



**STUDY OF THE PERFORMANCE OF READ 180
PARTICIPANTS IN THE PHOENIX UNION
HIGH SCHOOL DISTRICT – 2003-04**

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Executive Summary

In fall 2003, the Phoenix (Arizona) Union High School District (PUHSD) began using Stage C of Scholastic's READ 180 to help struggling ninth- and tenth- graders become proficient readers and increase their opportunities for success in school. All ninth-graders reading below a grade equivalent of 8.0 (i.e., at a level equivalent to the average student nationwide entering eighth grade) are eligible to participate in READ 180 for the entire school year. Tenth-graders reading below a grade equivalent of 9.0 are eligible to enroll in the program for either the fall or spring semester. This report presents the results of a study of the changes in reading proficiency achieved by READ 180 participants during the 2003-04 school year.

Consistent with the purpose of the READ 180 program, the students selected to participate in READ 180 were performing below grade level on measures of reading proficiency. Specifically, 99 percent of ninth-grade participants had scored below a grade equivalent of 8.0, indicating the reading proficiency expected of a student entering eighth grade on the Stanford 9 (SAT9) Reading Comprehension subtest administered in the spring of 2003, the end of their eighth-grade year. Among tenth-graders, 96 percent selected to participate in the fall of 2003 scored below 50 normal curve equivalents (NCE) on their initial Scholastic Reading Inventory (SRI) test, administered at the start of their participation in READ 180. Ninety percent of the tenth-graders selected to participate in the spring of 2004 scored below this threshold.

After completing READ 180, participants averaged substantial gains in their performance on the SRI and SAT9 assessments of reading proficiency. Ninth-grade participants averaged a gain of 14 NCEs (± 1 NCE) on the SRI exam between August 2003 and May 2004. More than half (57 percent) of ninth-grade participants achieved two or more years of growth in reading ability and 34 percent achieved four-years' growth or more.¹

Among tenth-graders in the fall cohort of participants, the average change in reading proficiency was a gain of 5 NCEs (± 1 NCE), suggesting that the average student achieved a year of growth in one semester of participation in READ 180. Thirty-seven percent achieved a gain equivalent to two or more years' growth. Students in the spring cohort averaged a gain of 10 NCEs (± 1 NCE), and nearly half (49 percent) achieved an equivalent of two years' growth or more.

Scores on the SAT9 Reading Comprehension subtest administered in the spring of 2003, at the end of eighth grade, and the spring of 2004, at the end of

¹ A gain of 5 NCEs was defined as the equivalent of a year of growth on the SRI exam. This threshold was computed by averaging the difference in Lexiles required to remain at 50 NCE between eighth and ninth grade, then converting a change of that magnitude back into NCEs.

ninth grade, were available for both ninth-grade READ 180 participants and nonparticipants. The change in reading proficiency of READ 180 participants were compared with a matched sample of nonparticipants. The matching procedure identified a group of nonparticipants with similar scores on the 2003 SAT9 Reading Comprehension Test.

Overall, both READ 180 participants and nonparticipants averaged lower levels of performance on the 2004 SAT9 Reading Comprehension test than they had on the 2003 SAT9. Participants achieved smaller decreases on the test than nonparticipants. READ 180 participants averaged a decrease of 0.5 NCE (± 0.03 NCE), while nonparticipants averaged a decrease of 2.1 NCEs (± 0.03 NCE). The difference was statistically significant.

READ 180 participants averaged a substantive gain in reading proficiency. The analyses conducted for this study found that there was no particular subgroup of students who appeared to benefit more from participation in the program more than other subgroups. There were only small differences in gains on the SRI exam across subgroups, and none of the differences were statistically significant.

Ninth-grade READ 180 participants with higher scores on the 2003 SAT9 Reading Comprehension Test averaged larger gains on the SRI assessment between August 2003 and May 2004 than did students with lower SAT9 scores. The difference in gains on the SRI was not statistically significant.

- Students who scored below 30 NCEs on the 2003 SAT9 Reading Comprehension test averaged a gain of 12.1 NCEs (± 1.0 NCE) on the SRI reading assessment between August 2003 and May 2004.
- Students who scored between 30 and 35 NCEs on the 2003 SAT9 averaged a gain of 12.7 NCEs (± 1.1 NCE) on the SRI.
- Students who scored above 35 NCEs on the 2003 SAT9 averaged an increase of 15.2 NCEs (± 1.1 NCE) on the SRI.

There was no significant difference in gains on the SRI between students classified as English Language Learners (ELL) and students who were not classified as ELL.

There was no significant difference in gains on the SRI between students who were eligible for special education services and students who were not eligible.

Introduction

In fall 2003, the Phoenix (Arizona) Union High School District (PUHSD) began using Stage C of Scholastic's READ 180 to help struggling readers in the ninth and tenth grades become proficient readers and increase their opportunities to be successful in school. All ninth-graders who read below a grade equivalent of 8.0 (i.e., at a level equivalent to the average student nationwide entering eighth grade) were eligible to participate in the program for the entire school year. Tenth-grade students who read below a grade equivalent of 9.0 were eligible to enroll in the program for either the fall or spring semester.

At the conclusion of the 2003-04 school year, and in partnership with the PUHSD, Scholastic asked Policy Studies Associates (PSA) to review data on student outcomes in READ 180. This report presents PSA's findings.

The analysis of the data from the PUHSD READ 180 program was designed to answer five specific research questions. These were:

- What was the initial reading ability of students participating in READ 180?
- What gains in reading ability were achieved by participants as measured by the Scholastic Reading Inventory (SRI) test?
 - Among ninth- graders participating for a full year?
 - Among tenth-graders participating for a semester?
- How did students participating in READ 180 perform on the SAT9 measure of reading comprehension compared with similar students who do not participate?
- What category of students benefited most from participating in READ 180?
- How did English Language Learner (ELL) students participating in READ 180 perform on the IDEAP Proficiency Test (IPT) compared with similar students who do not participate?

Information Sources

Data for this study came from several sources. Information on student participation in READ 180 was drawn largely from the Scholastic Management Suite. This file provided a list of the ninth- and tenth-graders who participated in READ 180 in 2003-04. It also contained records of student performance on the SRI, an assessment of reading proficiency. Teachers used SRI results to track the performance of individual students, to select appropriate reading materials for

each student, and to guide student instruction. The typical student completed this assessment up to five times during a school year.

The Reading Comprehension Test from the SAT9 was another measure of student reading ability that was available for this study. This test was administered to all PUHSD eighth-graders in the spring of 2003, and then again to these same students in the spring of 2004 when they were ninth-graders.

Results from the IPT were available for ninth-graders receiving ELL services during the 2003-04 school year. The IPT assessed student proficiency in writing, reading, and speaking English.

Finally, information from the PUHSD student-level database identified students receiving ELL and special education services during the 2003-04 school year.

What Is READ 180?

READ 180 is an intensive intervention for students who read below grade level. It uses direct instruction in reading, engaging and age-appropriate content, and data-driven technology to ensure differentiated instruction and guided practice. READ 180 teachers base instructional planning and decision making on the results of diagnostic and curriculum-embedded assessments, as well as on periodic evaluations of student progress and mastery.

Among the elements that characterize READ 180 classrooms are:

- Daily 90-minute class periods
- Class size of 15-18 students
- READ 180 software that provides students with daily, intensive, individualized skills practice
- Modeled or independent reading practice
- Individual or small-group instruction
- Whole-group instruction in word analysis, vocabulary development, reading comprehension, and writing
- Classroom areas designated for using computers, reading and listening to READ 180 audio-books, and working with the teacher individually or in small groups

In a typical READ 180 class, the teacher provides 20 minutes of whole-class instruction. Then students split into three groups, with each group rotating through three 20-minute sessions of small-group work with the teacher, individual work at computer stations, and independent reading. Instruction ends with a 10-minute wrap-up during which students reflect on their performance that day.

Who Participated in READ 180?

Characteristics of Ninth Grade Participants

Results of the spring 2003 SAT9 Reading Comprehension Test indicated that eighth-graders who were selected to participate in READ 180 in ninth grade read at levels far below those of a nationally representative sample of eighth-graders. In addition, consistent with PUHSD’s purpose in implementing READ 180, these students scored lower than did students who were not selected to participate. Ninety-nine percent of participants scored a grade equivalent of 8.0 or lower, compared with 56 percent of nonparticipants (Exhibit 1).

Exhibit 1
Grade-Equivalent Performance of PUHSD Eighth-Graders
On the Spring 2003 SAT9 Reading Comprehension Test

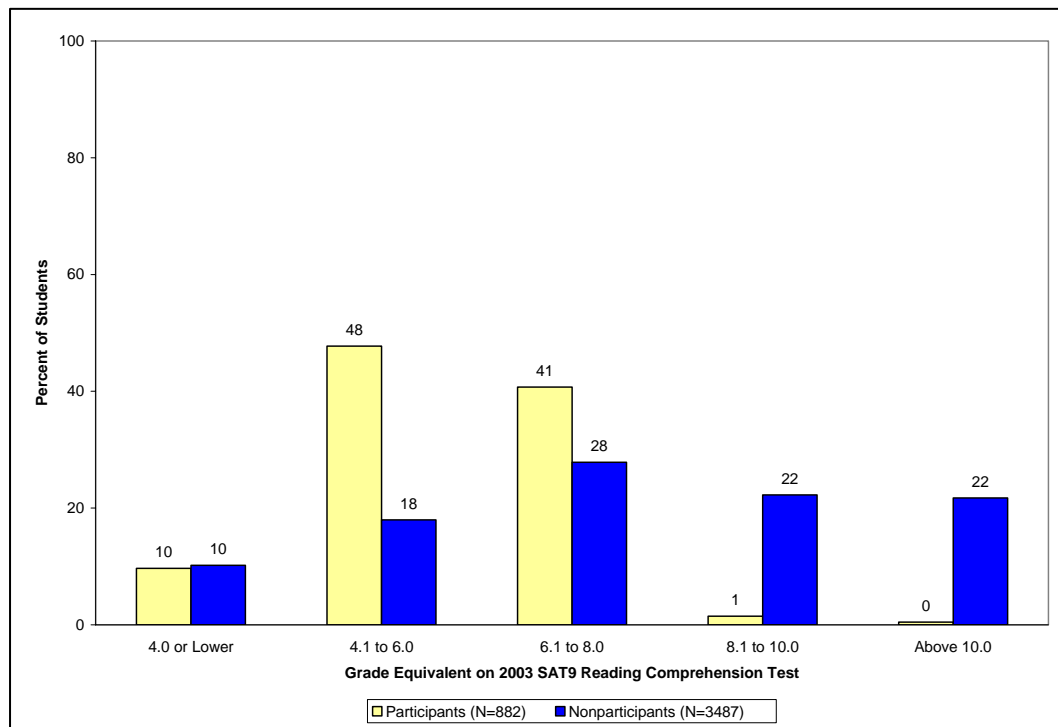


Exhibit reads: Ten percent of READ 180 participants scored a grade equivalent of 4.0 or lower on the spring 2003 SAT9 Reading Comprehension Test when in eighth grade.

On average, students selected to participate in READ 180 in ninth grade scored 31.9 NCEs (± 0.3 NCE)² on the SAT9 Reading Comprehension Test in the spring of their eighth-grade year (Exhibit 2). In comparison, students not selected to participate in READ 180 averaged 44.3 NCEs (± 0.3 NCE).

Exhibit 2
Eighth-Grade Performance
On the Spring 2003 SAT9 Reading Comprehension Test,
READ 180 Participants vs. Nonparticipants

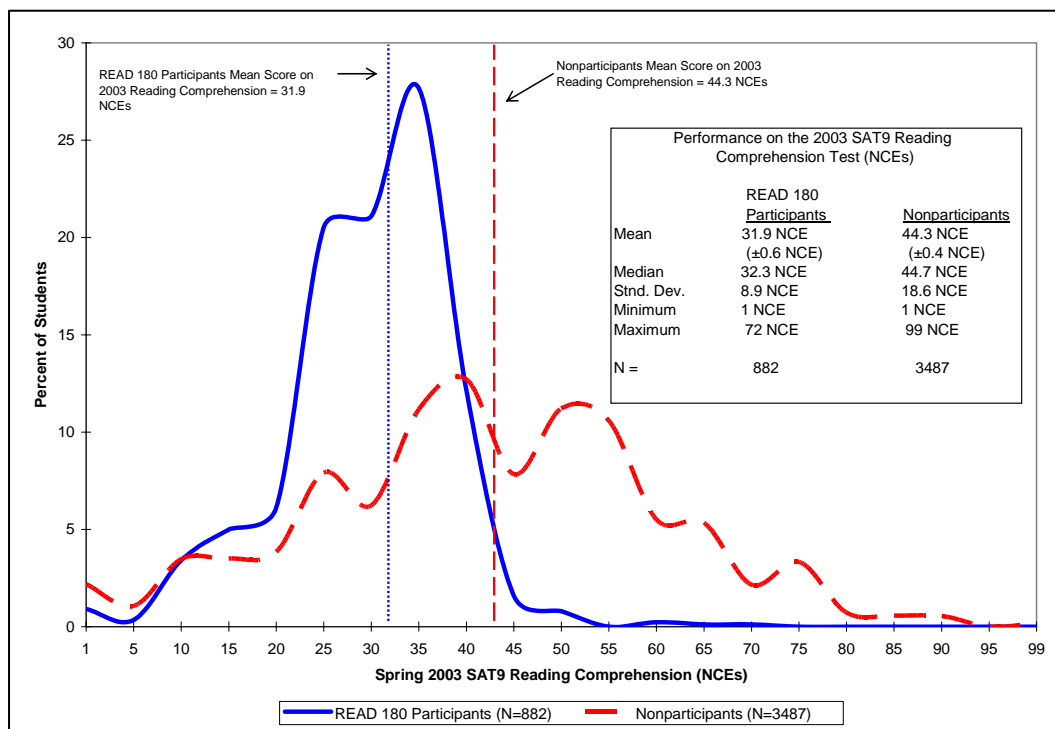


Exhibit reads: Ninth-graders who participated in READ 180 scored from 1 NCE to 72 NCEs, with a mean of 31.9 NCEs (± 0.3 NCE) on their eighth-grade SAT9 Reading Comprehension Test.

A score of 50 NCEs is considered to be performing at grade level. Ninety-nine percent of READ 180 participants scored below 50 NCEs on their eighth-grade SAT9, compared to 58 percent of nonparticipants.

