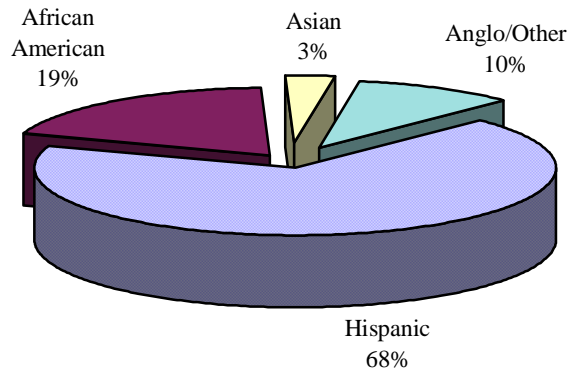
A report entitled *Improving Early Literacy for Preschool Children*, published by the LBJ School of Public Affairs, states that “*the groundwork for reading starts long before children begin formal instruction. Because many low-income children do not have rich literacy experiences during the critical preschool years, many fail to become good readers in elementary school. Exposing young children to early literacy should be part of a preschool program’s larger mission of meeting their physical, social, emotional, and intellectual needs.*” Prekindergarten education provides literacy experiences to four-year olds to help them on their way to becoming good readers.

Student Demographics

In 1999-2000, AISD offered prekindergarten instruction to students through both half-day and full-day programs. A total of 3,571 four-year-olds (2,523 full-day and 1,048 half-day students) attended pre-K during the school year. The number of students enrolled in pre-K has remained fairly constant over the past four years. Students who attended pre-K during the 1999-2000 school year represented a diverse population. According to AISD data files, 1999-2000 pre-K demographics include the following.

- Gender was balanced with 49.7% female and 50.4% male students.
- Thirty-seven percent of the students were limited English proficient.
- As shown in Figure 1, Hispanics made up the largest ethnic group (68%), followed by African Americans (19%), Anglo/Others (10%), and Asians (3%). These percentages represent an increase from 1998-99 to 1999-2000 in Hispanic and Anglo/Other students, and a decrease in African American and Asian pre-K students.

Figure 1: Ethnicity of AISD Pre-K Students, 1999-2000



The number of half-day classes continues to increase each year as new schools open with half-day classes. Teachers in half-day programs teach two groups of students--one group in the morning and another group in the afternoon--allowing them to serve more children. The number of full-day pre-K classes has declined for the past two years after reaching a high of 153 in 1997-98. Table 1 summarizes various comparison data from the past five years. (Note: These data include all students served at any point in a given year.)

Table 1: Demographic Information for the AISD Pre-K Program, 1995-96 to 1999-2000

Category	1995-96	1996-97	1997-98	1998-99	1999-2000
Half-Day Classes	56	68	70	72	74
Full-Day Classes	138	152	153	147	142
Teachers	164	186	188	183	179
Low-Income Students	3,267	3,437	3,364	3,310	*2,890
LEP Students	1,140	1,181	1,236	1,392	*1,336
Half-Day Students	901	942	967	1,021	1,048
Full-Day Students	2,498	2,652	2,596	2,532	2,523
Total Students	3,399	3,594	3,563	3,553	3,571

* Students can be both low income and LEP.

The number of pre-K students served at each campus varied widely in 1999-2000, and ranged from 7 students at Casis (non-Title I) to 170 students at Wooldridge (Title I). The average number of students per pre-K class in 1999-2000 was 19.9, up slightly from 19.4 in 1998-99. The increase in pupil: teacher ratio is likely due to the fact that there were five fewer full-day teachers serving approximately the same number of students as in 1998-99. The average number of years of teaching experience for pre-K teachers in AISD was 7.7 years. While 53% of the pre-K teachers had five or more years of teaching experience, 21% of pre-K teachers had zero or one year of experience.

Attendance

Because participation in pre-K is not required by the State of Texas, attendance is sometimes a problem for the schools. In 1999-2000, full-day pre-K students were absent an average of 9.9 days and half-day students were absent an average of 11.2 days. The half-day absentee rate is higher possibly because of the difficulty parents have with scheduling the other half of the day for their children.

Program Effectiveness

To measure achievement gains for pre-K students, the PPVT-III and the TVIP were administered in the fall and in the spring to a sample of students. Gains were calculated based on the pre- and posttest scores. All students were tested in English; Spanish LEP students were also tested in Spanish.

