



**IMPROVING STUDENT LITERACY: READ 180
IN THE AUSTIN INDEPENDENT SCHOOL DISTRICT
2004-05**

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Summary of Findings

Background

In fall 2004, the Austin (Texas) Independent School District (AISD) began using Scholastic's READ 180 to help struggling seventh- and eighth-graders become proficient readers and increase their opportunities for success in school. This report presents the results of a study of the changes in reading proficiency achieved by READ 180 participants during the 2004-05 school year. Wherever possible, the report presents findings about how the achievement results of READ 180 students compare with carefully matched groups of nonparticipants.

READ 180 Participants

AISD students selected to participate in READ 180 were either Low English Proficiency (LEP) students, special education students, or students performing below grade level on measures of reading proficiency. Of the 343 seventh- and eighth-grade READ 180 participants taking the English language version of the 2004 Texas Assessment of Knowledge and Skills (TAKS) Reading Test in the previous grade, 98 percent did not meet the test's statewide standard for their respective grades. Ninety-six percent of the seventh- and eighth-grade READ 180 participants of 2004-05 scored below 50 normal curve equivalents¹ (NCEs) at the initial administration of the Scholastic Reading Inventory (SRI). About 90 percent of the participants were classified as LEP and just over 5 percent were identified as eligible for special education services.

Data and Data Analysis

The AISD provided a variety of student data for this study. The available data for all students included:

- Spring 2004 and Spring 2005 TAKS Reading Test scores, with language of administration and a flag indicating whether or not the student met the minimum standard of reading proficiency for the state of Texas.

¹ A normal curve equivalent (NCE) is a standardized score (based on a normal distribution) that allows for the comparison of scores across grades. NCEs consist of 99 equal units, an advantage over percentiles and grade equivalents in analyzing changes in test scores. Because NCE scores are equal units, the NCEs for a group of students can be averaged.

- Demographic data—including LEP status, economically disadvantaged status, gender, ethnicity, grade level (for 2003-04 and 2004-05), and special education status.

In addition to these data for all students, initial (fall) and final (spring) SRI scores were available for the majority of READ 180 students in 2004-05.

The data available for this study permit several kinds of analysis of changes in reading proficiency, including:

- Analyses that rely on the results of the TAKS Reading Test to compare changes in reading proficiency between 2004 and 2005 for READ 180 participants and a matched sample of nonparticipants.
- Analyses of initial reading proficiency measured by the SRI, and gains in proficiency while participating in READ 180 for READ 180 participants, but not for any group of nonparticipants.
- Analyses that compare the gains in reading proficiency measured by the SRI among READ 180 participants, including conversion of these gains into estimates of grade-level gains.

Student-level exposure to the READ 180 software was not available at the time of the writing of this report.

Note: All discussion of TAKS Reading Test scores below refer only to the English-language version of the test, and only to those students who were in the sixth or seventh grade in 2003-04 and the seventh or eighth grade in 2004-05.

Who Participated in READ 180?

READ 180 students, though drawn from the general AISD population, were selected deliberately in order to target students reading below grade level. Exhibit A below presents the demographic and 2004 TAKS Reading Test scores and proficiency rates for students participating in READ 180 in AISD in 2004-05, and for both the matched participant and nonparticipant groups.

Exhibit A
2005 Student Demographics for All READ 180 and Nonparticipant Students and Matched READ 180 and Nonparticipant Students

