**READ 180® Significantly Improves the Reading Achievement of Struggling Students Participating in the Striving Readers Program**

**ABSTRACT**
In the federally funded 2006–2011 Striving Readers study, schools in four of five school districts that used READ 180 for a period ranging from one to five years showed significant increases in reading achievement for struggling students. In Newark, New Jersey, significant impacts were shown for all students, as well as for the important student population groups of boys, African Americans, and students with disabilities. READ 180 was shown to have a significant overall impact on incarcerated students in Ohio Department of Youth Services facilities, the majority of which were male and African American, and a large percentage of which were students with disabilities. Additionally, READ 180 was shown to have significant impacts for students in the urban-suburban school district of Springfield-Chicopee, Massachusetts and the urban school district of Milwaukee, Wisconsin, both of which contained large percentages of economically disadvantaged students. While the results for Memphis, TN were mixed overall, there was a small but significant positive impact of READ 180 on sixth-grade struggling students.

**OVERVIEW**
Adolescent literacy is in a state of crisis in the United States (Jacobs, 2008). Results on the National Assessment of Educational Progress (NAEP) signify an increasing decline in literacy proficiency as 34% of fourth graders and 26% of eighth graders are reading below the basic level (U.S. Department of Education, 2010). In urban cities, these numbers are even worse (46% and 37%, respectively). Too many struggling readers are at risk for poor academic outcomes, such as dropping out of school before graduating or graduating without the skills needed for college and/or careers (Carnegie Council, 2010). In response, educators, policymakers, and researchers have been working to find ways to intervene with these struggling readers.

**PROFILE**
**Districts:**
Memphis City Schools, Tennessee; Milwaukee Public Schools, Wisconsin; Newark Public Schools, New Jersey; Ohio Department of Youth Services, Ohio; and Springfield and Chicopee Public Schools, Massachusetts.

**Evaluation Period:** 2006–2011

**Grades:** 6–12

**Model:** Daily 90-minute model

**Assessments:** California Achievement Test for Reading (ReadCAT); Reading Comprehension Section of the Iowa Tests of Basic Skills (ITBS); Northwest Evaluation Association Measures of Academic Progress (MAP); Scholastic Reading Inventory (SRI); Reading and Language Arts Sub-scales of the Stanford Achievement Test, Tenth Edition (SAT 10); Stanford Diagnostic Reading Test, Series 4 (SDRT-4); Tennessee Comprehensive Assessment Program Reading/ Language Arts Test (TCAP)
DISTRICT CHARACTERISTICS
To be eligible to apply for the Striving Readers grant program, districts had to provide evidence that the schools involved were eligible to receive funds under part A of Title I of the Elementary and Secondary Education Act. In addition, a significant number of students in the schools to be served by the literacy intervention must have been identified as struggling readers by either state or other assessment data.

IMPLEMENTATION OVERVIEW
Funded by the United States Department of Education, the Striving Readers program provided grants to selected districts aiming to raise middle and high school students’ literacy levels by providing reading interventions that either replaced the regular English Language Arts (ELA) curriculum at participating schools or supplemented it. A goal of the Striving Readers program was to build a strong, scientific research base for identifying and replicating strategies that improve adolescent literacy skills; thus a strong experimental evaluation component was included in all projects.

Five of the districts chosen to participate in the Striving Readers program elected to use READ 180 Enterprise Edition as a reading intervention program. For the purposes of this report, only the five districts using READ 180 are profiled. Four of these districts (Memphis City Schools, Newark Public Schools, Ohio Department of Youth Services, and Springfield and Chicopee Public Schools) were funded for a five-year period, from 2006 to 2011. The other district, Milwaukee Public Schools, was to be funded for a two-year period beginning in 2010; however, the grant was discontinued after one year.

Implementation Model
Across the Striving Readers sites discussed in this report, READ 180 Enterprise Edition was selected as a reading intervention for students ranging from the sixth grade to the twelfth grade. At all sites, students who were placed into the READ 180 classrooms were expected to receive 90 minutes of instruction daily. The implementation guidelines included specified time for whole-group instruction (20 minutes), small-group work with rotations among three stations (60 minutes), and whole-group wrap-up (10 minutes). The three stations consisted of: small-group direct instruction; independent work using READ 180’s computer-assisted instructional (CAI) software; and modeled or independent reading. Students who were not placed into READ 180 classrooms either received the district’s regularly implemented ELA instruction, a chosen elective, or an alternate reading intervention.