The sample was a randomly selected subset from each class at all 57 schools that offered pre-K. In fall 1999, 2,287 pre-K students were tested. Although every effort was made to posttest all students who had a valid pretest score, 268 fewer students were posttested due to withdrawals, illnesses, and relocations of eligible students. The posttest was administered to regular-calendar students in April and to year-round students in May. A total of 2,019 students (57% of all students) had valid pre- and posttest scores. The ethnicity and gender of the students tested closely matched that of pre-K overall.

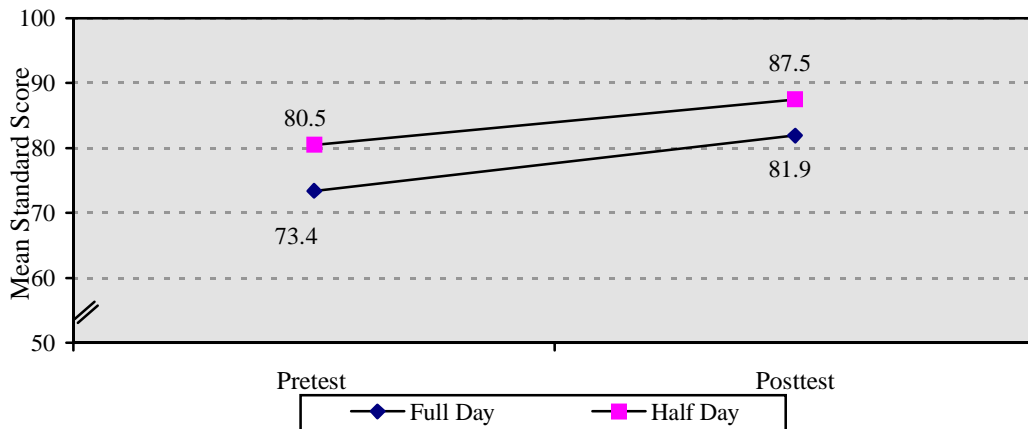
The PPVT-III and the TVIP measure knowledge of receptive (hearing) vocabulary in English or Spanish, respectively. Standard test scores are based on national age norms, with a mean of 100 and a standard deviation of 15. The TVIP has the same structure and standard score system as does the PPVT-III. For a student to maintain his or her standing relative to the national average, the gain score would be zero. Any gain greater than zero indicates that the student’s performance improved compared to the national average.

Comparisons reported in this evaluation will include half-day and full-day programs on the PPVT-III for English monolingual, Spanish LEP, and all students; and on the TVIP for Spanish-speaking students. In addition, full-day and half-day achievement gains on the PPVT-III and the TVIP for Title I and non-Title I schools are included in this report. *T* tests were performed to determine if differences found were statistically significant. A three-year longitudinal study is also included.

Half-Day and Full-Day Comparisons, 1999-2000

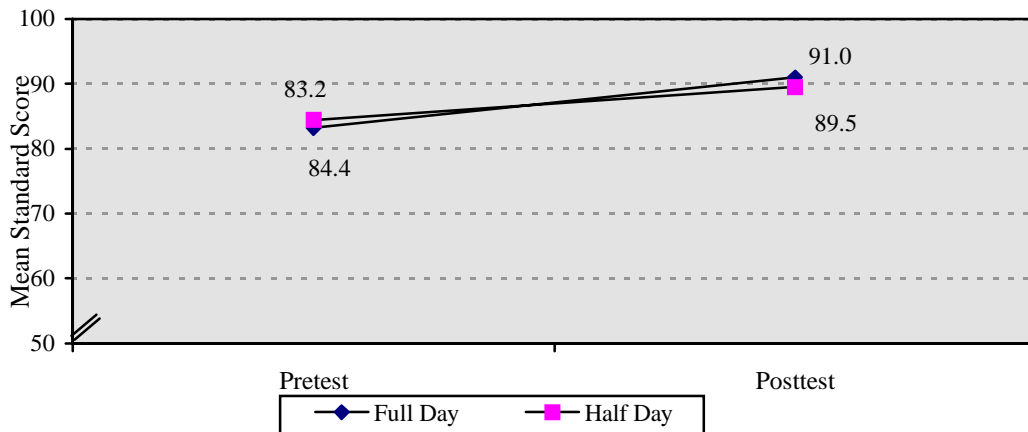
In 1999-2000, 34 AISD elementary schools provided full-day prekindergarten and 23 schools provided half-day pre-K education. The PPVT-III pre- and posttest scores include the scores of all students including Spanish LEP and other non-English speakers. While half-day pre-K students began and ended the 1999-2000 school year with a higher average pretest score, the average gain on the English language PPVT-III for full day students was higher (8.5 standard score points) than for half-day students (7.0 points). However, a *T* test of significance showed that the difference was not statistically significant. Figure 2 shows the 1999-2000 average PPVT-III pre- and posttest scores for all half-day and full-day pre-K students.