Characteristics	All READ 180 Students	All Nonparticipants	Matched READ 180 Students ²	Matched Nonparticipants
Grade	(N=409)	(N=10,098)	(n=307)	(n=307)
Grade 7	68.0%	48.6%	67.8%	67.8%
Grade 8	32.0%	51.4%	32.2%	32.2%
Gender	(N=409)	(N=10,098)	(n=307)	(n=307)
Female	45.7%	48.8%	45.9%	45.9%
Male	54.3%	51.2%	54.1%	54.1%
Race	(N=409)	(N=10,098)	(n=307)	(n=307)
African American	2.9%	13.6%	3.6%	3.6%
Asian	1.2%	2.5%	1.6%	1.6%
Hispanic	94.9%	51.6%	94.1%	94.1%
Native American	0.2%	0.3%	0.3%	0.3%
White	0.7%	32.0%	0.3%	0.3%
LEP Student	(N=403)	(N=9,646)	(n=307)	(n=307)
Yes	90.1%	11.8%	88.6%	73.3%
Economically Disadvantaged	(N=403)	(N=9,646)	(n=307)	(n=307)
Yes	95.0%	53.2%	94.8%	94.8%
Special Education	(N=403)	(N=9,646)	(n=307)	(n=307)
Yes	5.2%	15.1%	3.3%	3.3%
2004 TAKS Reading Proficiency	(N=343)	(N=7,649)	(n=307)	(n=307)
Reading Score (NCEs)	15.7	49.5	16.5	17.4
Met Standard	2.3%	81.0%	2.6%	9.4%

Exhibit reads: Sixty-eight percent of the 409 READ 180 students in 2005 were seventh-graders.

² One hundred and two READ 180 students could not be included in the matching procedure because data were missing for one or more of the categories used for matching. READ 180 matched students were required to have data for initial and final SRI scores and for the 2004 and 2005 TAKS Reading Test scores, as well as to not be missing any demographic data. The vast majority of sample attrition occurred with test data requirements.

Key Findings

1. **READ 180 students gained more than the matched nonparticipants on the 2005 TAKS Reading Test.** More specific findings about this overall pattern, as well as the prior performance of matched and nonmatched students, include the following:
 - Both READ 180 participants and a matched comparison group of nonparticipants scored higher on the 2005 TAKS Reading Test than they did in 2004. However, READ 180 students experienced a larger gain (6.6 NCEs, ± 0.6) than did their matched counterparts (a gain of 4.7 NCEs, ± 0.7), with the difference in gains between groups being statistically significant (Exhibit B).

Exhibit B
Average Scores of All AISD Students,
Matched READ 180 Participants and Matched Nonparticipants,
2004 and 2005 TAKS Reading Tests³