Participants
Five different analytic groups are represented in this report: Memphis City Schools (MCS), Milwaukee Public Schools (MPS), Newark Public Schools (NPS), Ohio Department of Youth Services (ODYS), and Springfield and Chicopee Public Schools (SCPS). A brief description of the demographics for each sample is provided in Table 1, along with the results for each site.

Measures
The seven different measures of reading comprehension used in the evaluations are described in the Appendix, and Table 1 summarizes the assessments used for each site.

RESULTS1
Memphis City Schools (MCS)
In MCS, there were 3,407 participants in Grades 6–8 who received at least one year of treatment. The majority were African American (94%) and 6% were Hispanic. Six percent were English language learners (ELLs) and 93% were economically disadvantaged.

While overall results were mixed, the analysis did reveal an effect in Year 3 of the project (Schneck, Feighan, Coffey, Rui, 2011). There was significant positive impact of participation in READ 180 on sixth-grade struggling readers' scores on the TCAP Reading/Language Arts test (effect size of .21). In Year 4, the positive impact of two years of participation in READ 180 on seventh-grade students' scores on the Reading Comprehension section of the ITBS approached significance (effect size of .22). Analyses of implementation data revealed that the READ 180 implementation varied widely across the eight schools and sixteen classrooms. READ 180 was implemented to higher levels each year increasing from around 40% in Year 1 to more than 80% by the end of the Striving Readers program. It is important to note that as the fidelity to implementation reached higher levels in Years 3 and 4, so did the positive impact of READ 180 on students’ achievement.

Milwaukee Public Schools (MPS)
In MPS, there were 881 participants in Grades 6–9. The majority were African American (70%), 19% were Hispanic, 7% were Caucasian, and 4% were Other. Thirty-six percent

1 The full reports for each district are available at www2.ed.gov/programs/strivingreaders/.
were students with disabilities, 8% were ELLs, and 88% were economically disadvantaged. Of these participants, 619 were included in the MAP analysis (Swanlund, et al., 2012).

Results revealed a significant positive impact on struggling readers in Grades 6–9 from the one year that they were exposed to READ 180 before the funding for the program was cut (effect size of .14). On the MAP, students who participated in READ 180 scored approximately 1.8 points higher than their peers who did not participate in the program. Overall, the READ 180 classroom model was implemented with high fidelity, indicating that successful implementation is associated with positive impact.

Newark Public Schools (NPS)
In NPS, there were 5,154 participants in Grades 6–8. Of these participants, 5,098 were included in the SAT 10 analysis (Meisch, et al., 2011). There were three analytic groups (Groups 1 through 3): Group 1 consisted of students with one year of exposure to READ 180 (50%); Group 2 consisted of students with two years of exposure to READ 180 (30%); and Group 3 consisted of students with three years of exposure to READ 180 (20%). See Table 2. The majority of students in the three groups were either African American (55%) or Hispanic (43%), 1% was Caucasian, and 1% was Other. Forty-two percent were students with disabilities, 10% were ELLs, and 71% were economically disadvantaged.

Results revealed that struggling readers with two years of exposure to READ 180 (Group 2) performed significantly better on the Reading Comprehension subtest of the SAT 10 than control group students (effect size of .14). This finding held for subgroups of students with disabilities, male students, and African American students, with READ 180

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Note. ELL = English Language Learner; ED = Economically Disadvantaged
being particularly effective for students with disabilities (see Graph 1). Students with disabilities in Group 1 performed significantly better on the Vocabulary subtest of the SAT 10 after one year of exposure to READ 180 (effect size of .13). Students with disabilities in Group 2 performed significantly better on the Reading Comprehension subtest after receiving two years of READ 180 (effect size of .22). Male students and African American students in Group 2 also performed significantly better on the Reading Comprehension subtest (effect sizes of .21 and .15, respectively). While fidelity to the class size and ongoing student assessment components of the READ 180 implementation remained high across the first four years, fidelity to the instructional software component dropped sharply in years two and four. This decrease in the amount of time that students were able to use the READ 180 software could explain why gains made by Group 3 students did not reach statistical significance.