Figure 2: PPVT-III Average Pre- and Posttest Scores for Full-Day and Half-Day Pre-K Students, Fall 1999 and Spring 2000



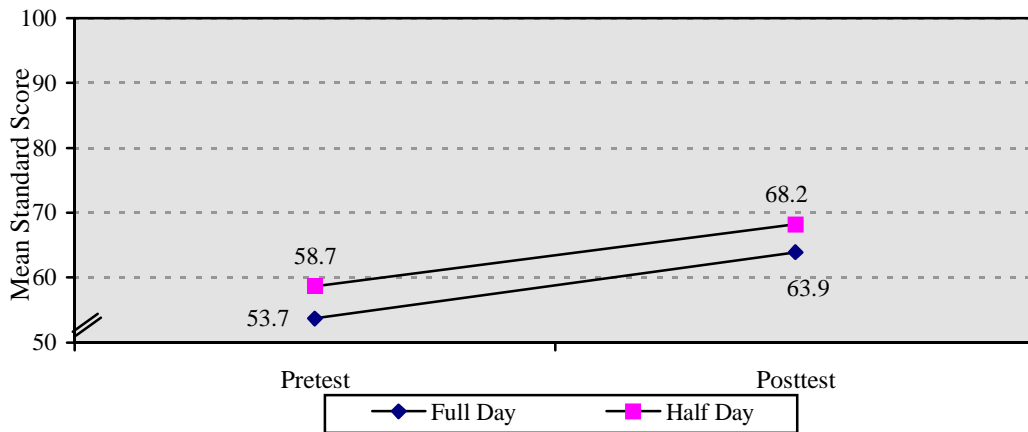
Spanish LEP full-day students outperformed half-day students on the TVIP in 1999-2000. Test results show that full-day Spanish LEP students began the year with lower average pretest scores than half-day students and ended the year at a higher average posttest score. In addition, full-day Spanish LEP students made a higher average gain (7.7 points) than did half-day Spanish LEP students (5.1 points). A *T* test of significance performed on the mean gains on the TVIP for the two groups showed that the mean gains for full-day Spanish LEP students were significantly higher than the mean gain for half-day Spanish LEP students. Figure 3 shows the average TVIP pre- and posttest scores for full-day and half-day Spanish LEP students.

Figure 3: TVIP Average Pre- and Posttest Scores for Full-Day and Half-Day Spanish LEP Pre-K Students, Fall 1999 and Spring 2000



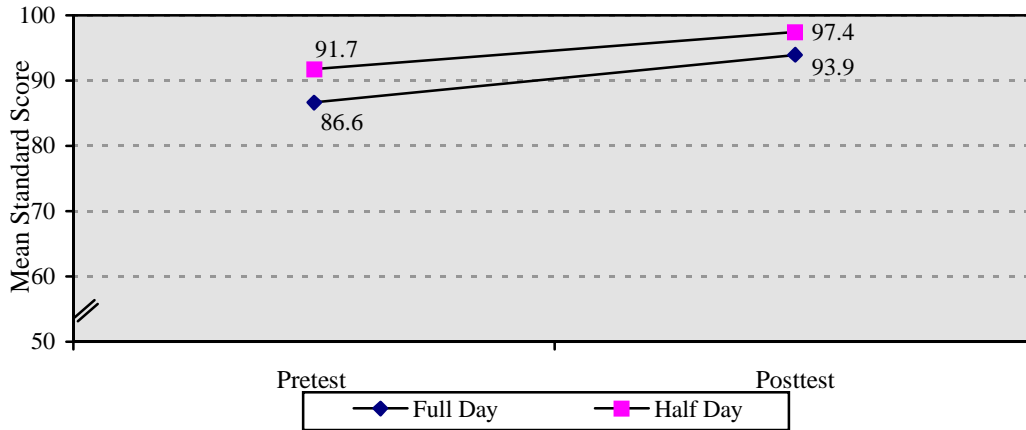
Overall, Spanish LEP students achieved higher average pre- and posttest scores on the TVIP than on the PPVT-III. However, Spanish LEP students showed higher gains on the PPVT-III than the TVIP. Average gains on the PPVT-III for Spanish-speaking full-day pre-K students were higher (10.2 standard score points) than for half-day students (9.5 points). However, a *T* test of significance showed that the difference was not statistically significant. Figure 4 shows the average pre- and posttest PPVT-III scores for Spanish LEP students in full-day and half-day programs.