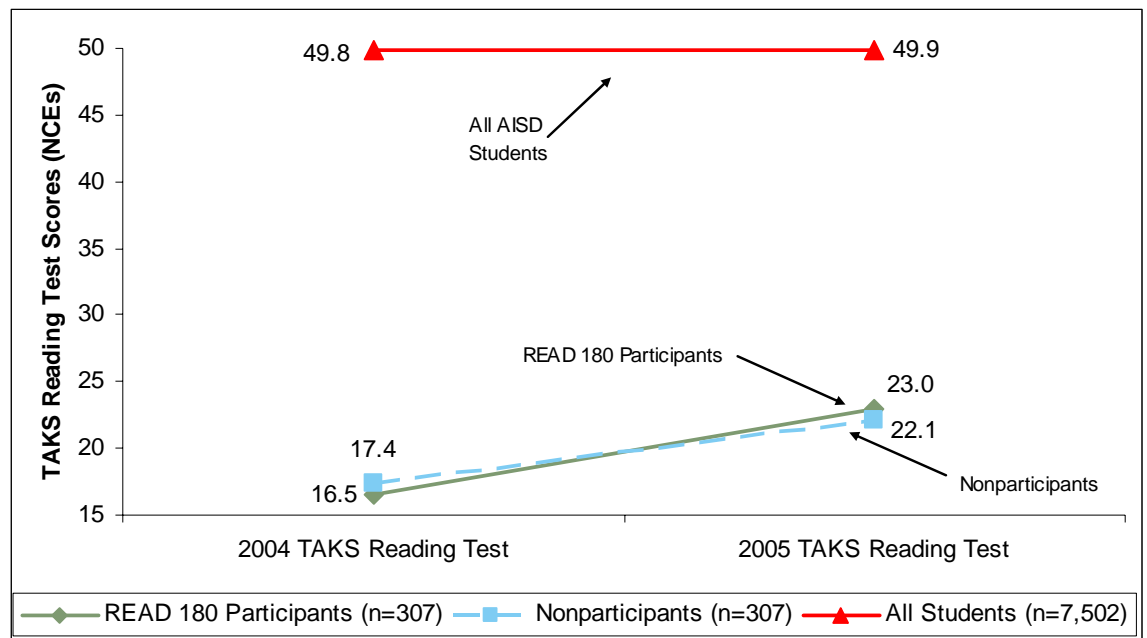


Exhibit reads: READ 180 participants averaged a score of 16.5 NCEs on the 2004 TAKS Reading Test, and an average score of 23.0 NCEs on the 2005 TAKS Reading Test.

³ Students shown as “All AISD students” were required to have both a 2004 and 2005 TAKS Reading Test score (English-language version) in the appropriate school grades.

- Because READ 180 deliberately targets students reading below grade level, their average performance on the 2004 TAKS Reading Test was below that of other AISD students (Exhibit C).

Exhibit C
2004 TAKS Reading Test Scores
All READ 180 Participants and Nonparticipants with Requisite Data

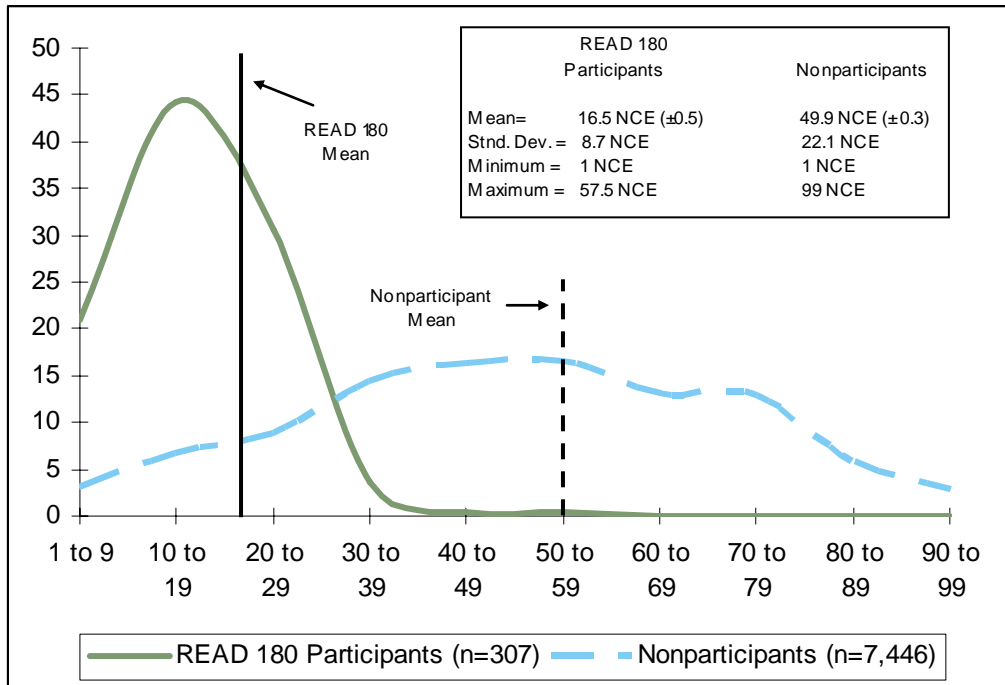


Exhibit reads: READ 180 participants averaged a score of 16.5 NCEs on the 2004 TAKS Reading Test.

- However, through the matching process, we were able to obtain a nonparticipant sample from the AISD general population that was similar to those 307 READ 180 students and that was not missing necessary test or demographic data⁴ (Exhibit D).