Ohio Department of Youth Services (ODYS)
In ODYS, the juvenile corrections system of Ohio, there were 1,982 participants ages 15 to 21 in Grades 7–12. The majority were African American (69%) and male (96%). Twenty-four percent were Caucasian, 2% were Hispanic, and 5% were Other. Forty-three percent were students with disabilities. Of these participants, 1,245 were included in the SRI analysis and 243 were included in the ReadCAT analysis (Loadman, Moore, Ren, Zhu, Zhao, & Lomax, 2011).

Graph 1.
Newark Public Schools READ 180 and Control Group Students, Grades 6–8 (N = 5,098) Performance on SAT 10 Reading and Language Arts Subscales, 2006–2011

Note. All students, including students with disabilities, male, and African American students, demonstrated significant improvements in reading achievement after two years of READ 180. Students with disabilities also demonstrated significant improvements in reading achievement after one year of READ 180. Significant effect sizes were translated into percentile gains to predict the amount of improvement in terms of percentile points, e.g., with a percentile gain of six, students scoring at the 50th percentile on the SAT 10 would be predicted to score at the 56th percentile after using READ 180.
difference was significant (p = .03). Conversely, students who were randomly assigned to a comparison reading intervention, Xtreme Reading, did not show significant gains over the control group students. As Graph 3 displays, in schools where READ 180 classroom implementation levels were moderate or high, the scores of READ 180 students on the SDRT-4 were significantly higher than those of control group students. This same pattern of findings was not found for Xtreme Reading schools.

CONCLUSION
The combined results from the five districts participating in the Striving Readers program who elected to use READ 180 Enterprise Edition as a reading intervention program demonstrate READ 180’s effectiveness with struggling middle and high school students in schools with high populations of minority and economically disadvantaged students. Results across four of the five districts reveal that students who participated in the READ 180 intervention showed significant gains in reading achievement scores over control group students who either received their districts’ regularly implemented instruction, attended an alternative elective at their schools, or participated in a comparison reading intervention. At one of the school districts where additional analyses were performed, there was a significant positive impact on ReadCAT Grade Equivalent scores (effect size of .26). Students in the READ 180 group outperformed the control group students by an average of 0.61 scale points, the equivalent of over half a year’s gain. Additionally, there was a significant positive impact of participation in READ 180 on struggling readers’ scores on the SRI (effect size of .21). Students in the READ 180 group outperformed the control group students by an average of 59 Lexile points.

Springfield and Chicopee Public Schools (SCPS)
In SCPS, there were 982 participants in Grade 9. The majority were unspecified minority students (71%). Twenty-one percent were students with disabilities, 4% were ELLs, and 69% were economically disadvantaged. Of these participants, 679 were included in the SDRT-4 analysis—231 in the READ 180 group, 223 in the Xtreme Reading group, and 225 in the control group (Research & Evaluation Division, 2012).

Across the five years of the Striving Readers program, struggling readers who were exposed to READ 180 demonstrated greater gains than nonparticipating students on the SDRT-4 (effect size of .11). When the model was adjusted to account for pretest reading levels, this

Graph 2.
Ohio Department of Youth Services READ 180 and Control Group Students, Grades 7–12 (N = 1,488) Performance on SRI and ReadCAT, 2006–2011

Note. Grade Equivalent scores represent the grade level and month of the typical (median) score for students. READ 180 students earned an average score similar to the 50th percentile of students in the ReadCAT’s norming group who were in their second month of sixth grade. This score was significantly higher than the control group students who earned an average score similar to the 50th percentile of students in the ReadCAT’s norming group who were in their sixth month of fifth grade. Similarly on the SRI, READ 180 students scored significantly higher than the control group students.
conducted, these findings held for subgroups of students with disabilities, as well as for those who were African American and male. In the majority of the districts, higher levels of READ 180 implementation were shown to be positively associated with higher positive impacts on students’ reading achievement. These promising results indicate that it is never too late to raise reading levels for struggling students, even those in especially challenging situations.

