

## **READ 180 Stage B: St. Paul School District, Minnesota**

The following evaluation is an assessment of READ 180 student outcomes in St. Paul, Minnesota. The St. Paul School District implemented READ 180 in their middle schools during 2003-04 to increase students' reading achievement within the district.

Twenty-three teachers in 11 schools taught approximately 820 READ 180 students, which included 413 seventh graders and 407 eighth graders during 2003-04. The READ 180 students broke down into the following subgroups:

- 45% Regular Education
- 34% English Language Learners
- 15% Special Education
- 6% ELL/SPED

The ethnic distribution of READ 180 students:

- 44% African-American
- 30% Asian
- 15% Caucasian
- 9% Hispanic
- 2% Native American

## **Research Design**

### **Research Questions**

To evaluate the effectiveness of READ 180 in St. Paul, an outcomes assessment was designed. The research questions at the heart of the analysis were:

- What impact does READ 180 have on student reading proficiency?
- What impact does the length and intensity of exposure to READ 180 have on student reading proficiency?

### **The Sample**

Pre- and posttest scores and classroom implementation levels were not available for all students. Therefore data analysis was limited to a student sample of 573 seventh and eighth grade students who had both pre- and posttest SRI scores, from classrooms that provided implementation data indicating on-model or off-model classrooms. This student sample was large enough to allow matched-pairs t-test, anova and regression analyses of pre- and posttest scores in order to detect the effects of READ 180 on student reading achievement by pretest proficiency level, subgroup, and overall.

### **Definitions**

- "Statistically significant relationship" means that one can place confidence of at least 95 percent in the decision to generalize the findings from the sample to the population. There is only a 5 percent probability that the findings are attributed to chance and not to a real relationship between the variables. This is a statistical procedure and does not indicate "significance" in the ordinary language sense of "meaningful."

- “Matched-pairs t-test” is an inferential test that determines whether there is a significant difference between the means of the pre and the post scores.
- “Linear regression” is a method designed to develop a model for predicting the value of a dependent variable for given values of independent variables.
- “Lexiles” are a unit of measurement used to determining the difficulty of text and the reading level of readers. A Lexile is equivalent to 1/1000th of the difference between the comprehensibility of basal primers (the midpoint of first grade text) and the comprehensibility of an electronic encyclopedia (the midpoint of workplace text).
- “Stanines” are a standardized student score that indicate a student’s relative standing in the norm group. Stanines have a mean of 5 and a standard deviation of 2, and range from 1 to 10.

## Results

### SRI Pretest and Posttest

The Scholastic Reading Inventory (SRI) was used to assess reading growth pretest to posttest. SRI is a reading comprehension test that assesses students' reading levels, tracks students' reading growth over time, matches readers to text, and helps guide instruction according to students' needs. SRI determines a student's reading comprehension level and provides a variety of assessment results, including a Lexile score, a percentile rank, an NCE (Normal Curve Equivalent) and a Stanine. The analysis included all four scores in determining whether READ 180 influenced student performance.

In order to find out whether READ 180 had an effect on students' reading comprehension, the scores of students before participation in READ 180 instruction are compared with their scores after participation in READ 180. Comparing pretest and posttest scores provide a standard measure of the benefits from participating in *READ 180*. The more the student's Lexile score increases, the more the student has gained in reading ability.

### Overall Results

Overall, students performed significantly better after the READ 180 instruction ( $p < 0.01$ ). The entire student sample gained significantly on the SRI, including each grade level and each gender group. The detailed gains on the four different SRI assessments are outlined below.

**Table 1. Overall Student Performance on SRI, Before and After READ 180**

<b>SRI</b>	<b>Percentile Rank</b>	<b>NCE</b>	<b>Stanine</b>	<b>Lexiles</b>
Pretest	18.2	25.0	2.9	659.0
Posttest	27.1	33.7	3.7	768.5
<b>Gain</b>	<b>8.9</b>	<b>8.7</b>	<b>0.8</b>	<b>109.5</b>

### **Disaggregated Results: Reading Growth by Pretest Proficiency Level**

To further explain reading growth, Scholastic (publisher of the SRI) defines proficiency levels based on Lexile score, describing the level of specific content that students must be able to read at various levels of proficiency. Students with scores at the “Proficient” or “Advanced” levels are