Exhibit D
2004 TAKS Reading Test Scores
Matched READ 180 Participants and Nonparticipants

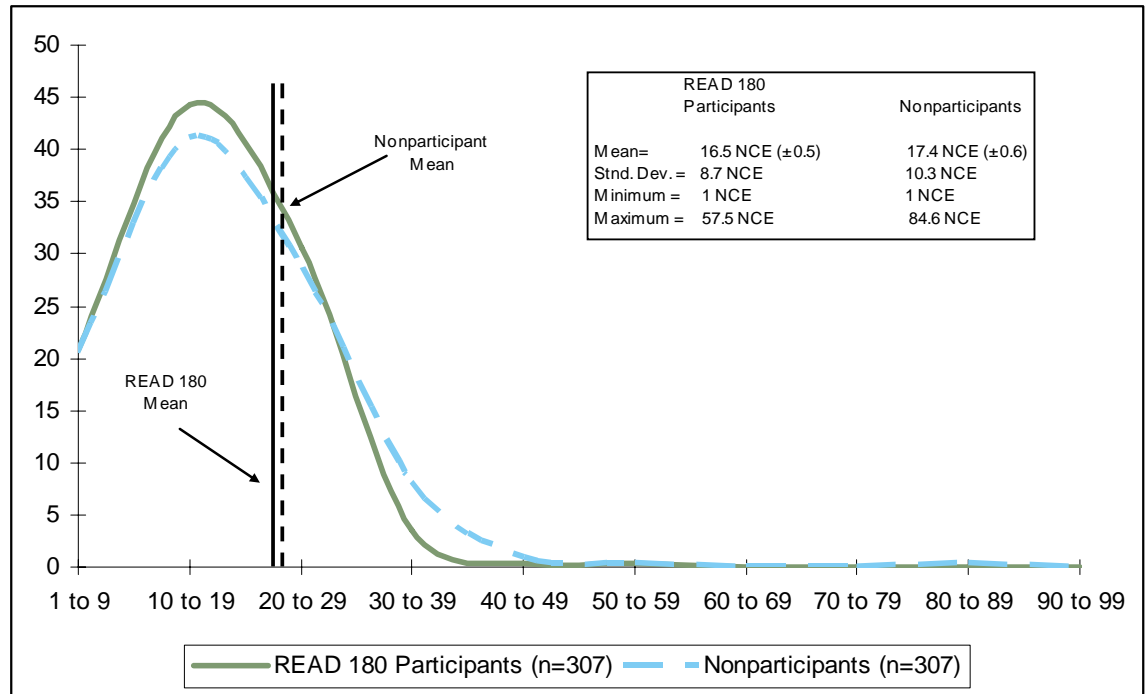


Exhibit reads: READ 180 participants averaged a score of 16.5 NCEs on the 2004 TAKS Reading Test.

⁴ PSA used propensity matching to identify a sample of students not participating in READ 180 whose characteristics most closely matched those of the READ 180 participants. Propensity matching is a procedure that finds the students in a pool of potential comparison students who best match the characteristics of the study sample (here, READ 180 participants) on a one-to-one basis. Wherever an exact match is not possible, the matching software aims for an approximate match. At the end of the routine, the software examines the total of the differences between the two groups of students. The software compares different sets of alternative matches and then identifies the set of matches that provides the smallest total differences.

For this study, exact matches were possible for school grade, ethnicity, gender, eligibility for special education services, and economically disadvantaged status. It was not always possible to find an exact match based on the 2004 TAKS Reading Test and LEP status. There was no statistically significant difference in the 2004 TAKS Reading Test (pre-test) between participants and nonparticipants. However, the percentage of LEP students was significantly higher in the READ 180 group (89%) than in the nonparticipant group (73%). This result is not surprising, given the high concentration of ELL students in READ 180 (as compared with the remaining population available for matching).

- Using these closely matched samples, we were able to obtain a clearer understanding of the possible impact of READ 180 on student achievement, as measured by the 2005 TAKS Reading Test (Exhibit E). (I think the arrows are pointing to the wrong groups; Read 180 mean is higher).