Nearly half of both participants and nonparticipants were classified as ELL students (Exhibit 3). Less than 10 percent of students in each group were reported to be eligible for special education services.

² Throughout this study, scores are reported in normal curve equivalents (NCEs). An NCE score is a standardized score (based on the normal distribution) that allows the computation of summary statistics of group performance, such as an average score. A more detailed explanation of NCE scores appears in Appendix A.

Exhibit 3
Proportion of READ 180 Ninth-Graders Eligible
For ELL and Special Education Services in 2003-04

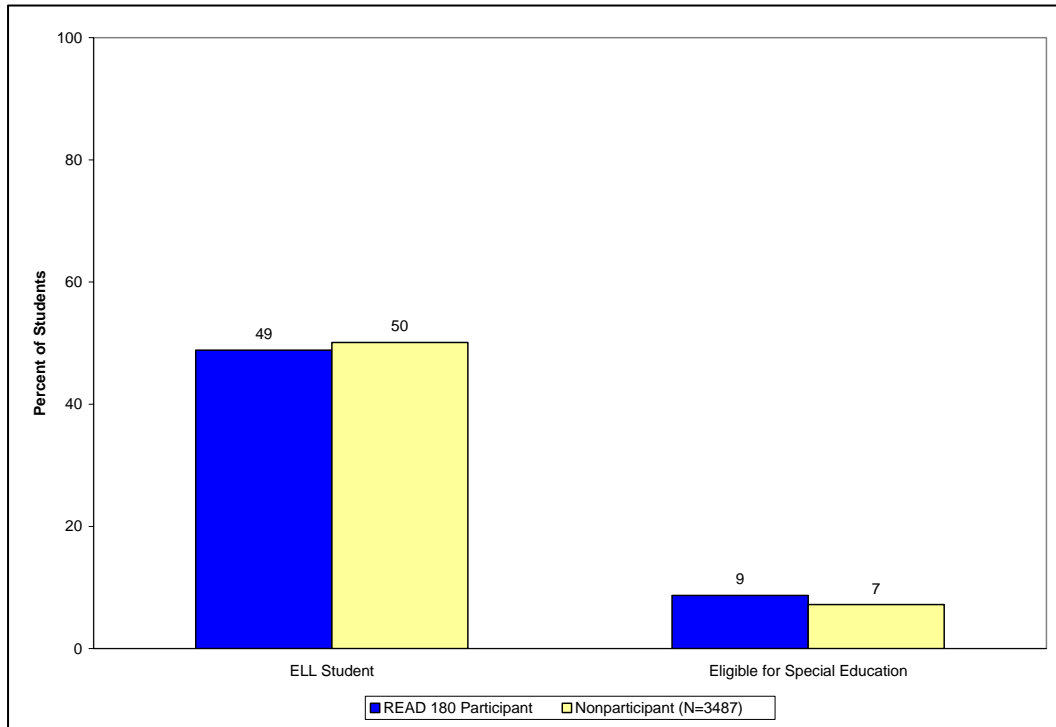


Exhibit reads: Forty-nine percent of ninth-graders participating in READ 180 were classified as ELL students, compared with 50 percent of nonparticipants.

A second measure of students' prior reading proficiency was available only for the ninth-graders participating in READ 180. This was their initial performance on the SRI, administered in August 2003.³

Initial SRI scores of ninth-grade READ 180 participants ranged from a low of 1 NCE to a high of 72 NCEs. The mean SRI score was 21 NCEs (± 1 NCE) and the median score was 22 NCEs. Ninety-six percent of ninth-grade READ 180 participants scored below 50 NCEs on the SRI (Exhibit 4). Forty-six percent scored below 20 NCEs. Twenty-five percent of ninth-graders participating in READ 180 scored 1 NCE, the equivalent of the first percentile, indicating that their reading proficiency was lower than 99 percent of ninth-graders nationwide.

³ Included in these analyses:

- Ninth-graders who completed their first SRI assessment in August 2003 and their last assessment in May 2004
- Fall cohort tenth-graders who completed their first SRI in August 2003 and their last in December 2003 or January 2004
- Spring cohort tenth-graders who took their first SRI during December 2003 or January 2004, and their last SRI during May 2004

Exhibit 4 Initial Scores on the SRI Exam, Ninth Grade Participants

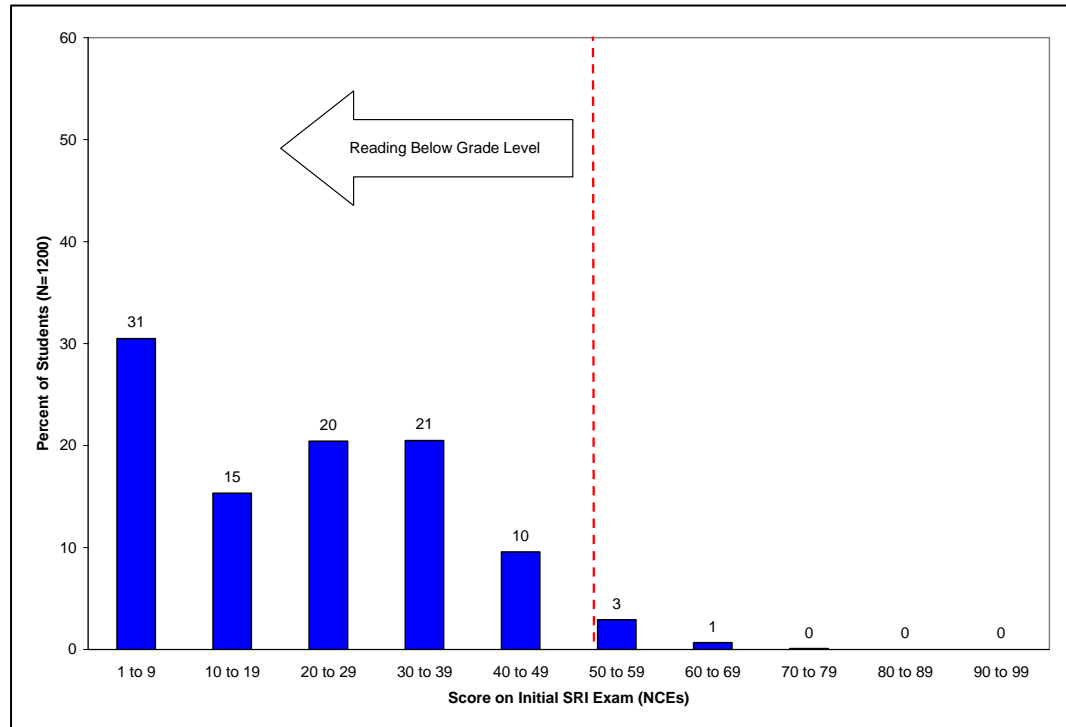


Exhibit reads: Thirty-one percent of ninth-grade READ 180 participants scored between 1 and 9 NCEs on their initial SRI exam.

The publishers of SRI have established Scholastic Performance Standards for students at each grade level. Ninth-graders with SRI scores of 13 NCEs or below are categorized as “At-Risk” or considerably below grade level. Those with scores between 14 and 45 NCEs are categorized as “Basic” or below grade level. Students scoring between 46 and 66 NCEs are placed in the “Proficient” category, meaning that they read at or above grade level. Finally, those reading above 66 NCEs are categorized as “Advanced” and as reading above grade level. Exhibit 5 shows the distribution of PUHSD ninth-graders enrolled in READ 180 during the 2003-04 school year.

Characteristics of Tenth-Grade Participants

The initial reading proficiency of tenth-graders selected to participate in READ 180 was similar to that of ninth-graders. However, the average initial reading level of fall semester READ 180 participants differed from that of spring participants.

Exhibit 5
Distribution of Ninth-Grade READ 180 Participants’
Initial SRI Scores, by Scholastic Performance Standards

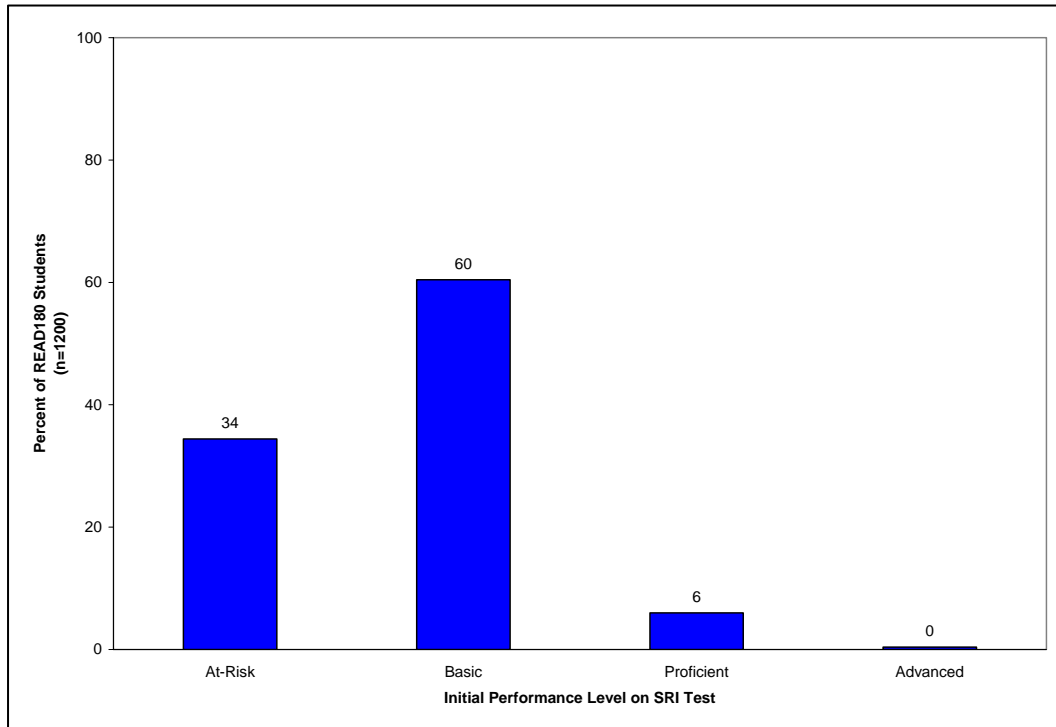


Exhibit reads: Thirty-four percent of ninth-grade READ 180 participants had initial SRI scores that placed them in the “At-Risk” category.

Students in the fall cohort scored from a low of 1 NCE to a high of 73 NCEs on the initial SRI exam. The mean score was 22 NCEs (± 1.6 NCEs) and the median score was 24 NCEs. Ninety-six percent scored below 50 NCEs (Exhibit 6). Forty-four percent scored below 20 NCEs. Twenty-three percent of the tenth-graders participating in READ 180 in the fall cohort scored 1 NCE, the equivalent of the first percentile, indicating a reading proficiency lower than 99 percent of tenth-graders nationwide.

The distribution of initial reading proficiency scores among students in the spring cohort was slightly higher than that in the fall cohort. These scores ranged from a low of 1 NCE to a high of 87 NCEs. The mean SRI score was 27 NCEs (± 2 NCE) and the median score was 28 NCEs. Ninety percent scored below 50 NCEs (Exhibit 6). Thirty-seven percent scored below 20 NCEs. Fourteen percent of the spring cohort scored 1 NCE, the equivalent of the first percentile.

On the Scholastic Performance Standards, 33 percent of tenth-graders in the fall cohort scored in the “At-Risk” category, compared with 22 percent of those in the spring cohort (Exhibit 7). Fifty-five percent of those in the fall cohort scored in the “Basic” category, as did 64 percent of those in the spring cohort.

Exhibit 6
Initial Scores on the SRI Exam,
Tenth-Grade Participants, by Cohort

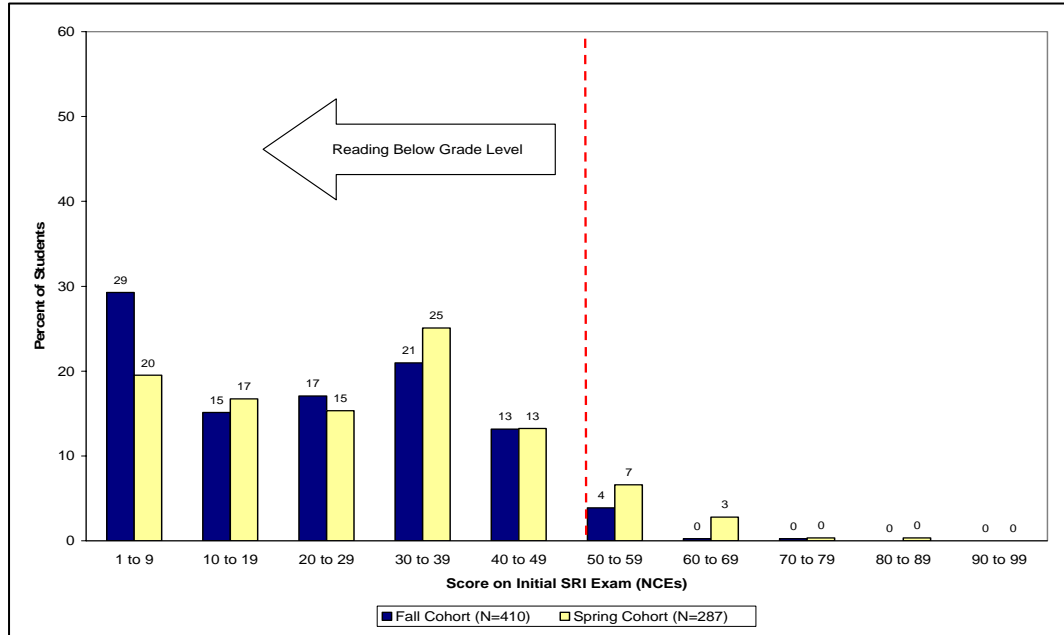


Exhibit reads: Twenty-nine percent of tenth-grade READ 180 participants in the fall cohort scored between 1 and 9 NCEs on their initial SRI exam, compared with 20 percent of participants in the spring cohort.