Figure 4: PPVT-III Average Pre- and Posttest Scores for Spanish LEP Pre-K Students at Schools with Full-Day and Half-Day Programs, 1999-2000



Full-day monolingual English pre-K students also showed a higher average gain (7.3 standard score points) on the PPVT-III than half-day students did (5.7 points). A *T* test of significance on the mean gains for the two groups showed that the full-day monolingual English students' mean gain was significantly higher than the mean gain for monolingual English half-day students. Figure 5 shows PPVT-III scores for monolingual English students at full-day and half-day programs.

Figure 5: PPVT-III Pre- and Posttest Scores for English Monolingual Pre-K Students at Schools with Full-Day and Half-Day Programs, 1999-2000



In three out of four full-day and half-day comparisons, the half-day students began and ended the year with a higher average score than full day students. However, in every comparison full-day students made higher average gains than half-day students. The encouraging news for full-day pre-K is that this year the differences in mean gains for full-day Spanish LEP students on the TVIP and for monolingual English students on the PPVT-III were significantly higher than for half-day students in those comparisons.

Title I/Non-Title I School Comparisons

In 1999-2000, 50 AISD schools met the district requirement of 60% or more low-income students that allowed them to receive Title I funds. There were 33 full-day and 11 half-day pre-K programs at the Title I elementary schools. Twelve non-Title I schools offered half-day programs, while only one non-Title I school offered full-day pre-K.

Typically, half-day pre-K students begin and end the year with higher average scores than full-day students. A possible explanation for this could be found in the percentage of economically disadvantaged students who attend these schools. In 1999-2000, the average percentage of low-income students at schools that offered full-day programs was 82%, while the average percentage of low-income students at schools that offered half-day pre-K was 53%. A further breakdown of the half-day population shows that an average of 72% of students at half-day Title I schools are low income, while an average of 35% of students at half-day non-Title I schools are low income.

Although the pre-K evaluation examines the districtwide prekindergarten program, gains for students at Title I schools are of particular interest for this report. In 1999-2000, there were 1,771 students with valid pre- and posttests at Title I schools (88% of all students tested). The Spanish assessment was administered to 705 students at Title I schools (92% of all Spanish LEP students tested).

In years past, full-day programs were at Title I schools and half-day programs were at non-Title I schools. However, in recent years, schools new to Title I funding have opted for half-day programs because of the cost involved in operating a full-day program. In addition, three of the Title I schools that formerly

had full-day programs are offering half-day pre-K programs in 2000-01. Schools with full-day programs want to know how the extra half-day of instruction impacts pre-K achievement.

In order to present a more thorough analysis of the data, Figures 6-9 present 1999-2000 prekindergarten comparisons on the PPVT-III and TVIP by Title I full-day, Title I half-day, and non-Title I half-day programs. (There are not enough non-Title I full-day students to report.) All three groups showed gains from pretest to posttest. Average gains for Title I full-day and non-Title I half-day students are generally parallel on the three English language comparisons (Figures 6, 8, and 9). However, Title I half-day students had lower gains on the PPVT-III for all students (Figure 6) and for Spanish-speaking students (Figure 8). Average gains are similar for Title I and non-Title I half-day monolingual English students on the PPVT-III (Figure 9).

In the three English language comparisons, non-Title I half-day pre-K students began and ended the year with higher average scores on the PPVT than both Title I half-day and full-day students. However, when comparing the results on the TVIP for Spanish-speaking students (Figure 7), it is apparent that the full-day Spanish LEP students out-performed both the half-day Title I and non-Title I students.

Figure 6: Title I Full-Day, Title I Half-Day, and Non-Title I Half-Day Pre-K Comparisons for All Students on the PPVT-III, 1999-2000

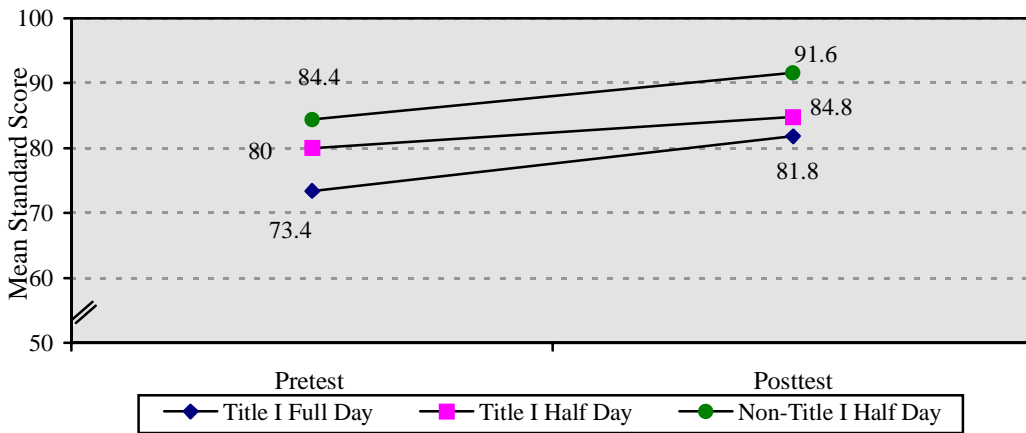


Figure 7: Title I Full-Day, Title I Half-Day, and Non-Title I Half-Day Pre-K Comparisons for Spanish-Speaking Students on the TVIP, 1999-2000