Exhibit E
2005 TAKS Reading Test Scores
Matched READ 180 Participants and Nonparticipants

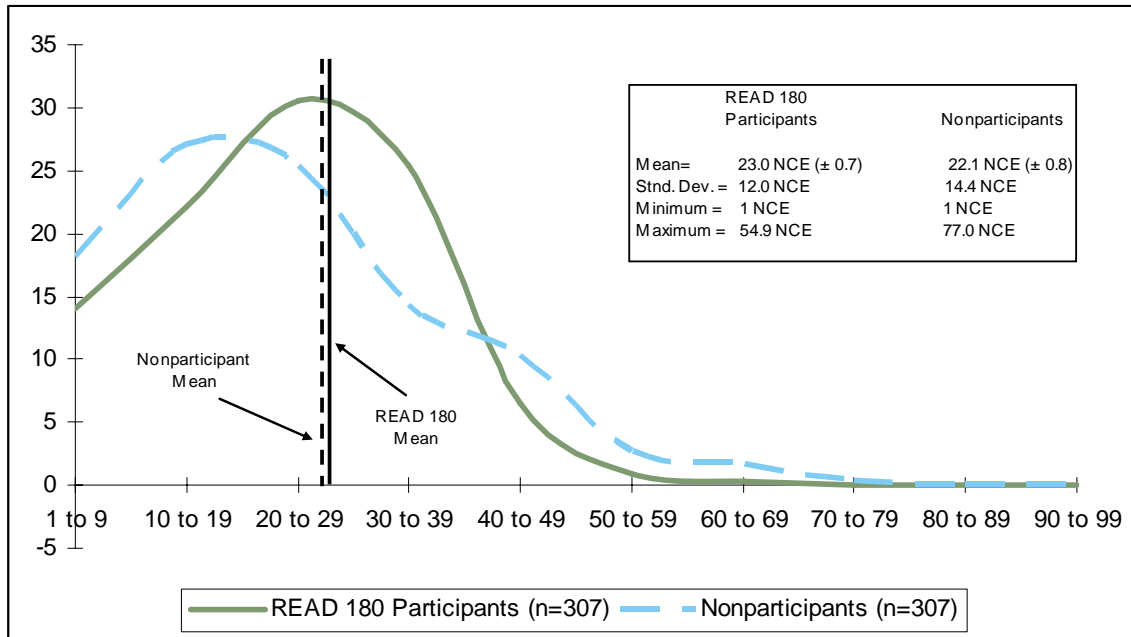


Exhibit reads: READ 180 participants averaged a score of 23.0 NCEs on the 2005 TAKS Reading Test.

2. ***READ 180 participants made noteworthy gains in their performance on the SRI assessment of reading proficiency.***

- Though READ 180 students did not necessarily move up to grade-level reading proficiency, many students made substantial gains between their initial and final SRI scores, greatly shifting the distribution of SRI scores upward. For example, 37 percent of students scored between 1 and 9 NCEs on the initial SRI, as compared to 28 percent on the final SRI (Exhibit F).

Exhibit F
Distribution of Scores—Initial and Final SRI,
READ 180 Students with Both Scores
 (n=354)
 (Initial SRI administered on 10/15/04; Final SRI administered on 4/4/04)