Exhibit 7
Distribution of Tenth-Grade READ 180 Participants' Initial SRI
Scores, by Scholastic Performance Standards and by Cohort

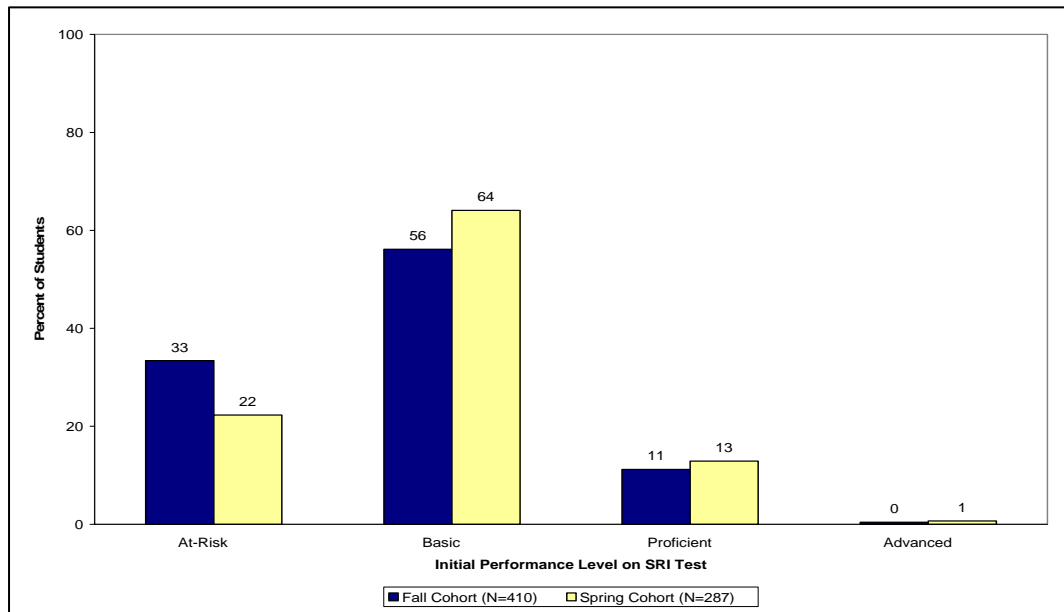


Exhibit reads: Thirty-three percent of tenth-graders in the fall cohort scored in the "At-Risk" category.

Change in Reading Proficiency after Participating in READ 180

More information about ninth-graders was available for this study than about tenth-graders. Two measures of ninth-graders' reading proficiency were available – the SRI test administered to READ 180 participants as part of the program and the SAT9 Reading Comprehension Test, which was administered to all ninth-graders. Both ELL students and students who were eligible for special education services were identified among ninth-grade READ 180 participants and nonparticipants. There was also participant and nonparticipant information about the performance of ELL students on the IPT.

Information about READ 180 tenth-graders was limited to their performance on the SRI tests administered at the beginning and end of their participation in the program.

Change in Ninth-Grade Participants' Scores on the SRI Exam

Overall, ninth-grade READ 180 participants improved their performance on the SRI exam between their first test in August 2003 and their last test in May 2004 (Exhibit 8). The proportion of students scoring below 50 NCEs (below grade level) decreased from 96 percent to 81 percent, and the proportion scoring below 20 NCEs decreased from 46 percent to 19 percent.

The average SRI score increased from 21 NCEs (± 1 NCE) to 35 NCEs (± 1 NCE). The difference in the distribution of scores was statistically significant at the $p < 0.01$ level (Paired Samples t-test). The median SRI score increased from 22 NCEs to 36 NCEs.

The proportion of students scoring below 50 NCEs (below grade level) decreased from 96 percent to 81 percent, and the proportion scoring below 20 NCEs decreased from 46 percent to 18 percent.

Exhibit 9 shows the distribution of the change in scores between the first and last administrations of the SRI exam. Scores ranged from a decrease of 37 NCEs to an increase of 68 NCEs, with an average of 14 NCEs (± 1 NCE) and a median of 15 NCEs. The proportion of students achieving an increase in their SRI score (79 percent) was greater than the proportion experiencing a decrease (21 percent). The differences were statistically significant ($p < .01$, Signed Ranks test).

Exhibit 8 Distribution of Scores—First and Last SRI Exams, Ninth-Grade READ 180 Participants

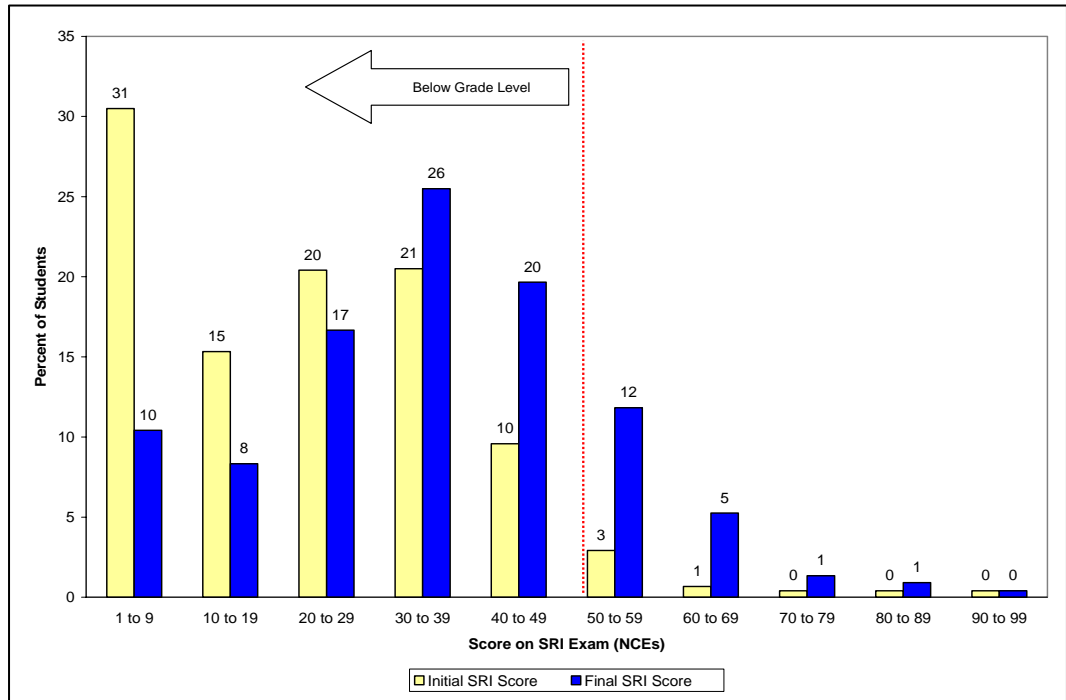


Exhibit reads: The proportion of students scoring between 1 to 9 NCEs decreased from 31 percent to 10 percent between the first and last administrations of the SRI exam.

Exhibit 9 Change in SRI Scores for Ninth-Grade READ 180 Participants (N=1200)

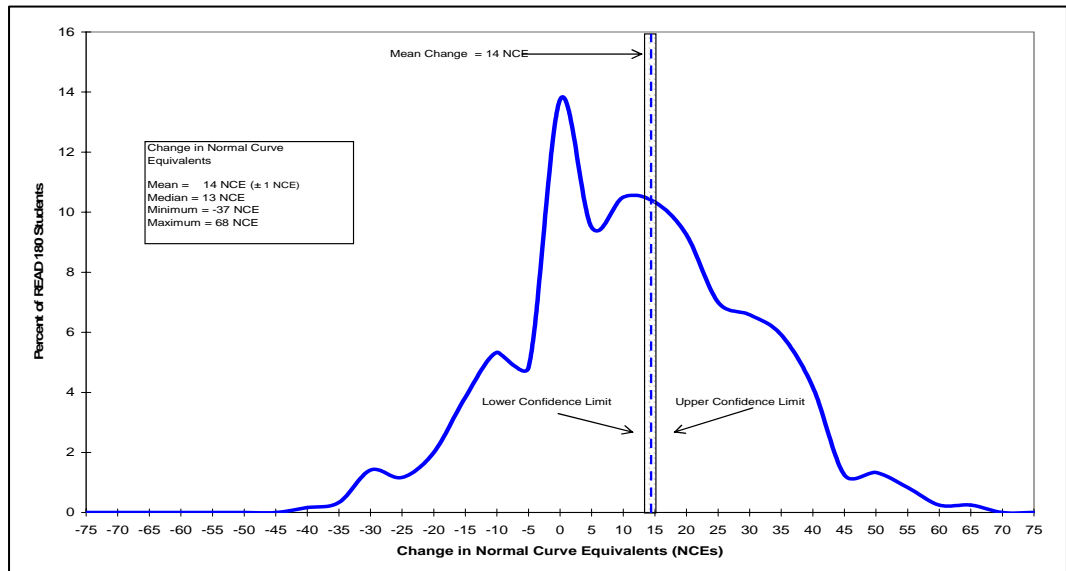


Exhibit reads: Changes in SRI scores achieved by ninth-grade READ 180 participants ranged from -37 NCEs to 68 NCEs, and averaged 14 NCEs (± 1 NCE).

A comparison of the crosswalk between Lexile scale scores and normal curve equivalent scores for each grade level suggests that a change in score on the SRI test of 5 NCEs is the equivalent of a gain of one school year in reading proficiency (See Appendix B). Using this standard, 57 percent of PUHSD ninth-graders who participated in READ 180 made reading gains equivalent to two-years of schooling or more (Exhibit 10).

Exhibit 10
Gains in Reading Proficiency Measured in School Years,
Ninth-Graders Participating in READ 180
 (N=1200)

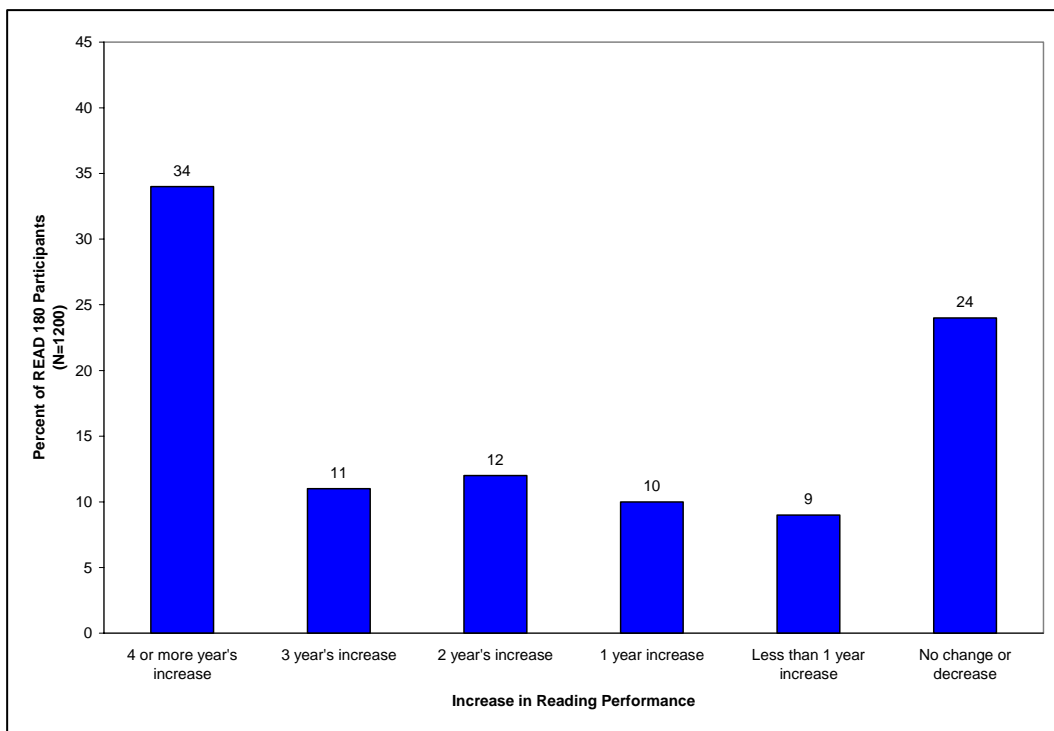


Exhibit reads: Thirty-four percent of ninth-graders achieved a gain in reading proficiency equivalent to four or more years of schooling (21 NCEs or more) after participating in READ 180 for one year, as measured on the SRI.

A larger proportion of students scored at the two highest Scholastic Performance Standards (Proficient or Advanced) on their final SRI test than on their initial SRI test (Exhibit 11). The proportion scoring at the highest level increased from 0 percent to 4 percent. The proportion scoring at the Proficient Performance Standard increased from 6 percent to 22 percent. These differences were statistically significant ($p < .01$, Chi-Square).

Exhibit 11 Change in Scholastic Performance Standards for Ninth-Grade READ180 Participants

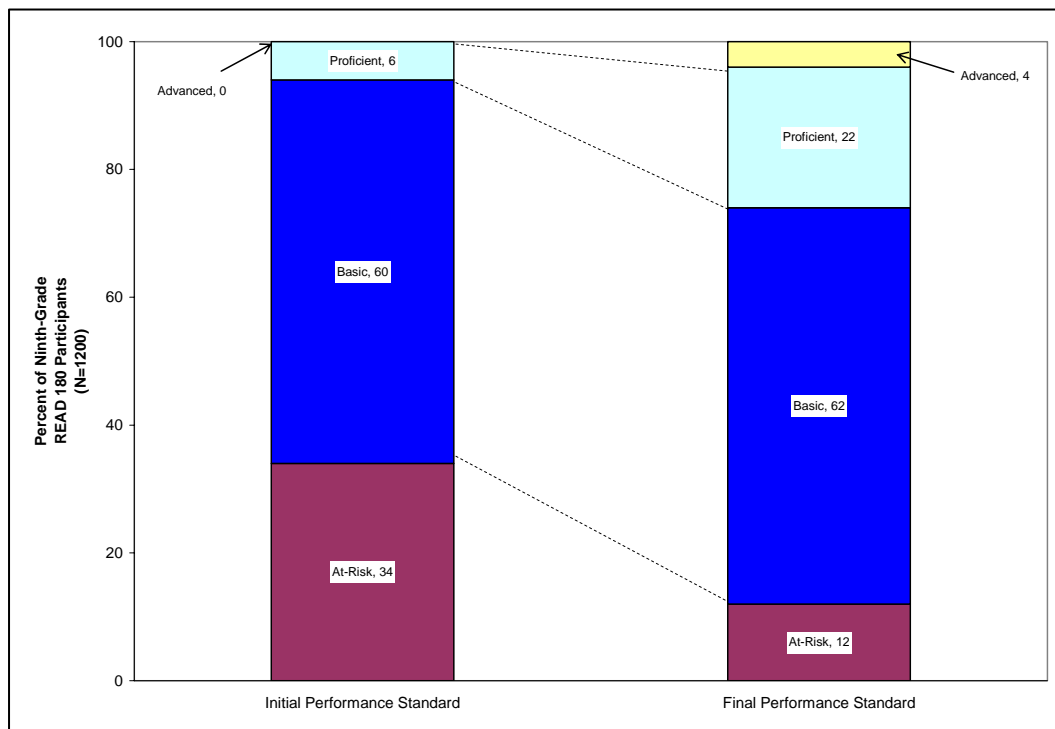


Exhibit reads: No READ 180 participants scored at the “Advanced” performance standard on their initial SRI test.