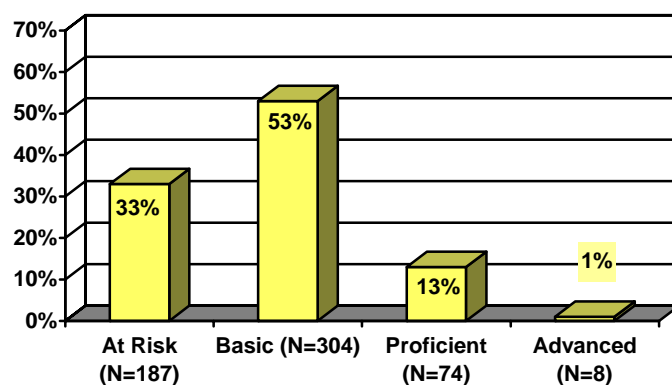
considered to be reading at grade level. Different ranges of Lexile scores are associated with each proficiency level, per grade:

**Table 2. Range of Lexile Scores Associated With Each SRI Proficiency Level**

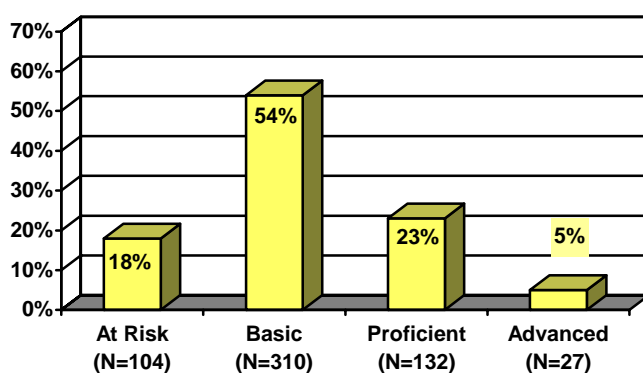
<b>Grade</b>	<b><i>At-Risk</i></b>	<b><i>Basic</i></b>	<b><i>Proficient</i></b>	<b><i>Advanced</i></b>
Seventh	549L and below	550L to 849L	850L to 1100L	1101L or above
Eighth	599L and below	600L and 899L	900L to 1150L	1151 and above

The reading proficiency of the overall student sample at September 2003 pretest and May 2004 posttest, using the proficiency levels established by SRI, are illustrated below:

**Graph 1a. Percent Distribution of Student Reading Proficiency, September 2003 Pretest**



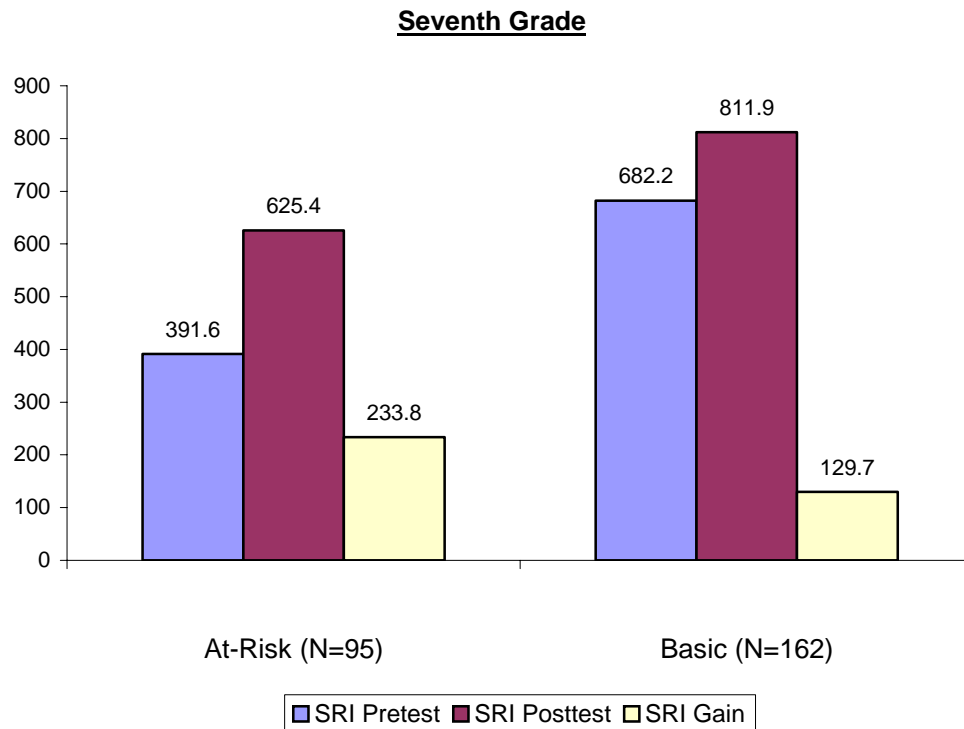
**Graph 1b. Percent Distribution of Student Reading Proficiency, May 2004 Posttest**