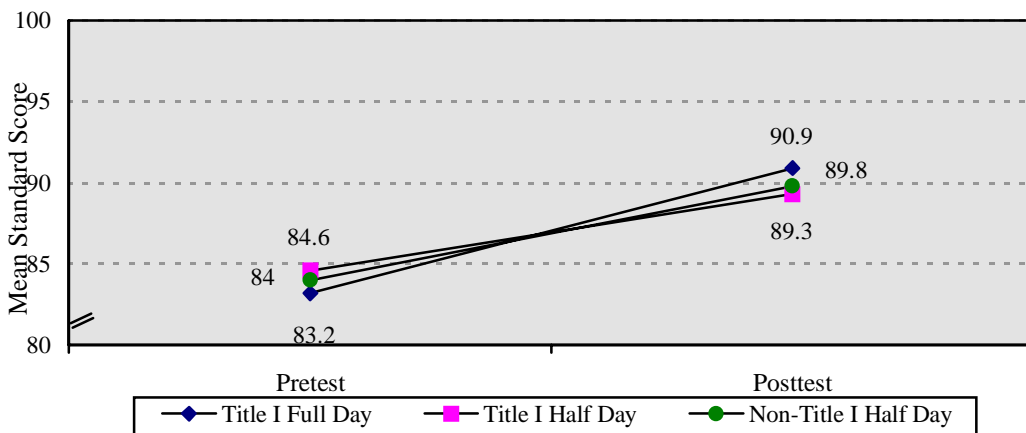


Figure 8: Title I Full-Day, Title I Half-Day, and Non-Title I Half-Day Pre-K Comparisons for Spanish-Speaking Students on the PPVT-III, 1999-2000

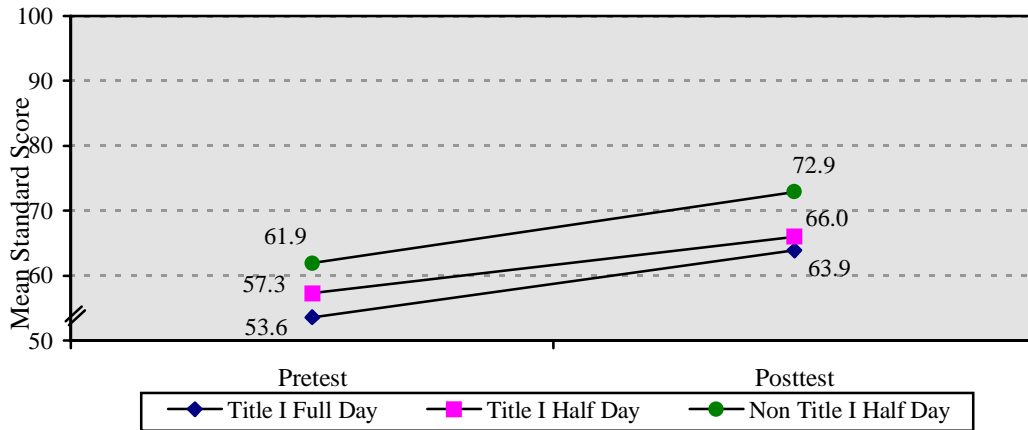
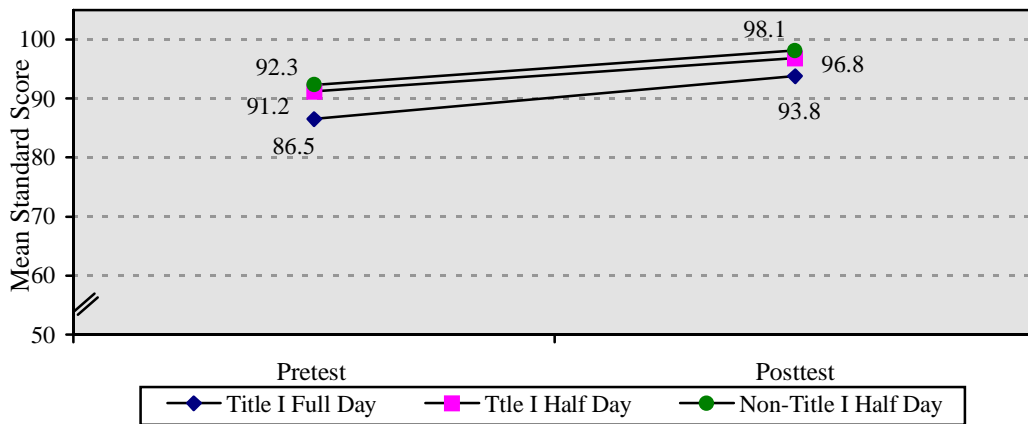


