Summary of 2006 Striving Readers Projects: Profile of Portland School District's Striving Readers Project and Evaluation

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Setting

In the first year of implementation, four high schools and five middle schools participated in the Portland Striving Readers grant. Before the start of the second year of implementation, the district reconfigured two of the middle schools in the study, with the students in those schools allocated to two K – 8 schools. As a result, in Year 2 (2007-08), four high schools, two middle schools, and two K-* schools participated in the grant program. All of these schools receive Title I funding and an average of 65 percent of the students in these schools are identified as low income. All 10 schools have a substantial number of students struggling to read; on average, 28 percent of the students served by these schools are reading at least two years below grade level. None of the schools had achieved Adequate Yearly Progress under No Child Left Behind at the time of the Striving Readers application in 2005. Fifteen percent of the students in the 10 schools are identified as English Language Learners, and 59 percent are non-white. Overall, Striving Readers is expected to affect more than 6,400 students and 450 teachers in the 10 participating schools.

Intervention Models

Targeted Intervention

Classroom Model as Planned: Xtreme Reading, developed by the University of Kansas' Center for Research on Learning as one level of instruction in the Content Literacy Curriculum, a framework within the Strategic Interventions Model (SIM). The Xtreme Reading program focuses on 7 reading strategies: Vocabulary, LINCing, Word Mapping, Word Identification, Self-Questioning, Visual Imagery, Paraphrasing, and Inference. Xtreme Reading's core instructional approaches include direct instruction, teacher modeling, paired student practice, and independent practice. The program provides end-of-unit assessments to track student progress.

In the first two years of the project, each Xtreme Reading class was co-taught by two teachers—one reading specialist trained on Xtreme Reading and one content specialist. In a typical high school, the two-teacher team taught Xtreme Reading and Language Arts (2 class periods) to 9th graders in the morning, and Xtreme Reading and Language Arts (2 class periods) to 10th graders

in the afternoon. In Year 3 of implementation, classroom staffing was modified so that the Xtreme Reading classes were taught by a single teacher trained on the intervention.[1]

Professional Development Model as Planned: In the first year of implementation, teachers are offered approximately 67 hours of professional development, provided by Strategic Learning Center (SLC), professional developers under contract to the model developer. The training includes 5 days of initial workshops and 6 follow-up training workshops. In the second year of implementation, new and returning teachers are offered the same 5 days of summer training, but no follow-up workshops, for a total of about 37 hours of professional development. In the third year of implementation, teachers are offered the 5 days of summer training plus 10 monthly meetings, led by the district team. Together, these forms of professional development add up to 76 hours of professional development. In all three years of implementation, teachers are offered approximately 14 hours of in-class visits from the district and 14 hours of in-class visits from the professional developers.

Context for Implementation: Xtreme Reading is offered to struggling readers in middle school and high school (grades 7–10). In Year 1 of implementation, this included 5 middle schools and 4 high schools. In Year 2 (2007-08), the district reconfigured two of the middle schools, resulting in a sample of 3 middle schools, 4 high schools, and 2 K–8 schools. Xtreme Reading is being implemented as a replacement for the district's regular English Language arts curriculum for students in middle school (grades 7 and 8) and as a supplement that replaces an elective course for students in high school (grades 9 and 10). Eligible students are students reading at least two years below grade level as measured either by the student's Oregon State Assessment Test (OSAT) total reading score or by his or her Group Reading Assessment and Diagnostic Evaluation (GRADE) total reading score. The previous year's spring OSAT score is used as the primary criterion for eligibility unless the student was new to the district or a spring OSAT score is not available. Potential targeted intervention participants with no OSAT scores are administered the GRADE to determine eligibility for random assignment. Special education students are included in the sample unless their Individual Education Plans (IEPs) prohibit them from being able to be scheduled for the Xtreme Reading classes. Students are eligible to receive Xtreme Reading for a single school year. In the first year of implementation, approximately 275 students were assigned to Xtreme Reading classes in grades 7-10. In the second year of implementation, approximately 350 students were assigned to Xtreme Reading in these same grades. The targeted intervention will be implemented for a total of four years.