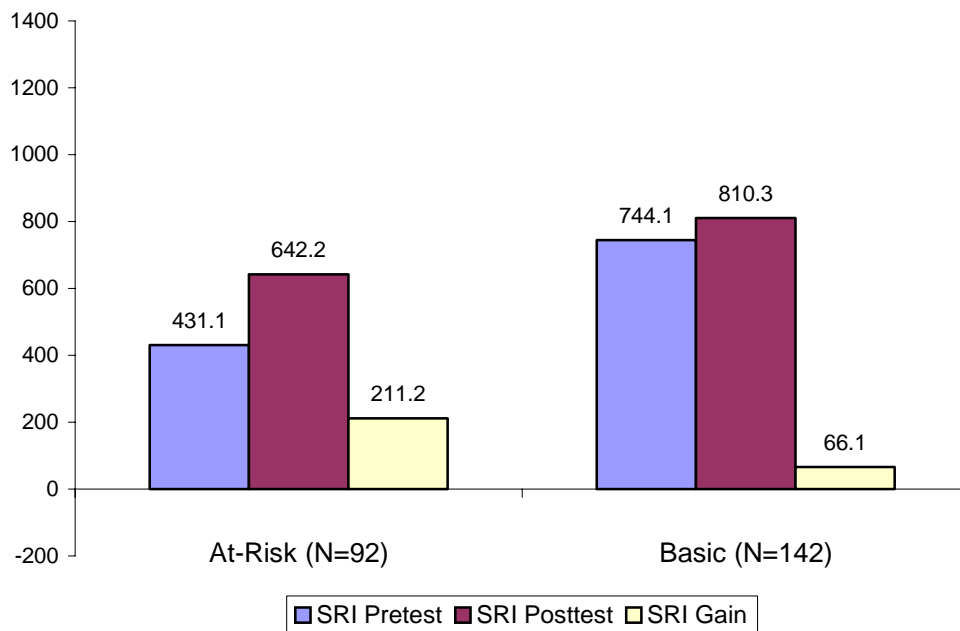
### Disaggregated Results: At-Risk and Basic readers

At-risk and basic readers showed the greatest reading gains at the 0.01 significance level. READ 180 proved to be particularly effective with At-Risk readers, as 61% of at-risk readers moved up in proficiency level to basic level or above. A summary of at-risk and basic student gains by pretest proficiency level is shown below.