Figure 9: Title I Full-Day, Title I Half-Day, and Non-Title I Half-Day Pre-K Comparisons for English Monolingual Pre-K Students, 1999-2000

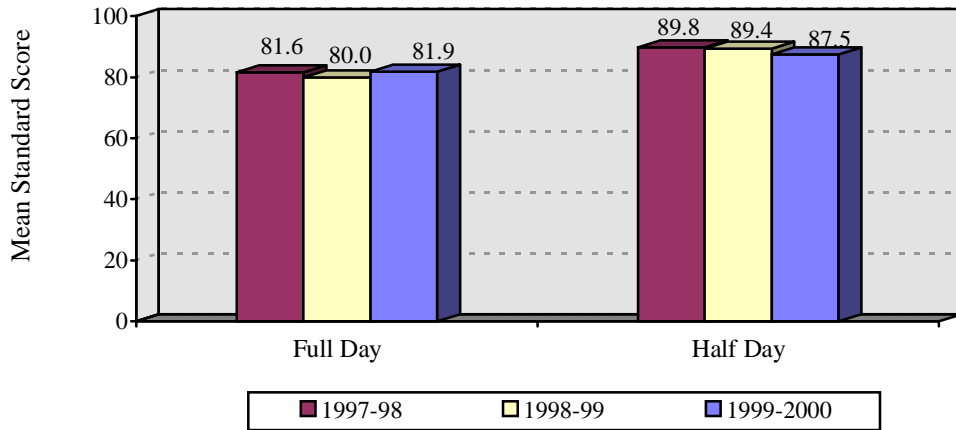


Longitudinal Comparisons

In 1997-98, the district began using the newly revised version of the Peabody Picture Vocabulary Test, the PPVT-III. Prior to that year, the PPVT-R was used for assessment in pre-K. Consequently, longitudinal comparisons of gains are reported for full-day and half-day programs on the PPVT-III and the TVIP beginning with 1997-98 scores.

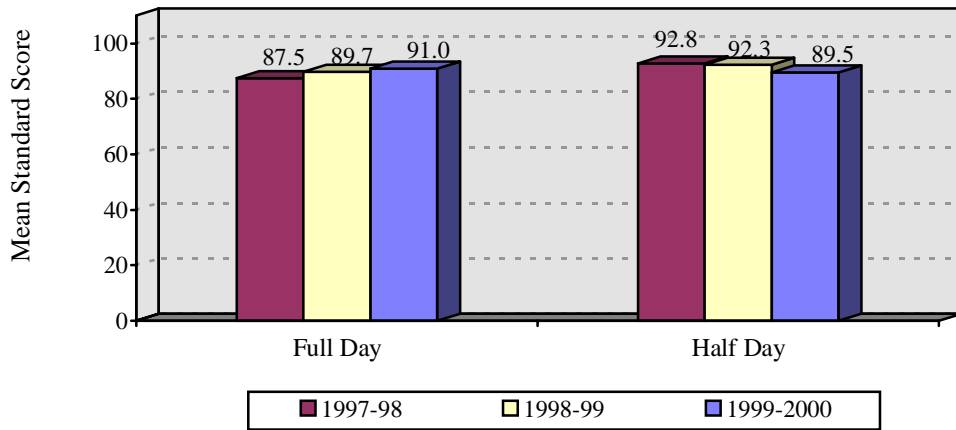
District decision-makers often raise the question about the effectiveness of the extra half day of pre-K at full-day programs. When examined over a three-year span, it can be seen that average PPVT-III posttest scores for half-day programs declined slightly each year. Full-day average posttest scores have increased after a decline in 1998-99. Figure 10 shows the average PPVT-III posttest scores for half-day and full-day students in 1997-98 through 1999-2000.