Whole School Intervention

Classroom Model as Planned: The Strategic Instruction Model (SIM) Content Enhancement Routines for Teachers (SIM-CERT) is a school-wide literacy-across-the-curriculum intervention developed by the Center for Research on Learning at the University of Kansas as part of the Content Literacy Continuum (CLC). The intervention, SIM-CERT, is organized around a set of Content Enhancement Routines that teachers are trained to use in their instruction to help ensure insure mastery of critical content for all students (Level 1 of CLC) and to provide embedded learning strategy instruction in core curriculum courses (Level 2 of CLC).

[1] For more information on Xtreme Reading, please see the Xtreme Reading Intervention Profile by Abt Associates, available at http://www2.ed.gov/programs/strivingreaders/performance.html.

In Year 1 of implementation, language arts and social studies teachers received training on the use of the content enhancement routines: Unit Organizer, Framing, Vocabulary LINCing, and Concept Mastery. In Year 2 of implementation, math teachers were introduced to the Unit Organizer and Framing content enhancement routines, and science teachers were introduced to the Framing, Concept Mastery, and the new Chapter Survey routines. The professional developers also offered optional training on the Concept Anchoring, Concept Comparison, Lesson Organizer, and Course Organizer content enhancement routines.

In Portland, the whole school model is phased in over three years. In Year 1 (2006-07), language arts and social studies teachers are trained to deliver instruction in the whole school model; science and math teachers are trained in Year 2 of implementation; health, PE, and arts teachers are trained in the third year. Special education, ESL, and other subject area teachers could participate in training at their discretion.

Professional Development Model as Planned: In the first year of implementation, teachers are offered approximately 55 hours of professional development, provided by Strategic Learning Center (SLC), professional developers under contract to the model developer. In addition, teachers are offered ongoing training (approximately 18 hours), with the amount depending on which new Content Enhancement Routines school administrators elect to have their teachers trained on. After the first year of implementation, teachers are offered three days of summer training, and a varying amount of ongoing training, again depending on the Content Enhancement Routines that teachers trained on. In each of the three years of implementation, teachers receive up to 44 hours of monthly coaching visits from district literacy coaches and the professional developers.

Context for Implementation: The whole school intervention is offered to all students in participating schools, including students in grades 6-12. In Year 1, this included students in 5 middle schools and 4 high schools. In Year 2 of implementation, the district reconfigured some of the schools, resulting in a sample of 3 middle schools, 4 high schools, and 2 K – 8 schools. The total number of students receiving SIM-CERT is approximately 4,200 students in each school year. The whole school intervention will be implemented for a total of five years.

Evaluation Design

Targeted Intervention

Research Questions:

1. What is the impact of Xtreme Reading on student reading achievement for students reading at least two grades below grade level?
2. What is the impact of Xtreme Reading on student motivation and confidence in reading?

Research Design and Methods: Prior to the start of each school year, eligible students in Grades 7–10 are randomly assigned to either the Xtreme Reading group or the control group. The Xtreme Reading curriculum covers one school year; after the treatment year, students originally placed in the control group are eligible to participate in the Xtreme Reading class. The

impact of Xtreme Reading on student outcomes will be modeled using ANCOVA. Models will test the effect of Xtreme Reading on achievement score gains, controlling for pre-intervention reading levels and other covariates, as well as school and cohort effects.

Control Condition: Students reading at least two years below grade level who are not randomly assigned to the treatment group receive the district's regular English language arts curriculum (Grades 7–8) or an elective course (Grades 9–10). After one year in the control condition, if still eligible, students can enroll in the Xtreme Reading class.

Sample Size: Across Years 1—3 of implementation, the analysis of the impact on the GRADE included 319 grade 7 and 8 treatment students and 341 control students in the 5 or 6 middle/K-8 schools. In the 4 high schools, the analysis included 280 grade 9 and 10 treatment students and 333 control students.

The Year 3 evaluation report, which includes findings from the first three years of implementation, includes a sample of grade 7-8 students large enough to detect an impact equivalent to .14 on the GRADE and .13 on the OSAT, and a sample of grade 9-10 students large enough to detect an impact (in standard deviation units) equivalent to .17 on the GRADE and .21 on the OSAT.[2] Because Portland will continue to offer the intervention to new groups of students for four school years, the Year 4 report will have larger sample sizes and be able to detect smaller impacts.