**Graph 2. At-Risk and Basic Reader Performance on SRI, by Pretest Proficiency Level, Before and After READ 180**



### Eighth Grade

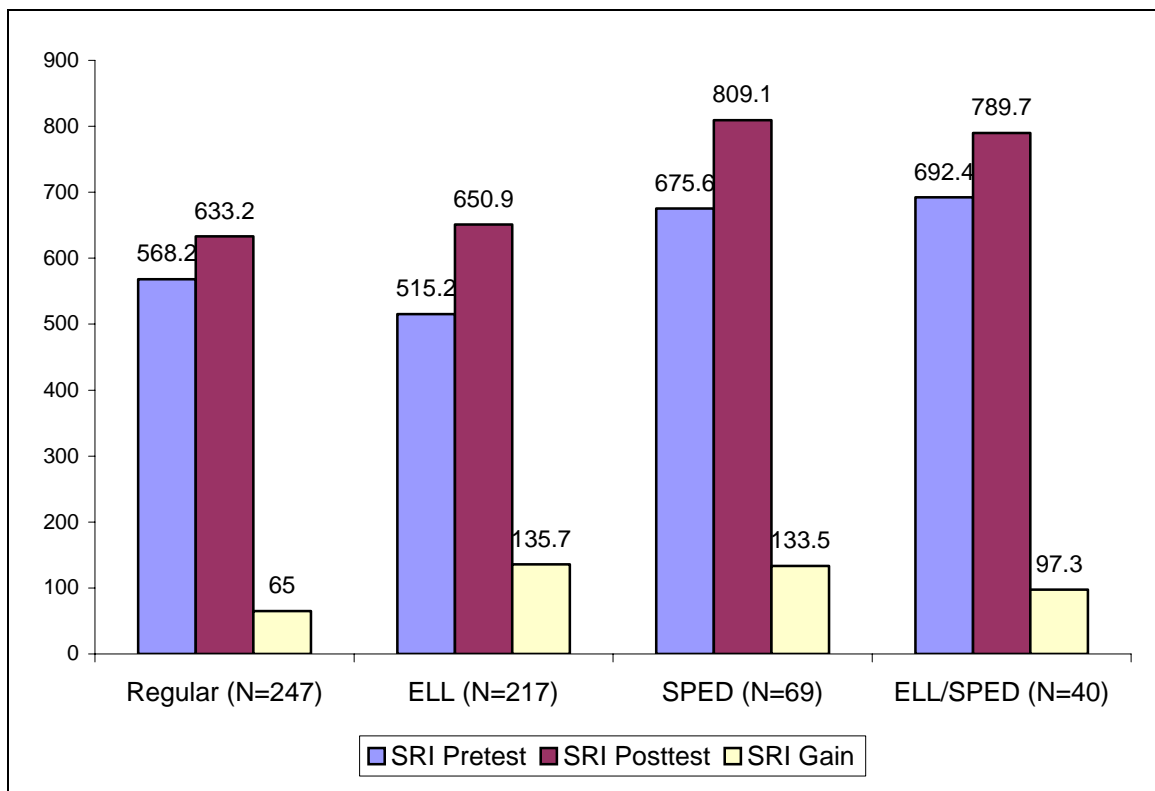


#### Disaggregated Results: Subgroups

Student gains were also analyzed by student subgroups. The distribution of subgroups in the sample was as follows:

- 43% Regular Education
- 38% ELL
- 12% SPED
- 7% ELL/SPED

The anova analysis revealed that mean pretest to posttest gains between these groups were not significantly different ( $p = 0.13$ , insignificant); i.e., there was equal benefit to all students. Therefore, READ 180 can be used effectively with diverse readers.

**Graph 3. Student Performance on SRI by Subgroup, Before and After READ 180**

#### Effect of Implementation on Reading Growth

Data on level of READ 180 implementation was also provided for each classroom. Implementation levels are determined as follows:

- **On-Model Implementation (Level 1 implementation):** 90 minute class, 5 days a week; 20 minutes of whole group instruction at beginning of each class period, 10 minutes of whole group instruction at end of each class period. Class schedule includes three 20-minute rotations 5 days per week with no more than 5 to 7 students per group.
- **Off-Model Implementation (Level 2 Implementation):** All of above, except 90 minutes block, 5 days a week, and whole group instruction.
- **Off-Model Implementation (Level 3 Implementation):** All of Level 2, without three 20-minute rotations 5 days per week.
- **Above models should include the following:** All hardware, books, software available; adequate training, professional development and technical support; appropriate furniture and tech configuration for ease of mobility through rotations; frequent use of Scholastic Management Suite, guides and reproducibles; SRI administration at beginning, mid-point and end of student participation; student participation for at least 1 year.

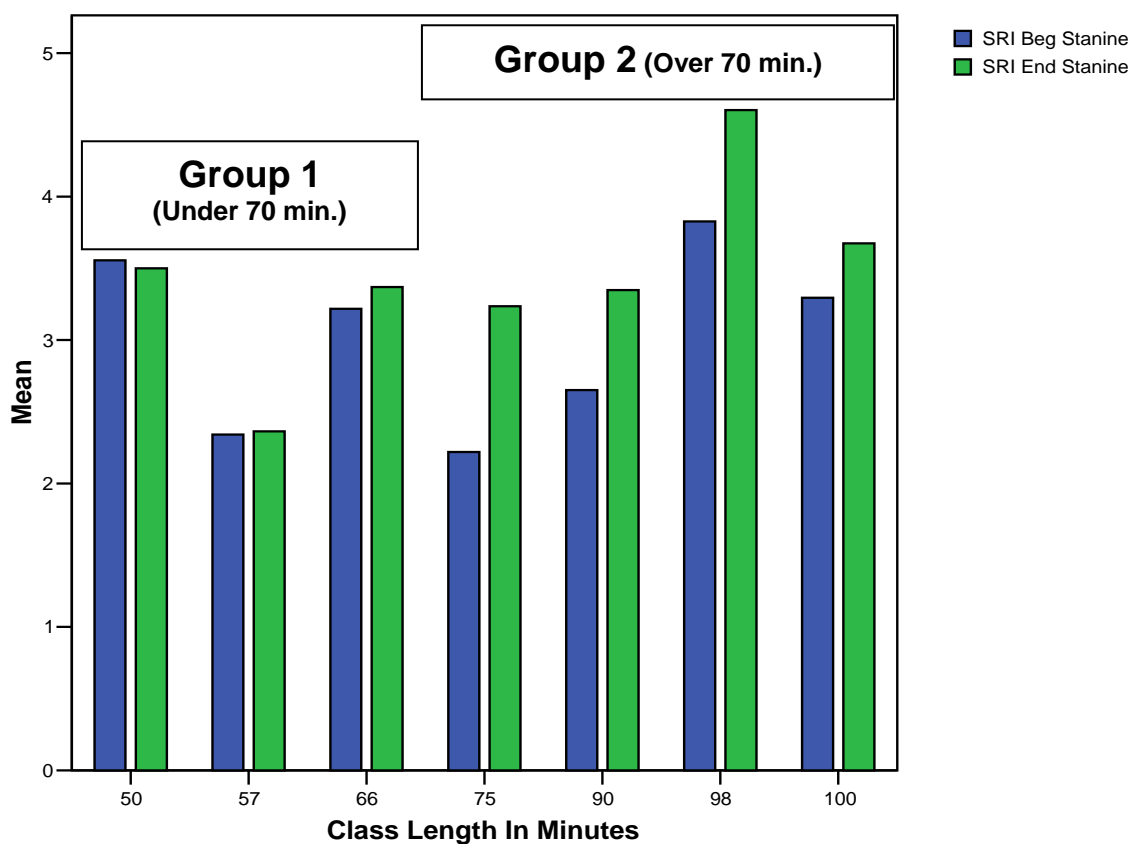
12 classrooms were on-model, 8 classrooms were off-model, and 3 classrooms were of unknown implementation. Average READ 180 implementation was 160 days per student, ranging from 151 to 168 days.