Figure 10: PPVT-III Posttest Comparisons for All Pre-K Students by Half-Day and Full-Day, 1997-98 through 1999-2000



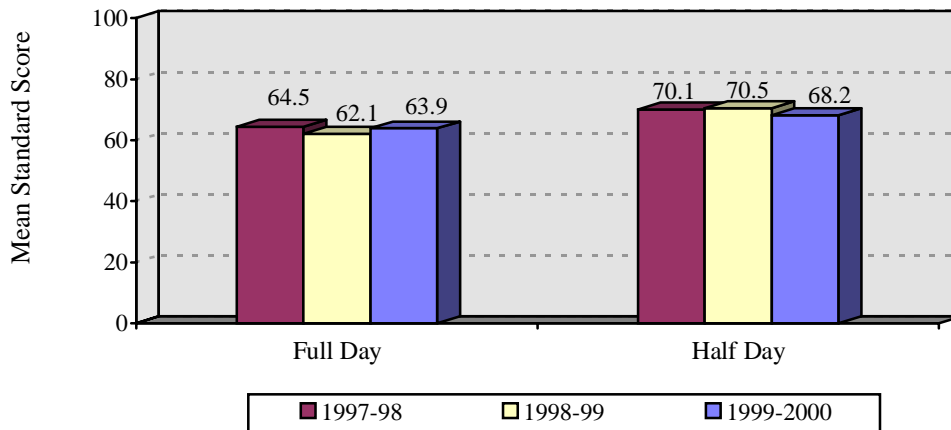
Average posttest scores on the TVIP show improvement each year for full-day students and a decline in achievement for half-day students. Figure 11 shows the posttest comparisons for full-day and half-day Spanish LEP students on the TVIP.

Figure 11: TVIP Posttest Comparisons for Half-Day and Full-Day Spanish LEP Pre-K Students, 1997-98 through 1999-2000



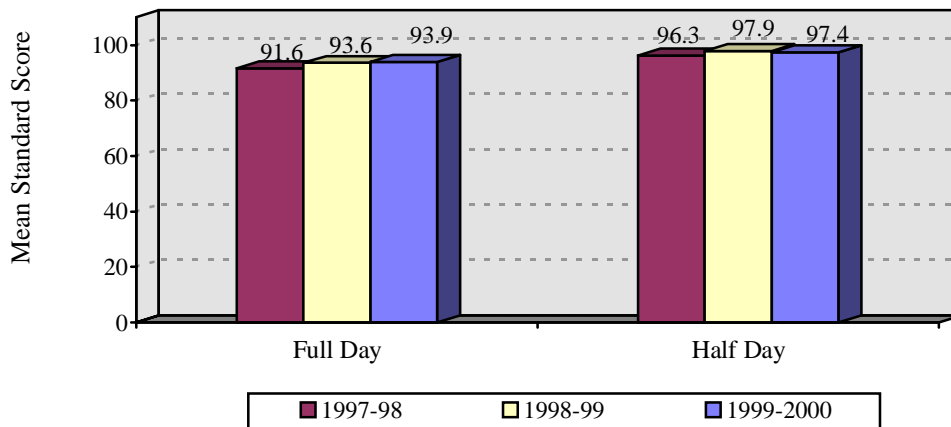
On the English version of the test, Spanish LEP half-day students showed a decrease in the average posttest scores from 1998-99 to 1999-2000, full-day students showed an increase. Both half-day and full-day programs have lower average posttest scores this year than in 1997-98. Figure 12 shows the PPVT-III comparison for Spanish LEP students by full-day and half-day programs, 1997-98 through 1999-2000.

Figure 12: PPVT-III Posttest Comparisons for Half-Day and Full-Day Spanish LEP Pre-K Students, 1997-98 through 1999-2000



The final three-year comparison examines monolingual English posttest scores. The full-day English only students have had a steady increase in average posttest scores for the past two years. While the average posttest scores are higher for half-day than full-day students in each of the three years, the 1999-2000 posttest average for half-day students was lower than the 1998-99 average score. Figure 13 shows the PPVT-III posttest comparisons for half-day and full-day monolingual English students, 1997-98 through 1999-2000.

Figure 13: PPVT-III Posttest Comparisons for Half-Day and Full-Day Monolingual English Pre-K Students, 1997-98 through 1999-2000



Students Scoring in Average Range

It is important to know how prepared the prekindergarten students will be when they get to kindergarten. Although 100 is the national average score, there is an average range (low average to high average) for both the PPVT-III and the TVIP of 85-115, which is one standard deviation above and below the mean. Each score was examined to determine if it fell within this range for all students taking the PPVT-III, all students taking the TVIP, Spanish LEP students taking the PPVT-III, and monolingual English students only on the PPVT-III. Analysis of these data reveals the following information:

- 58% of all students taking the PPVT-III scored in the average range at the posttest. (This includes the Spanish LEP students.);

- 63% of all Spanish LEP students scored in the average range at the posttest on the TVIP;
- 16% of Spanish LEP students scored in the average range at the posttest on the PPVT-III;
- 82% of monolingual English students scored in the average range at the posttest on the PPVT-III; and
- 10% of Spanish LEP students scored in the average range at the posttests on both the PPVT-III and the TVIP.