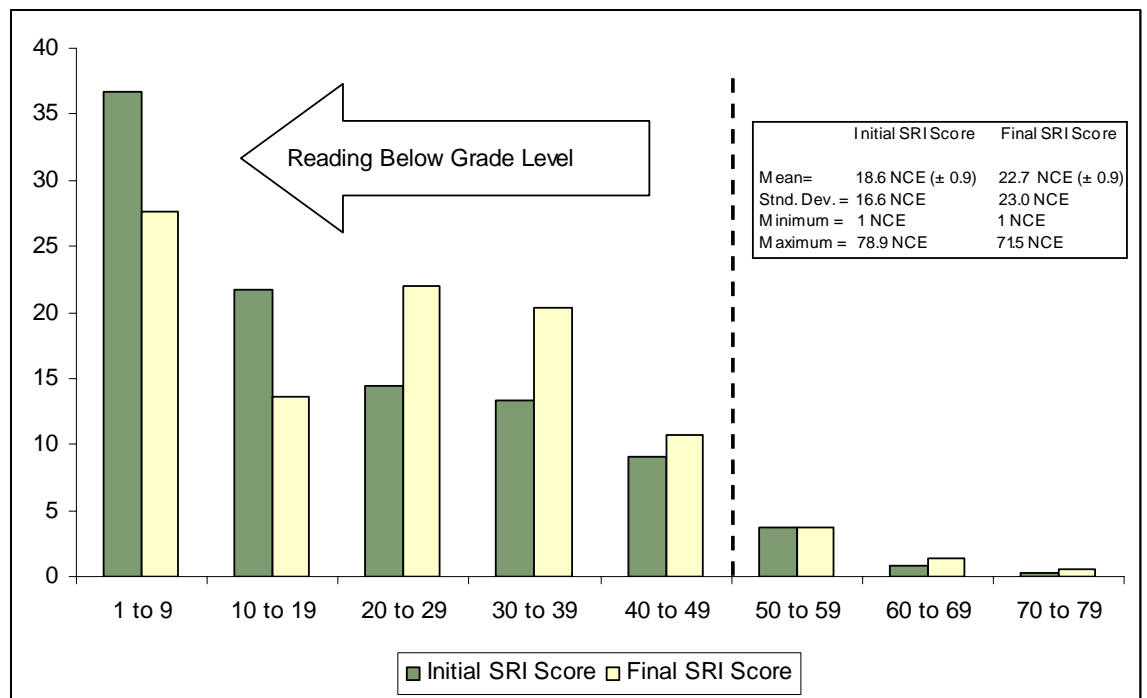


Exhibit reads: Thirty-seven percent of READ 180 students with both initial and final SRI scores scored between 1 and 9 NCEs on their initial SRI, as compared to 28 percent on their final SRI.

- READ 180 participants averaged gains of 4.1 NCEs on the SRI, or almost one year's growth in reading proficiency, after less than a year of participation (Exhibit G).⁵ Thirty-two percent of these participants achieved gains equivalent to two or more school years during the same period and forty-six percent gained the equivalent of one school year or more.

Exhibit G
Growth on the SRI from Initial to Final (in NCEs)
READ 180 Students
 (n=354)