Change in Scores of Tenth-Grade Participants on the SRI Exam

Fall and spring cohorts of tenth-graders participating in READ 180 showed smaller changes in SRI scores than did ninth-graders. This pattern was consistent with the shorter time that tenth-graders participated in the program compared with ninth-graders (one vs. two semesters). In addition, one of the properties of the Lexile scale⁴ is that it becomes more difficult to achieve a score increase at the higher end of the scale than at the lower end. Since tenth-graders typically score higher than ninth-graders, it is more difficult for them to gain in Lexile score.

Among the fall cohort of READ 180 tenth-graders, 4 percent scored 50 NCEs or higher on their initial SRI exam. This increased to 15 percent on their final SRI exam (Exhibit 12). The mean score increased from 22 NCEs (± 1.6 NCE) to 28 NCEs (± 1.8 NCE), and the median score from 24 NCEs to 28 NCEs. These differences were statistically significant ($p < .01$, Paired Samples t-test).

⁴ The Lexile scale is a measure of how difficult a passage of text is to read and comprehend. Lexile scale scores range from about 200 L, indicating a beginning reading level, to 1700 L, indicating an advanced reading level. For more information, go to: <http://www.lexile.com>.

Exhibit 12
Initial and Final SRI Scores for Tenth-Grade READ 180 Participants,
Fall Cohort (N=410)

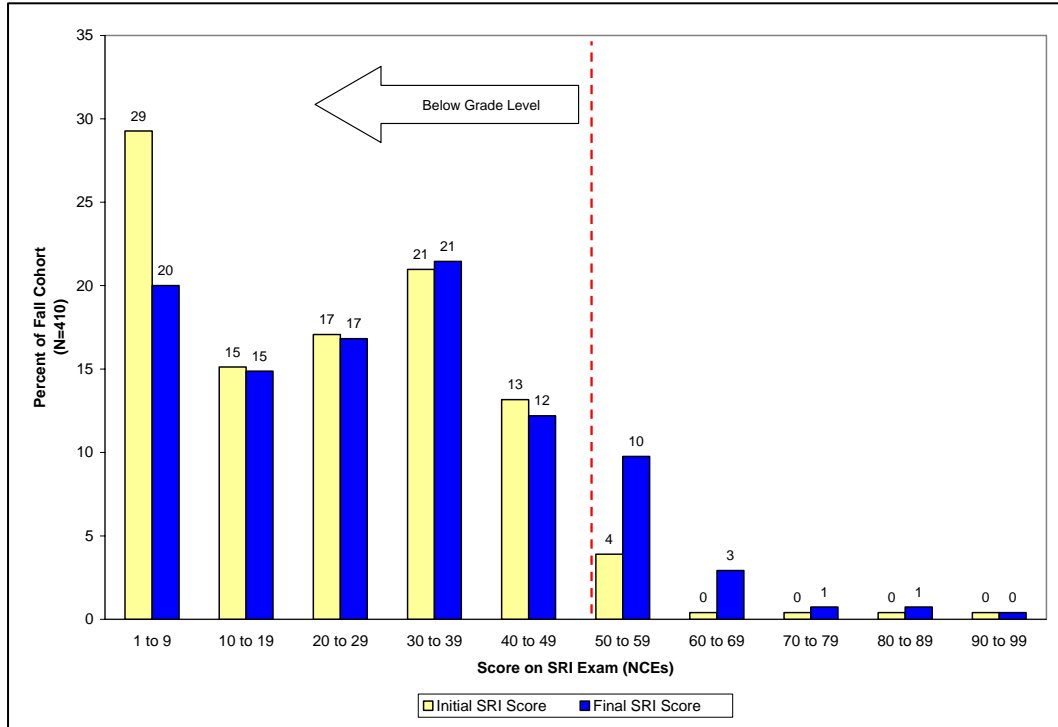


Exhibit reads: Twenty-nine percent of READ 180 participants in the fall cohort scored between 1 to 9 NCEs on their initial SRI exam.

On average, tenth-graders in the spring cohort of READ 180 participants produced higher initial SRI scores and increased their scores more than did students in the fall cohort. The proportion of the spring cohort scoring above 50 NCEs climbed from 10 percent on their initial SRI test to 28 percent on their final test (Exhibit 13). The average score increased from 27 NCEs (± 1.8 NCE) to 38 NCEs (± 2.4 NCE), and the median score increased from 28 NCEs to 38 NCEs. These differences were statistically significant ($p < .01$, Paired Samples t-test).

Exhibit 13
Initial and Final SRI Scores for Tenth-Grade READ 180 Participants,
Spring Cohort (N=287)

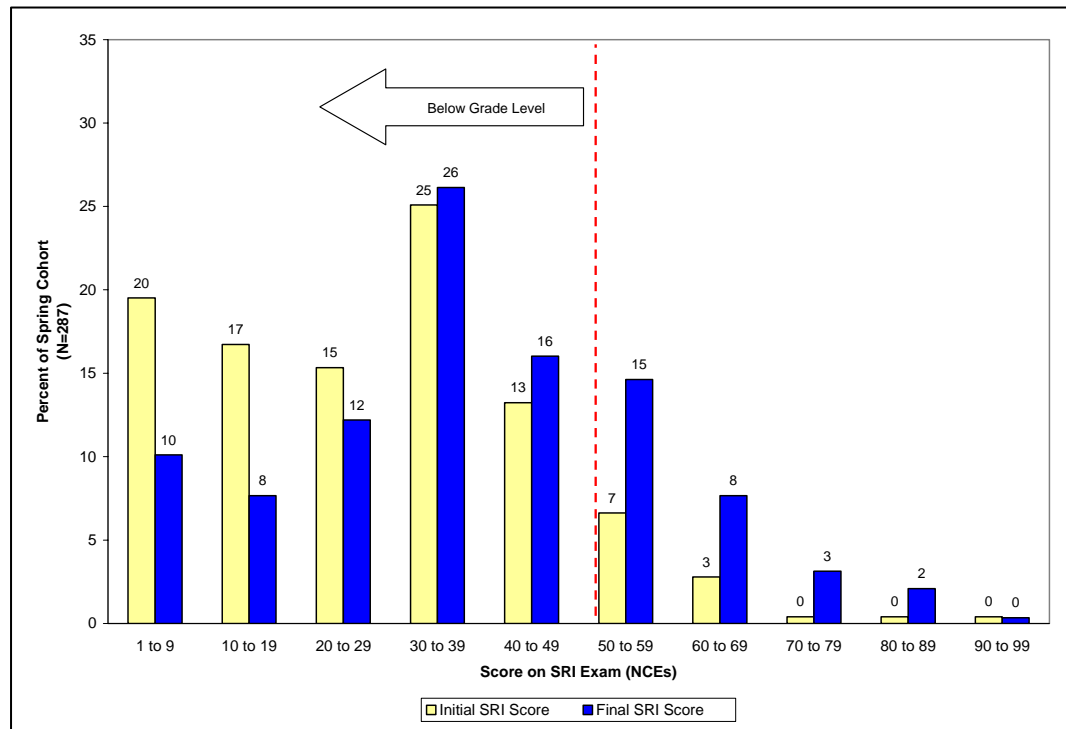


Exhibit reads: Twenty percent of READ 180 participants in the spring cohort scored between 1 to 9 NCEs on their initial SRI exam.

The fall cohort of tenth-graders showed changes in SRI test scores ranging from a decrease of 42 NCEs to an increase of 59 NCEs. The average change was an increase of 5 NCEs (± 1 NCE), while the median increased 4 NCEs. The change in SRI scores among the spring cohort of tenth-graders ranged from a decrease of 38 NCEs to an increase of 61 NCEs, with an average change of 10 NCEs (± 1 NCE) and a median increase of 11 NCEs (Exhibit 14). For both cohorts, the change in performance on the SRI exam was statistically significant ($p < .01$, Paired Samples t-test).

Exhibit 14 Change in SRI Scores for Tenth-Grade READ 180 Participants, By Cohort

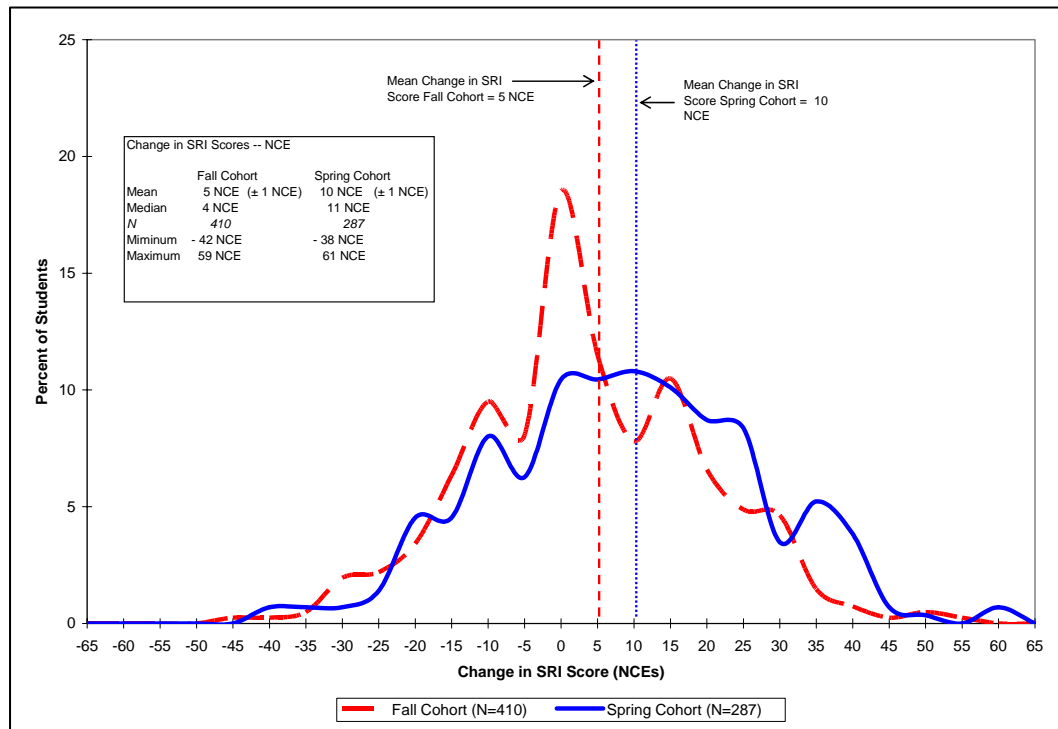


Exhibit reads: Among the fall cohort of tenth-graders, the average change in score on the SRI exam was 5 NCEs.

Using a gain of 5 NCEs on the SRI test to indicate a one-year gain in reading, 37 percent of tenth-graders in the fall cohort achieved gains in reading proficiency equivalent to two years of schooling or more (Exhibit 15). Forty-nine percent in the spring cohort achieved an equivalent gain.

Exhibit 15
Gains in Reading Proficiency Measured in School Years,
Tenth-Graders Participating in READ 180, by Cohort

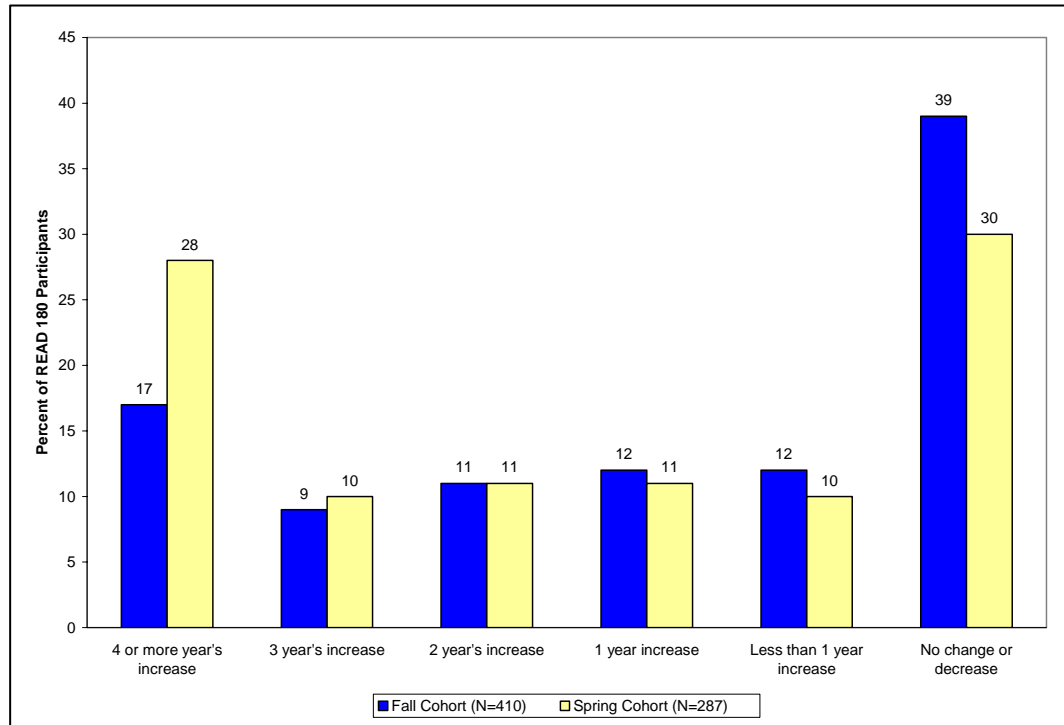


Exhibit reads: Seventeen percent of tenth-graders in the fall cohort achieved a gain in reading proficiency equivalent to four or more years of schooling (21 NCEs or more) after participating in READ 180 for one year, as measured on the SRI, compared with 28 percent of students in the spring cohort.

Consistent with increases in SRI exam scores, a larger proportion of tenth-grade READ 180 participants scored at the “Advanced” or “Proficient” Performance Standards on their final SRI test than on their initial SRI test (Exhibit 16). The difference in the distribution of scores by performance standard was statistically significant ($p < .01$, Chi-Square):

- Among students in the fall cohort:
 - None scored at the “Advanced” Performance Standard on the initial SRI, whereas 2 percent did on the final SRI
 - Eleven percent scored at the “Proficient” Performance Standard on the initial SRI, increasing to 16 percent on the final SRI.