In addition, 449 (22%) of all students taking the PPVT-III had a standard score of 100 or higher, and 249 (32%) of all Spanish LEP students tested had a standard score of 100 or higher on the posttest. The *minimum* goal should be to advance students to the average range on the PPVT-III or on the TVIP during prekindergarten to accelerate future learning in kindergarten.

Conclusions and Recommendations

The AISD prekindergarten program is an important part of the systemic effort to have every student reading on grade level by the end of third grade. There is promising potential in the pre-K program that can make a difference in the success of students in later years of school, but it has yet to be fully realized.

Traditionally, half-day programs have shown greater gains on the PPVT-III and the TVIP. However, in 1999-2000, full-day programs showed greater gains in every comparison (two of the four comparisons were statistically significant). This was the first year since *T* tests of significance have been completed that the results for average gains made by full-day pre-K students have been found to be statistically significant in the following areas.

- Average gains for full-day Spanish LEP students were significantly higher than half-day Spanish LEP students on the TVIP. In addition, Spanish LEP students began the year with a lower average pretest score, but ended the year at a higher posttest average than half-day Spanish LEP students.
- Average gains were significantly higher for monolingual English students at full-day programs than for half-day monolingual English students.

These findings indicate that, when tested in their native language (English or Spanish), the gains for full-day students were found to be significantly higher than gains for half-day students. Full-day programs are beginning to show results from the additional time available for instruction each day. This is important information for Title I schools because 33 of the Title I schools offered full-day pre-K programs.

In 2000-01, AISD will use funds from the state *Prekindergarten Expansion Grant* to provide training on the state pre-K curriculum guidelines (all pre-K teachers) and on new curriculum (full-day pre-K teachers). This training may have additional impact on the PVT-III and TVIP achievement for full-day students.

Title I half-day students showed lower gains than Title I full-day students in all comparisons in 1999-2000. Schools with full-day pre-K that are considering changing to a half-day program may want to look at this finding when considering what is best for their pre-K students.

Bilingual students seem to be some of the greatest benefactors of pre-K, with 77% of the bilingual classrooms having a gain in both English and Spanish. Also, 99% of the English only classrooms showed a gain. It is also encouraging to find that 58% of all students (including Spanish LEP students) who took the PPVT-III scored in the average range at the posttest, 63% of all Spanish LEP students scored in the average range on the TVIP, and 82% of monolingual English students scored in the average range on the PPVT-III.

Some changes are occurring in prekindergarten this year. Three Title I schools (Blanton, Houston, and Linder) that have offered full-day programs in the past will offer half-day programs in 2000-01. In addition, three of the schools that have been year-round schools (Barrington, Winn, and Wooldridge) will follow the traditional school calendar this year. Also, the PPVT-III and TVIP will be the only formal

assessments for pre-K in 2000-01. The district has adopted the *Texas Primary Reading Inventory* (TPRI) to satisfy the state requirement for assessment of kindergarten through grade 2 students. The TPRI does not include a pre-K assessment. Therefore, the PPVT-III and TVIP testing will continue to be an important part of the pre-K evaluation for 2000-01.

The following recommendations are offered for consideration:

- Continue to monitor progress of Spanish LEP pre-K students to substantiate the preliminary findings of differential achievement gains in full-day vs. half-day programs.
- Compare test results of pre-K students in Title I schools that have reverted to half-day programs with results of pre-K students in Title I schools that continue to serve students in a full-day setting.
 - Continue to collaborate with the early childhood education curriculum staff to evaluate the effectiveness of pre-K initiatives funded by federal and state grants.
 - Closely monitor the progress of children who are below average on PPVT-III and TVIP assessments and other teacher assessments through kindergarten and the early grades to make sure that intervention and assistance is available to them in language and literacy (e.g., S.O.A.R. or LEP summer school, Reading Recovery, literacy groups).
 - Investigate the effects of professional development on student learning in full-day pre-K programs for the *Prekindergarten Expansion Grant* from the state.
 - Share PPVT-III and TVIP results for bilingual pre-K students with bilingual administrative and evaluation staff to support the LEP summer school efforts.

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