Key Measures of Student Reading Outcomes (Source):

Oregon State Assessment Test (OSAT) (State Test)
Group Reading Assessment and Diagnostic Evaluation (GRADE) (External Test Publisher)

Whole School Intervention

Research Questions:

1. What is the effect of the Content Enhancement Routines on student reading achievement for all students in the school?

Research Design and Methods: An interrupted time series approach will be used to estimate the change in reading achievement observed prior to and after the implementation of the Content Enhancement Routines. These models will account for within-student repeated measures over time.. The interrupted time series evaluation design is made more rigorous with the inclusion of more than two years of post-implementation data.

Comparison Group: All schools in the study participate in the whole school intervention. Therefore, there is no comparison group.

[2] Abt Associates staff calculated the MDE by multiplying the standard error of the impact estimate by 2.8. This calculation produces the MDE for a two-tailed test with 80% power, and with an alpha level of .05, and accounts for clustering and for the inclusion of the covariates in the model.

Sample Size: All Grade 6–12 students in the 9 participating schools will be included in the evaluation of the whole school intervention, for an overall sample size of between 700 and 800 students per year.

The Year 3 evaluation report, which includes findings from the first three years of implementation, includes a sample of schools large enough to detect an impact (in standard deviation units) of the intervention on reading achievement equivalent to .55 (in standard deviation units) on the OSAT.

Key Measures of Student Reading Outcomes (Source):
Oregon State Assessment Test (OSAT) (State Test)

Year 3 Evaluation Findings

Targeted Intervention

Fidelity of Implementation of the Targeted Intervention Model: In terms of fidelity of implementation of the *professional development model*, in Year 1 of implementation, 44% of teachers had a high level of participation in the professional development activities, and 33% of teachers had a moderate level of participation. In Year 2, 89% of teachers had a high level of participation and the remaining 11% had a moderate level of participation. In the third year of implementation, 85% of teachers had a high level of participation, and 8% had a moderate level of participation.

Ratings of fidelity of implementation of the *classroom model* were based on a combination of classroom observations and staff surveys. In Year 1, 44% of the teachers implemented the Xtreme Reading classroom model with high fidelity and an additional 33% of teachers implemented the model at a medium level of fidelity. Fidelity of implementation declined somewhat in the second year of implementation, with only 25% of teachers implementing at a high level of fidelity and 38% of teachers at a medium level of fidelity. In Year 3, 50% of teachers implemented the model at a high level of fidelity and 30% of teachers implemented at a medium level.

Impact of the Targeted Interventions on Student Reading Outcomes: There was a significant impact of one year of Xtreme Reading on the reading achievement of grade 7 and 8 students on the GRADE and on the Oregon State Assessment Test. The effect sizes of the impacts were .27 and .11, respectively. There were no significant impacts of one year of treatment on the reading scores of grade 9 and 10 students; on the GRADE, the effect size was .09, and on the Oregon State Assessment Test, the effect size was -.01.

There was a significant impact of one year of treatment on reading motivation in grade 7—10 students, with an effect size of .25.

Summary of the Strengths and Weaknesses of the Impact Evaluation of the Targeted Intervention:

Strengths

- Eligibility for random assignment was determined systematically, using a predetermined cutoff score on a test of reading achievement (Oregon State Assessment Test (OSAT) or Degrees of Reading Power (DRP)).

- Random assignment was faithfully executed. The evaluators note that there were 9 students in the control group who received the intervention. This corresponds to 0.4% of the student sample, and is a minimal crossover rate.

- There is no evidence that there are other factors (e.g., other reading programs or district policies) that were implemented in ways that would undermine the evaluators' ability to attribute impacts to Xtreme Reading.

- When estimating impacts, appropriate analytic steps were taken to account for the clustering of students within schools. A pre-study measure of reading achievement is included in the models to increase the precision of the impact estimates

- The evaluation employs two reading tests as outcome measures. The Group Reading Assessment and Diagnostic Evaluation (GRADE) assesses vocabulary, comprehension, and oral language and was developed by an external test publisher. The OSAT assesses reading and literature, and was developed by the state. There is no reason to believe that students assigned to the treatment group have more experience taking the test than do the control group students, or that the test measures skills specific to the intervention, both of which could undermine confidence in the impact estimates.