- Among students in the spring cohort:
 - One percent scored at the “Advanced” Performance Standard on the initial SRI, increasing to 6 percent on the final SRI
 - Thirteen percent scored at the “Proficient” Performance Standard on the initial SRI, increasing to 29 percent on the final SRI.

Exhibit 16
Change in Performance Standard for Tenth-Grade READ 180
Participants, By Cohort

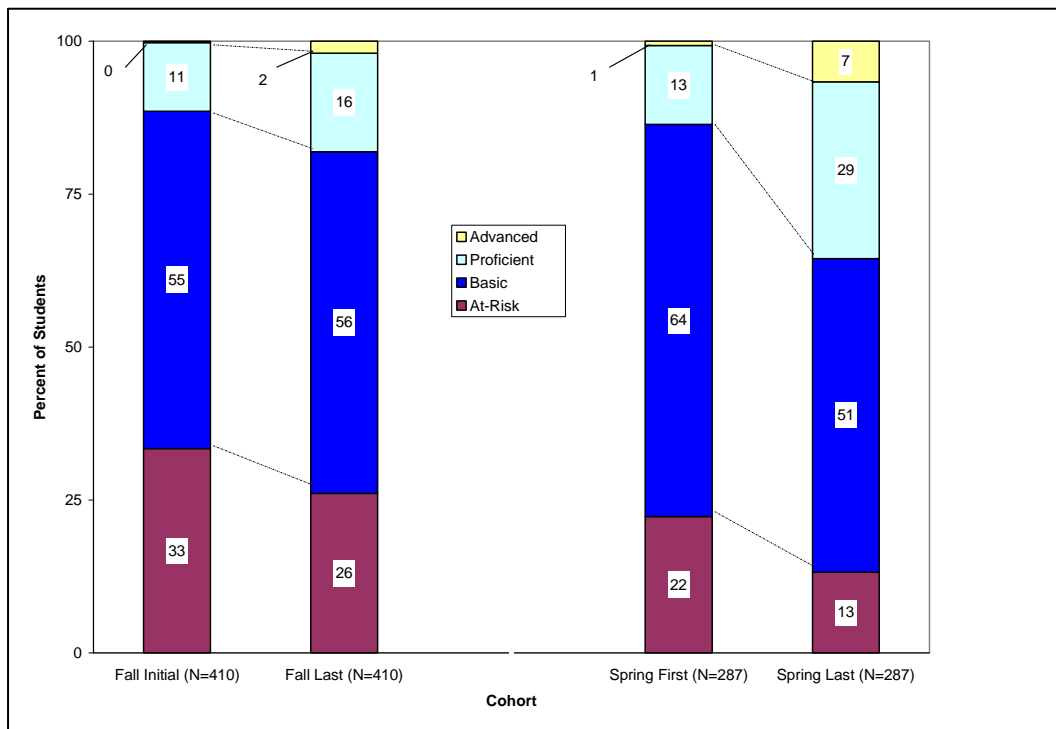


Exhibit reads: No READ 180 participants in the fall cohort of tenth-graders scored at the “Advanced” Performance Standard on their initial SRI test.

Comparing Gains in Reading Proficiency—READ 180 Participants vs. Nonparticipants

PUHSD students complete the SAT9 test at the end of eighth and ninth grades. All ninth-grade students’ scores from the SAT9 Reading Comprehension Test were available for this study, along with scores from the spring 2003 administration of the test while these students were in eighth grade. Because

scores were available for both READ 180 participants and nonparticipants, it was possible to compare changes in reading proficiency achieved by the students in both groups.

The major criterion in selecting ninth-graders READ 180 participants was performance on the 2003 SAT9 Reading Comprehension Test. Participants were selected from students who performed below grade level. Even the attenuated sample of students selected to participate in READ 180 demonstrated considerable variation in reading proficiency. Thirty-six percent of READ 180 participants scored below 30 NCEs on the 2003 SAT9 Reading Comprehension Test, equivalent to the seventeenth percentile of scores from a nationally representative sample of students. Twenty-nine percent scored between 30 and 35 NCEs (equivalent to the eighteenth through twenty-fourth percentiles), and 35 percent scored 36 NCEs (equivalent to the twenty-fifth percentile) and above (Exhibit 17).

Exhibit 17
Distribution of Ninth-Grade READ 180 Participants on the
Spring 2003 SAT9 Reading Comprehension Test
(N=882)

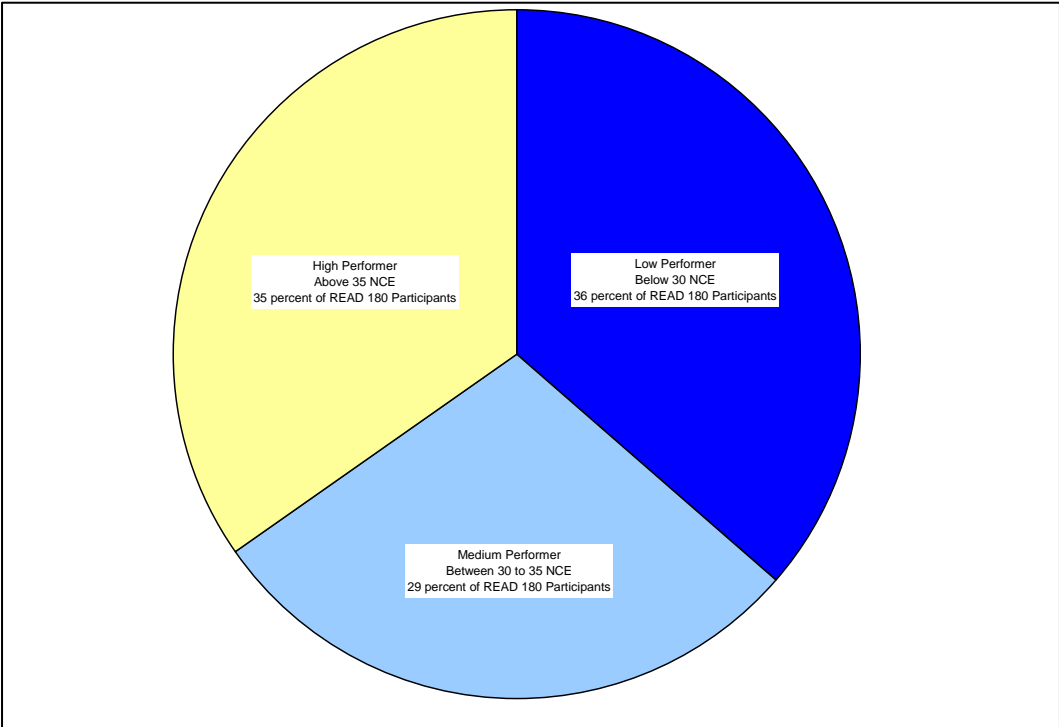


Exhibit reads: Thirty-five percent of ninth-graders in READ 180 were high performers as measured on the 2003 SAT9 Reading Comprehension Test, scoring at 35 NCEs or above.

The distribution of scores on the 2003 SAT9 Reading Comprehension Test for ninth-graders selected to participate in READ 180 was lower than the distribution of scores for PUHSD ninth-graders not selected to participate. READ180 participants scored an average of 32 NCEs (± 0.3 NCE), equivalent to a national percentile rank of 19. Nonparticipants scored an average of 44 NCEs (± 0.3 NCE), equivalent to a national percentile rank of 40 (Exhibit 18). The difference in the distribution of scores between READ 180 participants and nonparticipants was statistically significant ($p < .01$, ANOVA). The effect size was -0.75 .

Exhibit 18
SAT9 Reading Comprehension Scores, Spring 2003,
Ninth-Grade READ180 Participants vs. Nonparticipants

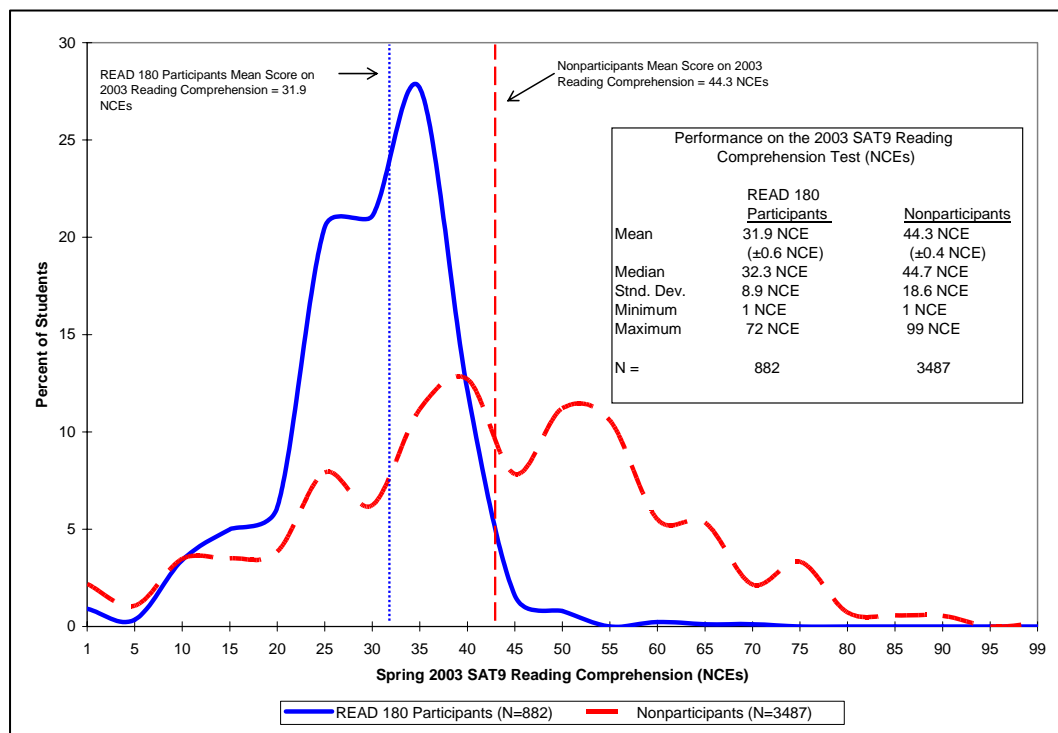


Exhibit reads: Ninth-grade READ 180 participants averaged a score of 31.9 NCEs on the spring 2003 SAT9 Reading Comprehension Test.

A substantially larger proportion of READ 180 participants than nonparticipants scored a grade equivalent of 8.0 or lower on the 2003 SAT9 Reading Comprehension Test (Exhibit 19). Ninety-nine percent of READ 180 students scored a grade equivalent of 8.0 or lower, compared to 56 percent of nonparticipants.

Exhibit 19
SAT9 Reading Comprehension Scored, Spring 2003.
Ninth-Grade READ 180 Participants vs. Nonparticipants
Grade Equivalents

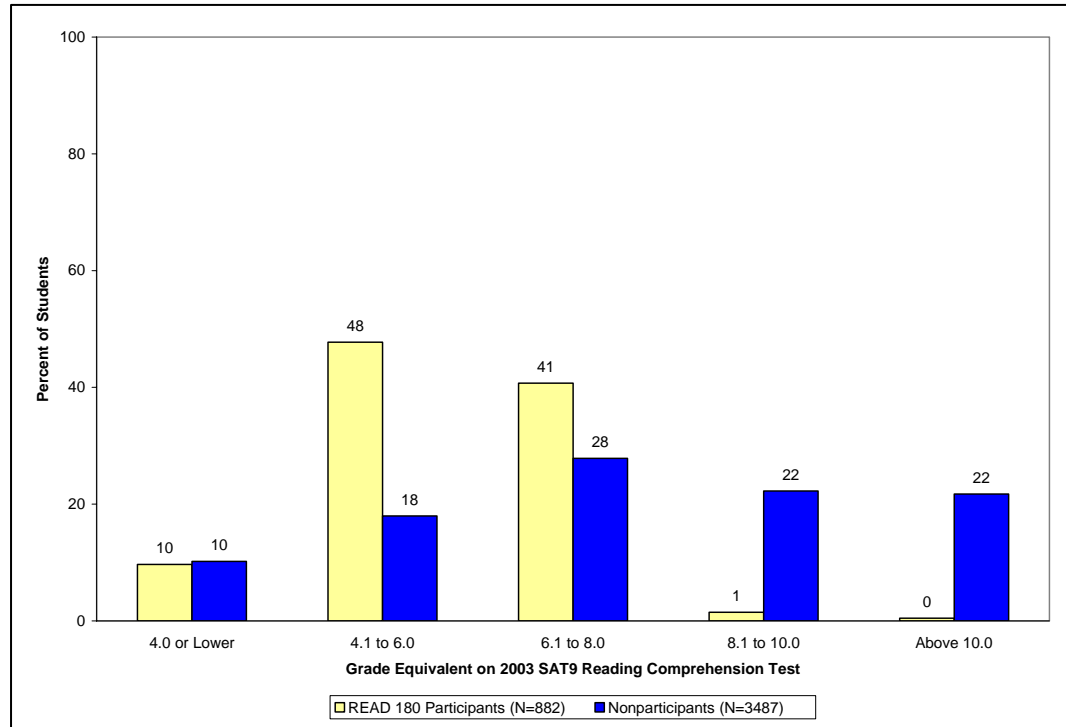


Exhibit reads: Ten percent of READ 180 participants scored a grade equivalent of 4.0 or lower on the spring 2003 SAT9 Reading Comprehension Test.

Identifying a Matched Group of Nonparticipants

Before comparing participating and nonparticipating student gains in reading, a matching procedure limited the comparison to a subset of nonparticipating students who, as a group, performed similarly to READ 180 participants on the 2003 (eighth-grade) SAT9 Reading Comprehension Test. Upon completion of the matching procedure, the distribution of 2003 SAT9 scores for READ 180 participants and nonparticipants was nearly identical (Exhibit 20).