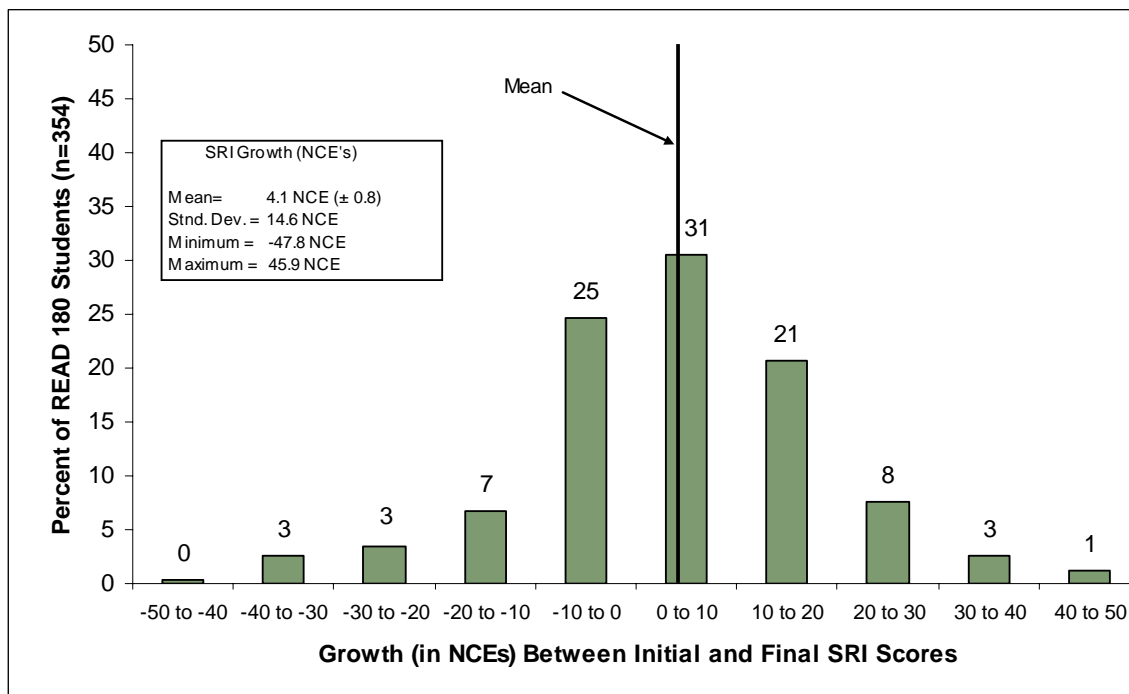


Exhibit reads: Less than 1 percent of the 354 READ 180 students with both initial and final SRI results scored between 50 and 40 points less on the final SRI than on the initial SRI.

⁵ For purposes of estimating years of growth in reading proficiency as measured on the SRI, a gain of 5 NCEs is defined as equivalent to a year of growth throughout this report. This metric is computed by averaging the difference in Lexiles required to remain at 50 NCEs between seventh and eighth grade or eighth and ninth grade, and then converting a change of that magnitude back into NCEs. More specifically, we examined the Lexiles scale score associated with 50 NCEs in, for example, seventh grade, and the Lexile scale score associated with 50 NCEs in eighth grade. We then computed the gain (or difference) in Lexiles needed to score at 50 NCEs in each grade. Next, we added this difference of Lexiles to the number of Lexiles equivalent to 50 NCEs in seventh grade, and calculated the NCE score equivalent to this new sum. At almost every grade level, this new sum corresponds with an NCE Score of about 55 NCEs—or 5 NCEs above the initial score of 50 NCEs. Accordingly, we use a gain of 5 NCEs as an indication of a gain of one school year, 10 NCEs as a gain of two school years, etc.

Concluding Observations and Options for Additional Research

Overall, these findings suggest that participation in READ 180 is associated with notable gains in reading proficiency compared to a matched group of at-risk students, both as measured by the SRI and by the standardized tests administered as part of the state student assessment system. On average, Read 180 participants made bigger gains than a matched comparison group with similar standardized test scores.

The findings from this study also suggest several areas of focus for additional research and analysis to improve our understanding of the relationship between participation in READ 180 and academic performance, including:

- ***A broader range of academic outcomes associated with participation in READ 180.*** In addition to changes in reading proficiency as measured by the SRI and TAKS tests, it would be useful to explore whether there is any relationship with indicators of attachment to school and progress toward high school graduation, including school attendance, suspensions/expulsions, course grades, course credits earned, and grade promotion/retention.
- ***The relationship between the quality of implementation and sustained, student-level interaction with READ 180 and changes in reading proficiency.*** Examining the extent to which varying amounts of gains in student reading proficiency are associated with key features of program implementation (including implementation of the program's complex instructional model and the amount of time a student spends interacting with the READ 180 software) would help identify needs for enhanced implementation and teacher professional development. Unfortunately, the school-level figures for software usage were not subtle enough to allow for analysis of the possible impact on individual student achievement.
- ***The collection and analysis of data for additional years and cohorts of students.*** The comparison of the performance of READ 180 participants and matched nonparticipants on their eighth- and ninth-grade TAKS tests and other areas of academic performance would yield additional information on the persistence of the relationship between participation in READ 180 and academic performance. Additional data covering the new cohort of 2005-06 READ 180 participants would also illuminate possible new areas of study, particularly if they are substantially different in their demographic composition and academic background.