Graph 3. Springfield-Chicopee READ 180 and Control Group Students, Grade 9 (N = 456) Impact of READ 180 on SDRT-4 by Level of Implementation, 2006–2011

Note. The relationship between READ 180 implementation and student achievement was significant with READ 180 students evidencing greater gains over control group students when schools implemented the program with moderate to high levels of fidelity as measured by SDRT-4 Normal Curve Equivalency (NCE) scores. Averages were calculated weighted by the total number of items across years. Implementation levels: Check Pattern = Adequate or High (75–100%), Stripes = Moderate (50–74%), and Dark Blue = Low (25–49%). No schools showed No Evidence (0–24%).

APPENDIX

Measures

California Achievement Test for Reading (ReadCAT)
The ReadCAT was the primary assessment measure of student progress in ODYS. It is a nationally standardized achievement test in reading for Grades K–12. The ReadCAT is administered in a traditional workbook, multiple choice format similar to other types of tests (Iowa, Stanford, etc.). Most forms of the ReadCAT are norm-referenced tests in which the student’s score is compared to a group of students taking the test. The report includes common testing scores such as Grade Equivalents, National Percentile Rankings, and Stanines.

Reading Comprehension Section of the Iowa Tests of Basic Skills (ITBS)
The Reading Comprehension section of the ITBS was one of the assessment measures of student progress in MCS. The ITBS are standardized tests administered to students in grades kindergarten through eighth grade. There are 14 levels, and each level consists of a series of tests administered in content sections. The Reading Comprehension section assesses three types of understanding: factual questions tap students’ literal understanding of the text; inferential/interpretive questions require students to understand what is implied; and analysis and generalization questions require students to generalize about a passage’s main ideas or to analyze aspects of the author’s viewpoint or use of language.

Northwest Evaluation Association Measures of Academic Progress (MAP)
The MAP was the primary assessment measure of student progress in MPS. It was administered to all students in mathematics and reading three times a year: October, February, and June. MAP consists of computerized adaptive assessments, aligned to national and state curricula and standards, which provide immediate feedback on student progress. Every test item on a MAP assessment corresponds to a value on the RIT Scale. The RIT Scale is a curriculum scale that uses individual item difficulty values to measure growth over time and an equal interval scale that has the same meaning regardless of grade level.

Scholastic Reading Inventory (SRI)
READ 180 students in NPS took the SRI five times during each project year. SRI scores were used in the secondary
analysis of students with disabilities at NPS. READ 180 students in ODYS took the SRI 14 times over the five project years. SRI is designed to measure how well readers comprehend literary and expository texts. It focuses on the following skills: identifying details in a passage; identifying cause-and-effect relationships and sequence of events; drawing conclusions; and making comparisons and generalizations. During test administration, the computer adapts the test continually, according to student responses. Performance on SRI is reported as a Lexile® (L) scale score. The higher a student's score, the more challenging material that student is likely to be able to read and understand. Scores can range from Beginning Reader (below 200L) to Advanced Reader (above 1700L).

**Reading and Language Arts Subscales of the Stanford Achievement Test, Tenth Edition (SAT 10)**
The Reading and Language Arts subscales of the SAT 10 were the primary assessment measure of student progress in NPS. The subscales contain three subtests: Reading Comprehension, Vocabulary, and Language Arts. The SAT 10, available in 13 levels that roughly correspond to each year in school, can be used to assess children from kindergarten through high school. Vertical scaling and norm-referenced scores are used to ensure scale scores can be directly compared with other assessments. Each level of the test is broken into subtests that cover various subjects.

**Stanford Diagnostic Reading Test, Series 4 (SDRT-4)**
The SDRT-4 was the primary assessment measure of student progress in SCPS. It was administered as a pretest at the beginning of each school year and as a posttest at the end of each school year. The SDRT-4 is a group administered, multiple-choice test of reading achievement. The overall reading level is compared to the student's grade level, including month of instruction, to determine how the student is doing compared to the expected reading level. The SDRT-4 provides a grade-level equivalent for student's overall reading level, as well as their vocabulary, comprehension, and scanning skills.

**Tennessee Comprehensive Assessment Program Reading/Language Arts Test (TCAP)**
The TCAP Reading/Language Arts Test was one of the assessment measures of student progress in MCS. It is a timed, multiple-choice assessment that measures skills and progress in Reading and Language Arts. The TCAP includes Criterion-Referenced items that measure a student's performance according to specific standards, rather than to the performance of other test takers.
REFERENCES


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