Exhibit 20
SAT9 Reading Comprehension Scores, Spring 2003,
Ninth-Grade READ180 Participants vs. Nonparticipants,
Matched

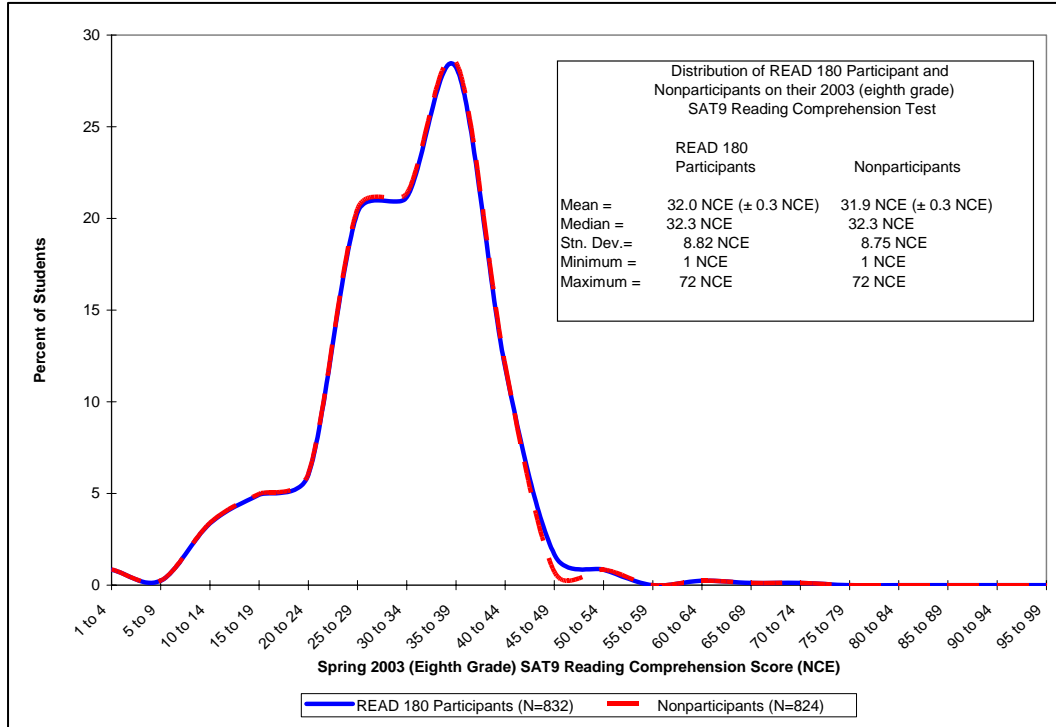


Exhibit reads: After matching, the average 2003 SAT9 score for READ 180 participants was 32.0 NCEs compared with 31.9 NCEs for nonparticipants.

Change in Scores on the SAT9 Reading Comprehension Test

READ 180 participants averaged slightly higher scores on their 2004 SAT9 Reading Comprehension Test than did the matched sample of nonparticipants (Exhibit 21). Their average score was 31.5 NCEs (± 0.3 NCE) while the matched group of nonparticipants averaged 29.7 NCEs (± 0.4 NCE). The difference in scores for the two groups of students was statistically significant ($p < .01$, ANOVA). The effect size was + 0.18.

Exhibit 21
Scores on the 2004 SAT9 Reading Comprehension Test,
READ 180 Participants vs. Nonparticipants,
Matched

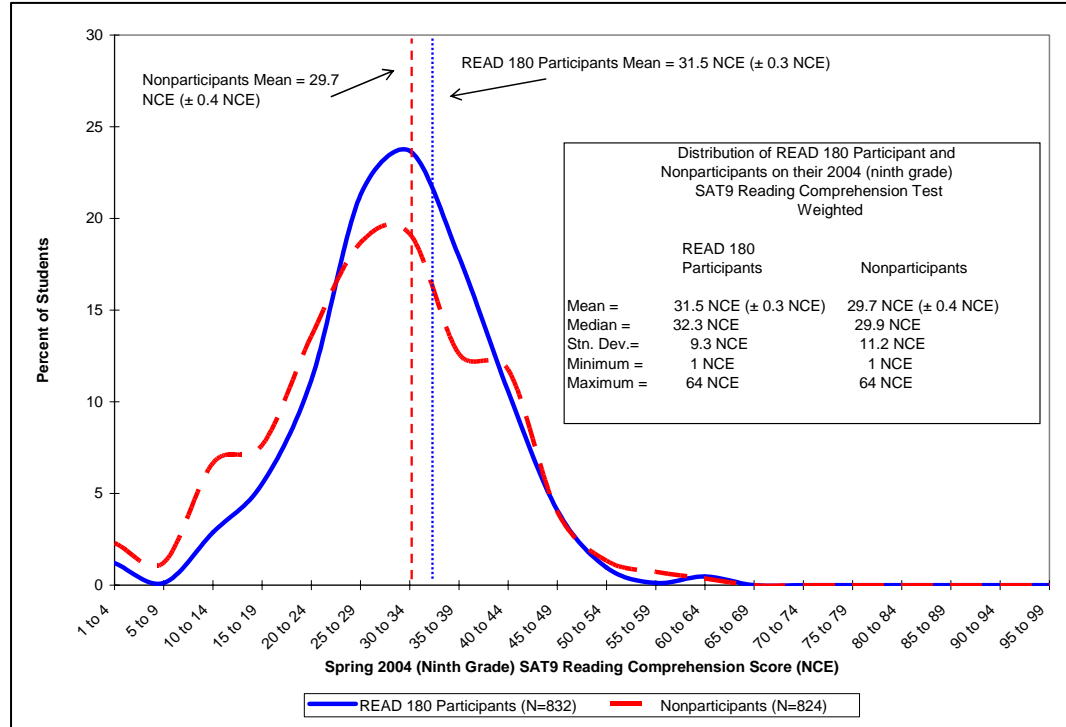


Exhibit reads: READ 180 participants averaged a score of 31.5 NCEs (± 0.3 NCE) on their 2004 (ninth grade) SAT9 Reading Comprehension Test.

A comparison of student scores on the 2003 and 2004 SAT9 Reading Comprehension Test showed that READ 180 participants averaged a smaller decrease in scores than did nonparticipants (Exhibit 22). On the spring 2003 test administered at the end of their eighth-grade year, these students averaged a score of 32.0 NCEs (± 0.3 NCE) and on the spring 2004 test they averaged a score of 31.5 NCEs (± 0.3 NCE). Nonparticipants averaged a score of 31.9 NCEs (± 0.3 NCE) on the spring 2003 test and 29.7 NCEs (± 0.4 NCE) on the spring 2004 test. The difference between the two groups of students was statistically significant ($p < .01$) with an effect size of + 0.17.

Exhibit 22
Average Scores of READ 180 Participants and Nonparticipants
2003 and 2004 SAT9 Reading Comprehension Test (Matched)

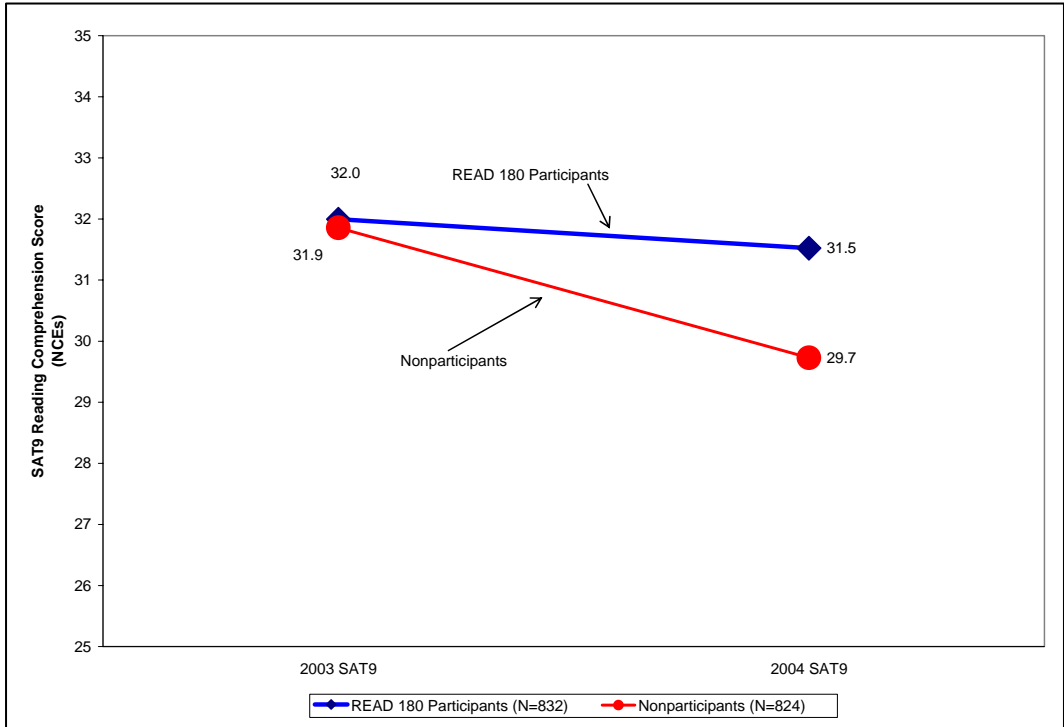


Exhibit reads: READ 180 participants averaged a score of 32.0 NCEs (± 0.3 NCE) on the spring 2003 SAT9 Reading Comprehension Test and 31.5 NCEs (± 0.3 NCE) on the spring 2004 test.

The full distribution of the change in students' scores on the 2003 and 2004 SAT9 Reading Comprehension Tests appears in Exhibit 23. Changes in the scores of individual READ 180 students ranged from a decrease of 42 NCEs to an increase of 35 NCEs. The median change was a decrease of 0.7 NCE. The change in scores among nonparticipants ranged from a decrease of 49 NCEs to an increase of 42 NCEs. The median change was a decrease of 1.9 NCEs.

Change in SRI Scores by Subgroup of READ 180 Participants

Analyses were conducted for subgroups of READ 180 ninth-grade participants identified according to their level of performance on the 2003 SAT9, their ELL status, and their eligibility for special education services.

Exhibit 23 Change in Scores on the SAT9 Reading Comprehension Test, Participants vs. Nonparticipants, Matched

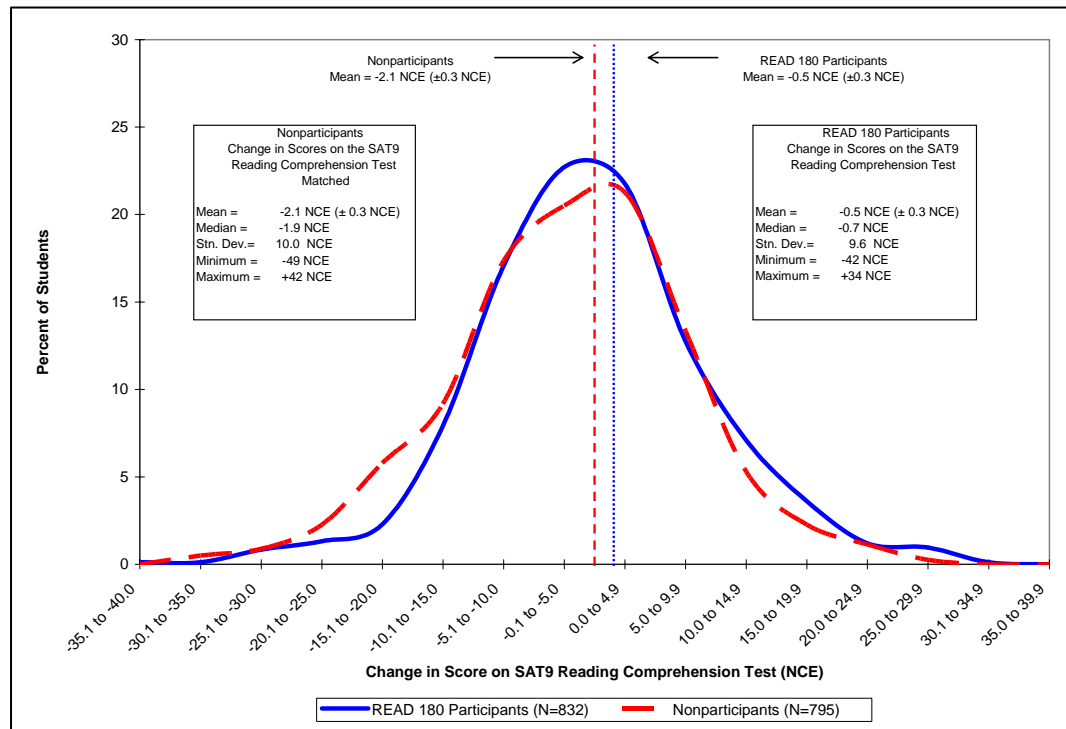


Exhibit reads: READ 180 participants averaged a decrease of 0.5 NCE while a matched group of nonparticipants averaged a decrease of 2.1 NCEs.

Prior Level of Performance

Ninth-grade READ 180 participants were divided into three groups according to their performance on the eighth-grade SAT9 Reading Comprehension Test.⁵ Three levels of prior performance were defined:

- Low – Below 30 NCEs (36 percent of READ 180 participants)
- Medium – Between 30 and 35 NCEs (29 percent)
- High – Above 35 NCEs (35 percent)

The average change in SRI scores was approximately the same across the three levels of prior performance. Students in the low prior performance group averaged a gain of 12.1 NCEs (±1 NCE) after participating in READ 180 for a school year; students in the medium prior performance group averaged a gain of

⁵ Using scores from the 2003 SAT9 Reading Comprehension Test as the measure of a student's prior performance instead of the student's initial SRI score reduces the probability that the estimate of change in reading proficiency observed is the result of regression to the mean.

12.7 NCEs (± 1 NCE); and those in the high prior performance group averaged a gain of 15 NCEs (± 1 NCE) (Exhibit 24). The differences in score gain were not statistically significant.