Duration of instruction has a significant effect on reading growth, as can be seen in the chart below comparing classrooms with varying amounts of time devoted to READ 180. There is almost no difference between pre- and posttest Stanine scores for Group 1 (classes under 70 minutes), while there are significant gains for Group 2 (classes over 70 minutes). This effect is confirmed by a t-test and a regression analysis which show that schools with READ 180 classes over 70 minutes performed significantly better (75 minutes:  $p < 0.01$ ; 90 minutes:  $p < 0.01$ ; 98 minutes:  $p < 0.01$ ; 100 minutes:  $p < 0.05$ ) than schools with classes under 70 minutes, which did not have any significant results.

In addition, the number of READ 180 sessions is also statistically significant in predicting post-READ 180 SRI scores ( $p < 0.01$ ). The higher the number of sessions and the longer the classes, the higher the posttest SRI score.

Student enrollment and attendance had no significant effect.

**Graph 4. Student Stanine Performance Before and After READ 180, By School**



### Correlation of SRI to Standardized Tests in St. Paul

Correlations were conducted between the May 2004 SRI posttest scores and the standardized tests used in St. Paul. The BST (Minnesota Basic Skills Test) was administered in February 2004, MCA (Minnesota Comprehensive Assessment) in seventh grade, and SAT-10 (Stanford Achievement Test-10) in May 2004.

There was a strong correlation at the 0.01 level between the May 2004 SRI posttest and the BST and SAT-10, and a weaker correlation with the MCA, as illustrated below.

**Table 3. Correlation of SRI to Other Standardized Tests Administered in St. Paul**

Test	Correlation to May 2004 SRI Posttest	N
<b>BST</b>	0.617*	290
<b>SAT10</b>	0.493*	526
<b>MCA</b>	0.139*	348

\*p < 0.01

### **Summary**

According to Alliance for Excellent Education, “approximately 8 million young people between 4<sup>th</sup> and 12<sup>th</sup> grade struggle to read at grade level. Some 70 percent of older readers require some form of remediation.” Students who do not have strong literacy skills find themselves at a serious disadvantage in social settings, as civil participants, and in the working world. (Alliance for Excellent Education, 2004)

There is an urgent need among secondary school educators to address and solve this problem among struggling adolescent readers. Middle and high school reading education must help these students achieve sufficient gains in reading ability so they can have the literacy skills needed to succeed in school and in life. In St. Paul, Minnesota, struggling readers in the 7<sup>th</sup> and 8<sup>th</sup> grade have made substantial gains in reading ability through the READ 180 program. Overall, these students made an average gain of 110 Lexiles after one year of READ 180, or two grade levels (50 Lexiles = one grade level gain). ELL and special education students also received equivalent reading gains from their participation in READ 180.

A plot of the proficiency levels for READ 180 students demonstrated that the overall distribution of reading proficiency in these students moved up one level from September to May; 61% of those who were at-risk readers moved to basic level proficiency. Since the SRI is well correlated with state reading tests in Minnesota, these gains translate into achievement level gains.

Finally, it is clear that implementation level of READ 180 matters in achieving reading gains. A survey of READ 180 classrooms demonstrates that classrooms with instruction duration under 70 minutes had little or no reading gains compared with READ 180 classrooms over 70 minutes, all of which had significant reading gains.