- While some students were unable to participate in follow-up data collection, the level of attrition for some outcomes did not differ substantially across the treatment and control groups. This suggests that the integrity of the original randomized design was preserved, and that the treatment and control groups continue to be equivalent on all measured and unmeasured characteristics at follow-up.
  - Some grade 7-8 students (22.1% for the GRADE and 8.6% for the OSAT) and some grade 9-10 students (10.5% for the OSAT) were unable to participate in follow-up data collection; the levels of attrition did not differ substantially across the treatment and control groups (differential attrition rate for grade 7-8 students was 3.5% for the GRADE and .9% for the OSAT, and was 2.9% for grade 9-10 students for the OSAT). This amount of attrition is within the acceptable range established by WWC standards.[3]

- In the sample of grade 7-8 students, small, statistically significant differences in pre-study reading achievement (GRADE) favoring the treatment group were noted on the students included in the analysis at follow-up. The effect of this difference is mitigated

[3] For more information, please see Appendix A-Assessing Attrition Bias, of the WWC Procedures and Standards Handbook, available at: http://ies.ed.gov/ncee/wwc/help/idocviewer/Doc.aspx?docId=19&tocId=7.

by the inclusion of the pre-test measure in the statistical models estimating the impact of the program.

Weaknesses

- Some students were unable to participate in follow-up data collection on the OSAT and Motivation to Read measure, and the level of attrition for these outcomes differed across the treatment and control groups. This suggests that the integrity of the original randomized design may not have been preserved, and that treatment and control groups may no longer be equivalent on all measured and unmeasured characteristics at follow-up.
  - Some grade 9-10 students (40.4%) were unable to participate in follow-up data collection for the GRADE, and the levels of attrition differed across the treatment and control groups (differential attrition rate was 8.9%). This amount of attrition is considered high according to standards established by the WWC.
  - Some grade 7-10 students (44.2%) were unable to participate in follow-up data collection for the Motivation to Read measure. The rate of attrition was different in the treatment and control groups (differential attrition rate = 13.3%). This amount of attrition is considered high according to standards established by the WWC.

- With respect to measured characteristics, there were differences favoring the treatment group on pre-study measures of reading achievement between treatment and control group students in the analytic sample of high school students. The effects of this difference are mitigated by the inclusion of the pre-test measure in the statistical models estimating the impact of the program.

Whole School Intervention

Fidelity of Implementation of the Whole School Intervention Model: In terms of fidelity of implementation of the *professional development model*, in Year 1 none of the schools reached a high level of participation while 78% achieved a medium level of participation. The levels of participation remained similar in the second year of implementation--no schools achieved a high level of participation and 67% of schools achieved a medium level of participation. In Year 3, 10% of schools had high participation while 40% of schools had medium participation.

Ratings of fidelity of implementation of the *classroom model* were based on the observations of the implementation of the Content Enhancement Routines. In Year 1, none of the schools were rated as having a high level of implementation of the model, and 33% of schools were rated as having a medium level of implementation. In Year 2, the comparable percentages were 0% of schools at a high level of implementation and 44% of schools at a medium level. In Year 3, although there were still no schools rated at a high level of implementation, 60% of schools were rated as implementing the model at a medium level.

Impact of the Whole School Intervention on Student Reading Outcomes: There were no statistically significant impacts of the whole school intervention on student reading outcomes after one year of the intervention. The non-significant impact was .01.

Summary of the Strengths and Weaknesses of the Impact Evaluation of the Whole School Intervention:

Strengths

- *Outcome measures:* The evaluation employs the Oregon State Assessment Test (OSAT) which assesses reading and literature, and was developed by the state. There is no reason to believe that students exposed to the whole school intervention group have more experience taking the test than do the students attending the same schools in the years prior to implementation, or that the test measures skills specific to the intervention, both of which could undermine confidence in the impact estimates.

- *Attrition*: Achievement data and demographic data are included for all treatment schools in all years.

- *Analysis.* When estimating impacts, appropriate steps were taken to account for the clustering of students within schools, and for having scores from the same schools for multiple school years.

Weaknesses

- *Comparison Group.* No comparison group was used in the analysis; therefore, the study design would not meet WWC standards, with or without reservations. An interrupted time series compared the achievement of several cohorts of students in Striving Reader schools for three years prior to intervention of the Program with cohorts of students in the same schools during three years of implementation.