Exhibit 24
Change in SRI Scores for Ninth-Grade READ 180 Participants
By Level of Reading Proficiency on 2003 SAT9

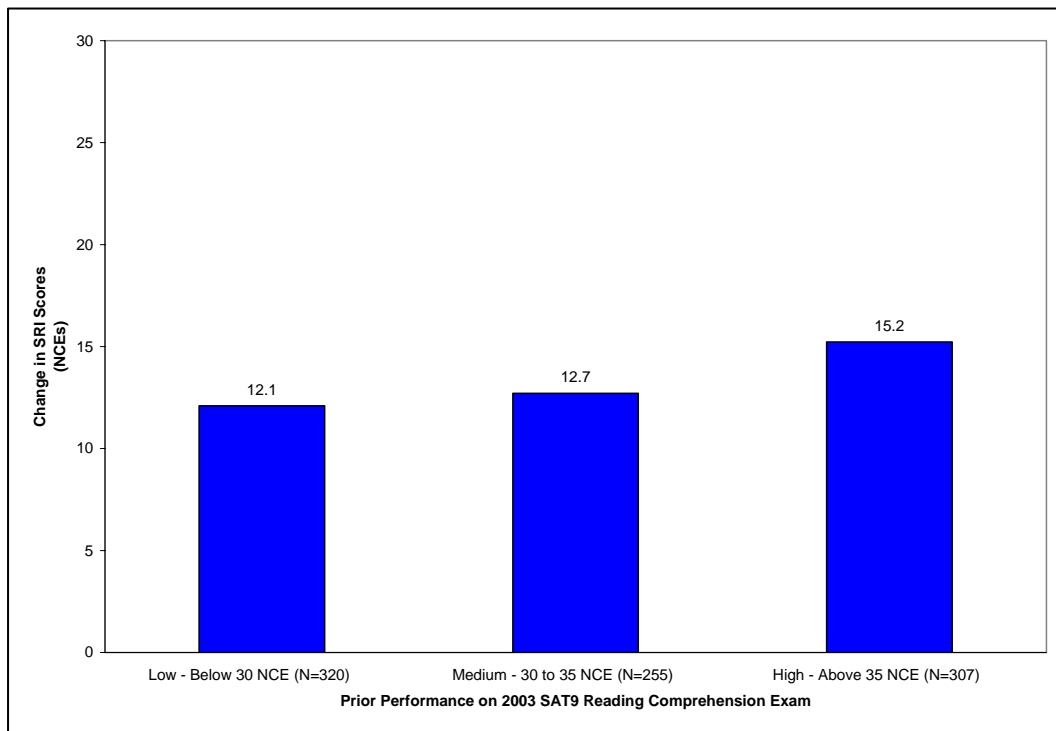


Exhibit reads: Students who were low performers on the 2003 SAT9 Reading Comprehension Test averaged a gain of 12.1 NCEs on the SRI test while participating in READ 180.

ELL Status

There was little difference in the average change in SRI scores between READ 180 participants classified as ELLs and those classified as non-ELLs (Exhibit 25). ELLs averaged a change in SRI scores of 13.3 NCEs (± 0.8 NCE); while non-ELLs averaged a change of 13.5 NCEs (± 0.9 NCE). The difference between the two groups of students was not statistically significant ($p < .86$, ANOVA).

Exhibit 25
Change in SRI Scores for Ninth Grade READ 180 Participants,
by ELL Status

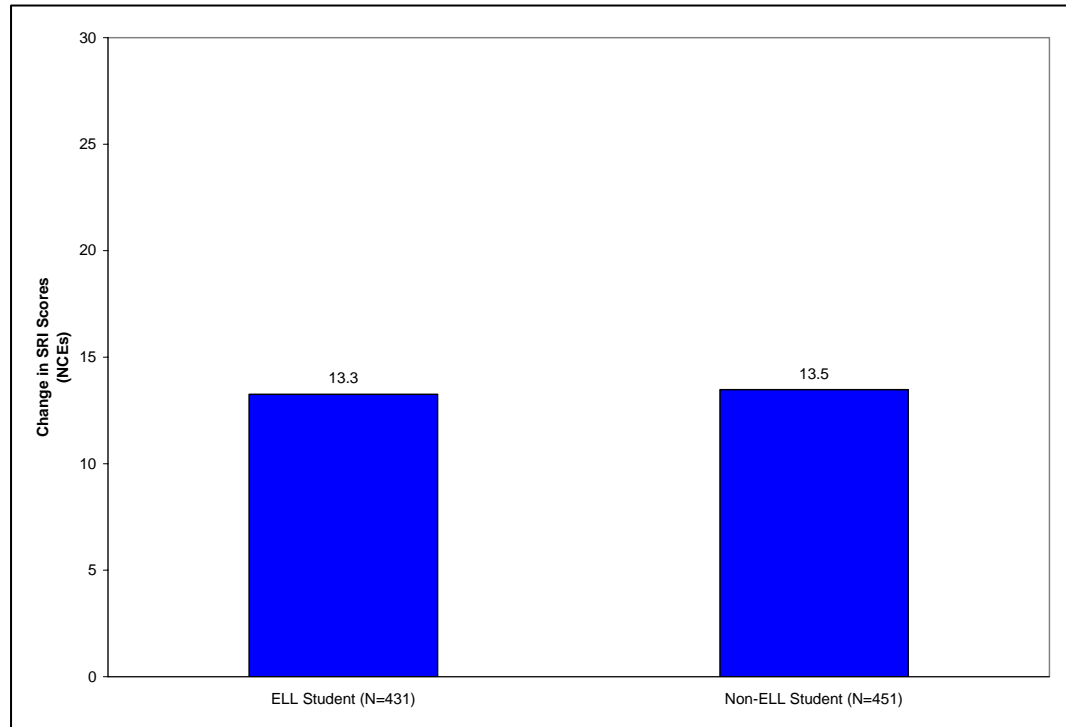


Exhibit reads: The average change in SRI scores among ELLs was 13.3 NCEs.

Eligibility for Special Education Services

Between August 2003 and May 2004, students who were eligible for special education services averaged gains on the SRI exam similar to gains of non-eligible students (Exhibit 26). Special education students in READ 180 averaged a gain of 13.7 NCEs (± 2.0 NCE), while non-special education students averaged a gain of 13.5 NCEs (± 0.9 NCE). The difference between the two groups of students was not statistically significant ($p < .88$, ANOVA).

Exhibit 26
Change in SRI Scores for Ninth Grade READ180 Participants
By Eligibility for Special Education Services

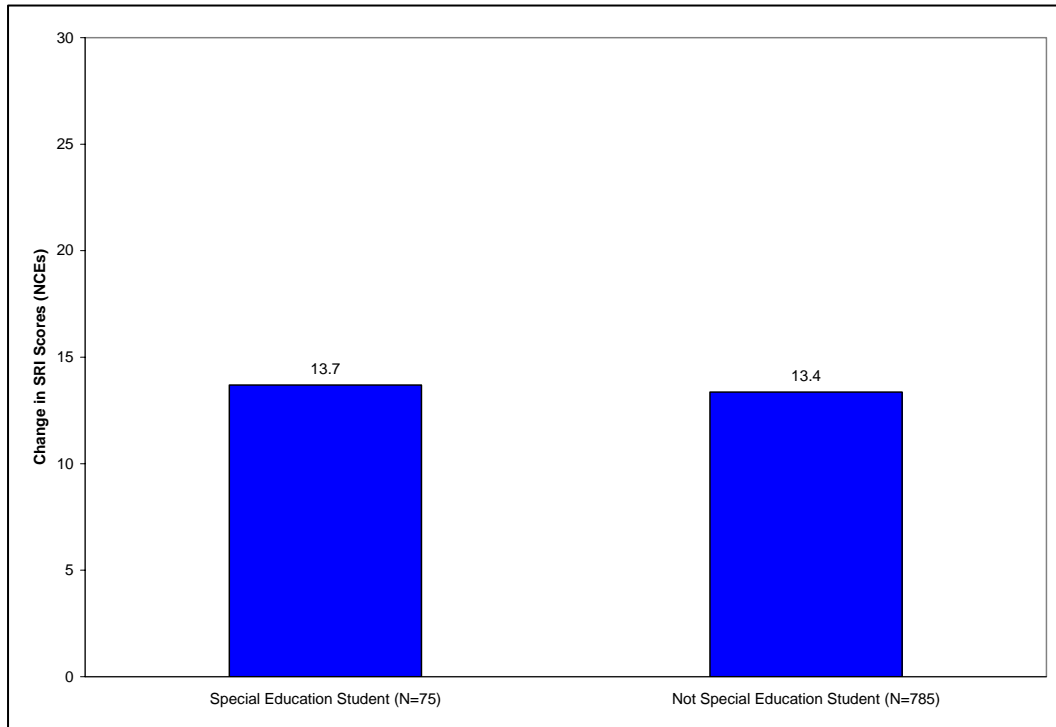


Exhibit reads: The average change in SRI scores among special education students was 13.7 NCEs.

Which Students Appeared to Benefit Most from READ 180?

A multivariate analysis estimated the relative strength of the association among the three student characteristics for which information was available (prior performance, ELL status, and special education).

Prior performance on the SAT9 had the strongest relationship with gains on the SRI test. On average, the higher a student scored on the 2003 SAT9 Reading Comprehension Test, the larger the gains on the SRI in ninth grade. This relationship held when analysis was limited to students who scored below 50 NCEs on the 2003 SAT9.

After allowing for prior performance on the SAT9, neither ELL status nor special education eligibility had any independent relationship to gains on the SRI test.

Appendix C summarizes changes in score on the SRI test among subgroups of students.

Performance of READ 180 Students Eligible for ELL on the Ninth-Grade IPT Exam

At the end of ninth grade, PUHSD ELL students are administered the IDEA Proficiency Test (IPT) to assess their fluency in English. The IPT assessment includes measures of proficiency in reading, writing, and oral language.

At the start of their ninth-grade year, virtually all of the READ 180 participants (395/399 = 99 percent) were classified as scoring at the transitional level of English fluency, compared with 30 percent of nonparticipants (Exhibit 27).

Exhibit 27
Initial English Fluency Level – Start of Ninth Grade

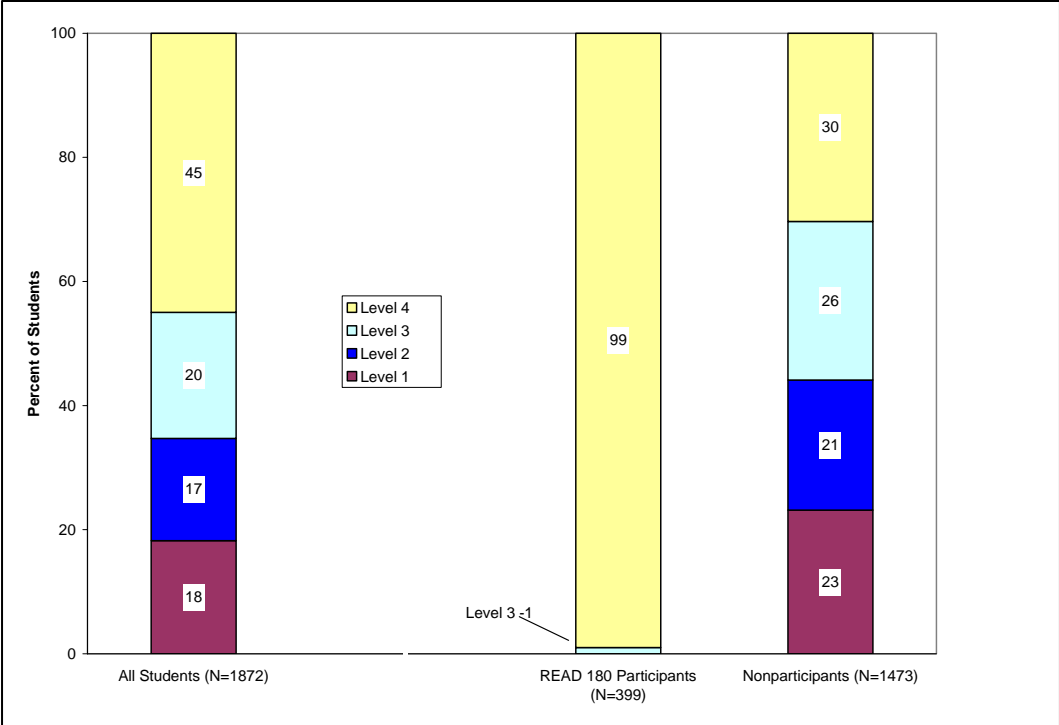


Exhibit reads: Ninety-nine percent of READ 180 participants were classified as performing at the transitional fluency level at the start of ninth grade.

At the end of ninth grade, a smaller proportion of READ 180 students achieved “Competent English Writer” and “Competent English Speaker” status on the IPT exam than did nonparticipants. (Exhibit 28).

- Thirty-seven percent of READ 180 participants achieved “Competent English Reader” status, compared with 49 percent of

nonparticipants. The difference was statistically significant ($p < .01$, Chi-Square).

- Sixty-six percent of READ 180 participants achieved “Competent English Writer” status, compared with 70 percent of nonparticipants. The difference between the two groups of students was not statistically significant.
- Seventy-three percent of READ 180 participants achieved “Fluent English Speaker” status, compared to 81 percent of nonparticipants. The difference was statistically significant ($p < .01$, Chi-Square).

Exhibit 28
Performance on the IPT Exam – End of Ninth Grade

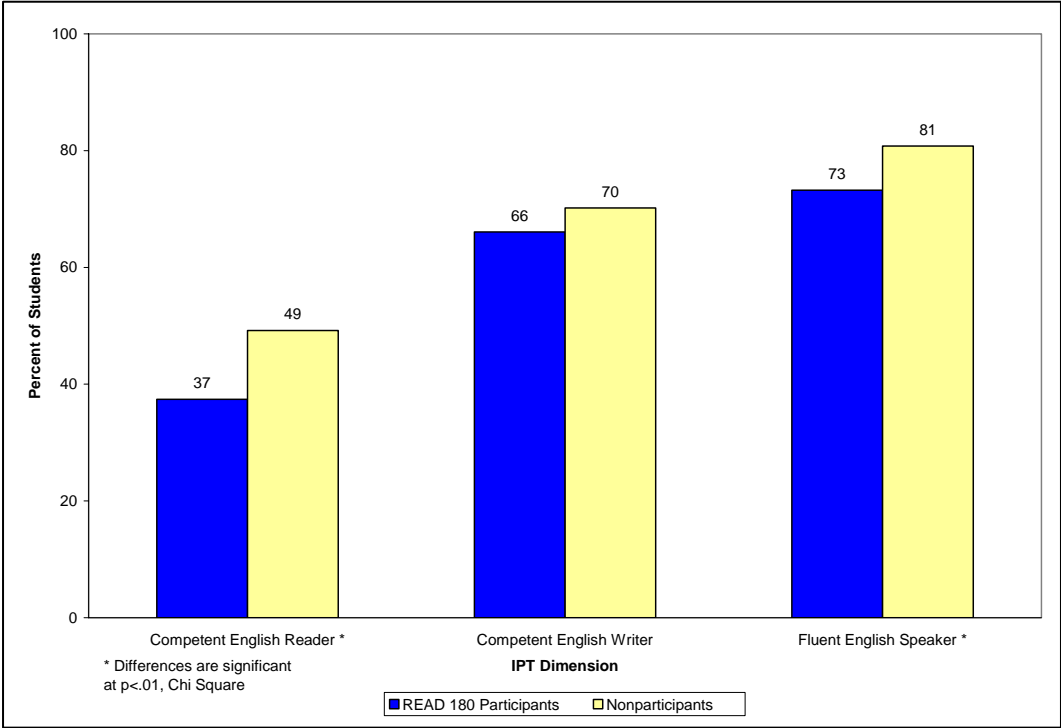


Exhibit reads: Thirty-seven percent of READ 180 participants were classified as “Competent English Reader” on the IPT test.

Appendix A
Using Normal Curve Equivalent Scores

Appendix A

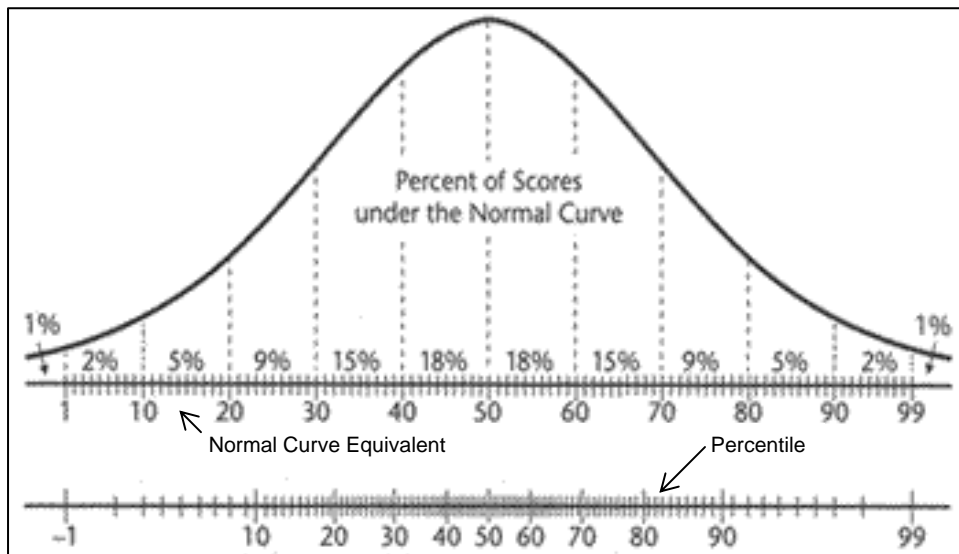
Using Normal Curve Equivalent Scores

A normal curve equivalent score (NCE) is a standardized score (based on a normal distribution) that makes it possible to compare scores across grades and to compute statistics that describe the performance of a group of students, such as average scores, that are not possible using other ways of expressing test scores, such as percentiles. 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, they can be averaged for a group of students.

NCEs are computed by dividing the normal curve distribution of student scores on an assessment into 99 units, with each NCE unit spanning the same number of test points. NCE scores have a mean of 50 and a standard deviation of 21.06. In a normal distribution, an NCE of 1.0 is equivalent to a percentile rank of 1.0, and an NCE of 99.0 is equivalent to a percentile rank of 99.0.

Percentile ranks, as can be seen in Exhibit A1, tend to cluster around the middle of the distribution of test scores, so that a change in performance of one percentile represents a smaller change in the raw score on an assessment at the center of the distribution than at the extremes of the distribution. Because NCEs comprise 99 units of equal size, a change of one NCE represents the same change in the raw score at any point in the distribution.

Exhibit A1
Distribution of Student Scores, Normal Curve Equivalent Scores, and Percentiles



Students performing at grade level will have an NCE of 50, regardless of their grade level. If a student makes exactly one year of progress after one year of instruction, his/her NCE score would be exactly the same both years, and the change in NCE scores would be zero. A

student with a one-year change in NCE scores that is greater than zero has achieved larger gains than the general population, and a student with a negative change in NCE scores has made less progress.

Appendix B
Crosswalk Between SRI Lexile Scale Scores and
Normal Curve Equivalent Scores

Appendix B

Crosswalk Between SRI Lexile Scale Scores and Normal Curve Equivalent Scores

Grade 9				Grade 10			
SRI Lexile Scale Score Range	NCE	SRI Lexile Scale Score Range	NCE	SRI Lexile Scale Score Range	NCE	SRI Lexile Scale Score Range	NCE
Below 585	1	1050 to 1059	51	Below 629	1	1085 to 1094	51
585 to 619	7	1060 to 1069	52	630 to 664	7	1095 to 1104	52
620 to 644	10	1070 to 1084	53	665 to 689	10	1105 to 1114	53
645 to 664	13	1085 to 1094	54	690 to 709	13	1115 to 1124	54
665 to 679	15	1095 to 1104	55	710 to 729	15	1125 to 1134	55
680 to 694	17	1105 to 1114	56	730 to 744	17	1135 to 1144	56
695 to 709	19	1115 to 1119	57	745 to 759	19	1145 to 1149	57
710 to 724	20	1120 to 1129	58	760 to 769	20	1150 to 1159	58
725 to 734	22	1130 to 1139	59	770 to 779	22	1160 to 1169	59
735 to 744	23	1140 to 1149	60	780 to 789	23	1170 to 1179	60
745 to 754	24	1150 to 1154	61	790 to 799	24	1180 to 1184	61
755 to 764	25	1155 to 1164	62	800 to 809	25	1185 to 1194	62
765 to 774	26	1165 to 1169	63	810 to 819	26	1195 to 1199	63
775 to 784	27	1170 to 1184	64	820 to 829	27	1200 to 1209	64
785 to 794	28	1185 to 1189	65	830 to 839	28	1210 to 1214	65
795 to 804	29	1190 to 1204	66	840 to 849	29	1215 to 1229	66
805 to 814	30	1205 to 1209	67	850 to 859	30	1230 to 1234	67
815 to 824	31	1210 to 1224	68	860 to 869	31	1235 to 1249	68
825 to 844	32	1225 to 1229	69	870 to 889	32	1250 to 1259	69
845 to 854	33	1230 to 1239	70	890 to 904	33	1260 to 1269	70
855 to 869	34	1240 to 1244	71	905 to 919	34	1270 to 1274	71
870 to 879	35	1245 to 1259	72	920 to 929	35	1275 to 1284	72
880 to 899	36	1260 to 1264	73	930 to 944	36	1285 to 1289	73
900 to 904	37	1265 to 1274	74	945 to 849	37	1290 to 1299	74
905 to 919	38	1275 to 1279	75	950 to 964	38	1300 to 1304	75
920 to 929	39	1280 to 1289	76	965 to 969	39	1305 to 1314	76
930 to 944	40	1290 to 1299	77	970 to 984	40	1315 to 1324	77
945 to 959	41	1300 to 1309	78	985 to 994	41	1325 to 1334	78
960 to 974	42	1310 to 1324	80	995 to 1009	42	1335 to 1349	80
975 to 979	43	1325 to 1339	81	1010 to 1014	43	1350 to 1364	81
980 to 994	44	1340 to 1359	83	1015 to 1024	44	1365 to 1384	83
995 to 1004	45	1360 to 1379	85	1025 to 1034	45	1385 to 1404	85
1005 to 1014	46	1380 to 1409	87	1035 to 1044	46	1405 to 1439	87
1015 to 1024	47	1410 to 1454	90	1045 to 1054	47	1440 to 1479	90
1025 to 1034	48	1455 to 1504	93	1055 to 1064	48	1480 to 1529	93
1035 to 1044	49	1505 and higher	99	1065 to 1079	49	1530 and higher	99
1045 to 1049	50			1080 to 1084	50		

Appendix C
Summary of Change in Score on the SRI Exam by
Student Characteristics

Appendix C

Summary of Change in Score on the SRI Exam by Student Characteristics

Ninth Grade READ 180 Participants Average Change in Scores on the SRI Exam

Change in SRI Score -- Lexiles			Change in SRI Scores -- NCEs		
Mean	Median	Differences Between Initial and Final SRI Scores Statistically Significant (p<0.05)	Mean	Median	Differences Between Initial and Final SRI Scores Statistically Significant (p<0.05)
110.9	121.0	Yes	10.4	11.0	Yes
N					
287					

Ninth Grade READ 180 Participants Average Change in Scores on the SRI Exam By Initial Performance Standard and Student Characteristics – In Lexiles

Student Category	Initial Performance Standard	Change in SRI Scores--Lexiles			
		Mean	Median	Differences Between Initial and Final SRI Scores Statistically Significant (p<0.05)	N
All Ninth Graders	At Risk	289.9	295.0	Yes	413
	Basic	107.0	110.0	Yes	713
	Proficient and Advanced	-37.8	-49.0	No	74
Not ELL or SPED	At Risk	304.5	297.5	Yes	108
	Basic	106.8	112.0	Yes	214
	Proficient and Advanced	-43.3	-48.0	No	31
ELL but not SPED	At Risk	287.4	299.0	Yes	131
	Basic	103.4	110.0	Yes	271
	Proficient and Advanced	-17.0	-0.5	No	24
SPED but Not ELL	At Risk	218.5	198.0	Yes	37
	Basic	101.3	83.5	Yes	22
	Proficient and Advanced	NA	NA	NA	1
Both SPED and ELL	Only 5 students, too few for analysis				

**Ninth Grade READ 180 Participants
Average Change in Scores on the SRI Exam
By Performance on the 2003 SAT9 and
Student Characteristics – In Lexiles**

Student Category	Initial Performance on 2003 SAT9 Reading Comprehension Test	Change in SRI Scores--Lexiles			
		Mean	Median	Differences Between Initial and Final SRI Scores Statistically Significant ($p < 0.05$)	N
All Ninth-Graders	Low - Below 30 NCE	146.9	143.0	Yes	297
	Medium – 30 to 35 NCE	155.2	143.5	Yes	242
	High – Above 35 NCE	168.1	156.0	Yes	293
Not ELL or SPED	Low - Below 30 NCE	133.3	120.5	Yes	106
	Medium – 30 to 35 NCE	152.6	157.0	Yes	109
	High – Above 35 NCE	171.2	147.0	Yes	138
ELL but not SPED	Low - Below 30 NCE	144.1	142.0	Yes	143
	Medium – 30 to 35 NCE	148.6	133.0	Yes	123
	High – Above 35 NCE	167.2	162.0	Yes	148
SPED but Not ELL	Low - Below 30 NCE	166.1	150.0	Yes	45
	Medium – 30 to 35 NCE	NA	NA	NA	8
	High – Above 35 NCE	NA	NA	NA	7
Both SPED and ELL	Only 5 students, too few for analysis				

**Ninth Grade READ 180 Participants
Average Change in Scores on the SRI Exam
By Initial Performance Standard and
Student Characteristics – In NCEs**

Student Category	Initial Performance Standard	Change in SRI Scores--Lexiles			
		Mean	Median	Differences Between Initial and Final SRI Scores Statistically Significant (p<0.05)	N
All Ninth-Graders	At Risk	23.6	24.0	Yes	413
	Basic	9.7	10.0	Yes	713
	Proficient and Advanced	-2.7	-5.5	No	74
Not ELL or SPED	At Risk	26.5	27.0	Yes	108
	Basic	9.7	10.0	Yes	214
	Proficient and Advanced	-3.5	-6.0	No	31
ELL but not SPED	At Risk	23.3	26.0	Yes	131
	Basic	9.4	10.0	Yes	271
	Proficient and Advanced	-0.7	0.0	No	24
SPED but Not ELL	At Risk	15.4	16.0	Yes	37
	Basic	9.0	7.5	Yes	22
	Proficient and Advanced	NA	NA	NA	1
Both SPED and ELL	Only 5 students, too few for analysis				

**Ninth Grade READ 180 Participants
Average Change in Scores on the SRI Exam
By Performance on the 2003 SAT9 and
Student Characteristics – In NCEs**

Student Category	Initial Performance Standard	Change in SRI Scores--NCEs			
		Mean	Median	Differences Between Initial and Final SRI Scores Statistically Significant (p<0.05)	N
All Ninth-Graders	Low - Below 30 NCE	11.9	12.0	Yes	297
	Medium – 30 to 35 NCE	13.0	12.5	Yes	242
	High – Above 35 NCE	15.28	14.0	Yes	293
Not ELL or SPED	Low - Below 30 NCE	11.7	10.0	Yes	106
	Medium – 30 to 35 NCE	12.6	14.0	Yes	109
	High – Above 35 NCE	16.0	15.5	No	138
ELL but not SPED	Low - Below 30 NCE	11.8	13.0	Yes	143
	Medium – 30 to 35 NCE	12.8	12.0	Yes	123
	High – Above 35 NCE	14.7	13.0	Yes	148
SPED but Not ELL	Low - Below 30 NCE	12.0	13.0	Yes	45
	Medium – 30 to 35 NCE	NA	NA	NA	8
	High – Above 35 NCE	NA	NA	NA	7
Both SPED and ELL	Only 5 students, too few for analysis				

**Tenth Grade READ 180 Participants
Average Change in Scores on the SRI Exam**

Cohort	Change in SRI Score -- Lexiles			Change in SRI Scores -- NCEs			N
	Mean	Median		Mean	Median		
Fall	68.8	65.5	Yes	5.4	4.0	Yes	410
Spring	110.9	121.0	Yes	10.4	11.0	Yes	287

**Tenth Grade READ 180 Participants
Average Change in Scores on the SRI Exam
By Initial Performance Standard**

Cohort	Initial Performance Standard	Change in SRI Scores--Lexiles			Change in SRI Scores--NCE			N
		Mean	Median	Differences Between Initial and Final SRI Scores Statistically Significant (p<0.05)	Mean	Median	Differences Between Initial and Final SRI Scores Statistically Significant (p<0.05)	
Fall	At Risk	162.6	176.0	Yes	12.3	9.0	Yes	137
	Basic	40.2	25.5	Yes	3.6	2.0	Yes	226
	Proficient and Advanced	-67.7	-52.0	Yes	-5.9	-5.5	No	46
Spring	At Risk	230.2	257.5	Yes	20.6	23.0	Yes	64
	Basic	100.2	107.5	Yes	9.7	10.0	Yes	184
	Proficient and Advanced	-37.9	-63.0	Yes	-3.0	-6.0	No	37