Portland Public Schools
Striving Readers Evaluation

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• **Grantee**: Portland Public Schools
• **Professional Developer**: University of Kansas, Center for Research on Learning
• **Evaluator**: RMC Research
Targeted Intervention Overview

• Goals:
  – To increase reading achievement
  – To increase reading motivation

• Intervention features:
  – Xtreme Reading curriculum
  – Small class size (15 students/teacher)
  – Ongoing professional development
Xtreme Reading Model

Metacognition

LINCS Vocabulary Strategy
Learning new ways to remember the meaning of vocabulary

Word Mapping Strategy
Learning new ways to remember the meaning of vocabulary

Word Identification Strategy
Learning how to pronounce multisyllabic words

Self-Questioning Strategy
Learning to ask yourself questions, make predictions, and talk about answers as you read

Visual Imagery Strategy
Learning to make pictures in your mind while reading a passage

Paraphrasing Strategy
Learning to put main ideas and details in your own words

Inference Strategy
Learning to ask and answer thoughtful questions as you read, infer, and predict information

Class Management

Xpect to ACHIEVE
Understanding and following clear guidelines that support a successful learning community

Motivation

Possible Selves
Increasing student motivation by thinking about important goals for the future

Community Learning Skills

The SCORE Skills
Social skills for cooperative groups

Talking Together
How to participate respectfully in class discussions
Xtreme Reading
8 Stages of Instruction

• Describe rationale and strategy steps
• Model strategy through think-aloud
• Verbally rehearse strategy steps
• Guided reading practice
• Paired reading practice with fluency tests
• Independent practice w/comprehension check
• Apply strategy during oral reading with teacher
• Integrate strategy with text from other classes
Eligibility for Targeted Intervention

- Students enrolled in Grades 7–10
- Students reading 2 or more years below grade level on the Oregon State Assessment Test (OSAT)
- Students without OSAT scores who are reading 2 or more years below grade level on the Group Reading Assessment and Diagnostic Evaluation (GRADE) test
Targeted Intervention Characteristics

Year 1

- 9 schools
  - 5 middle schools
  - 4 high schools
- 18 targeted intervention teachers (2 per school)

Year 2

- 9 schools
  - 1 middle school
  - 2 K–8 schools
  - 1 6–9 girls’ school
  - 1 8th grade academy
  - 4 high schools
- 18 targeted intervention teachers
### Targeted Intervention Characteristics

<table>
<thead>
<tr>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
</table>
| • 10 schools  
  – 2 middle schools  
  – 3 K-8 schools  
  – 1 6-10 girls’ school  
  – 4 high schools  
• 13 targeted intervention teachers | • 10 schools  
  – 2 middle schools  
  – 3 K-8 schools  
  – 1 6-10 girls’ school  
  – 4 high schools  
• 11 targeted intervention teachers |
Targeted Intervention

**Middle Schools**
- Xtreme Reading taught during and integrated with language arts/social studies block
- Control group students received regular LA/SS instruction with higher student-teacher ratios

**High Schools**
- Xtreme Reading was an elective course (paired with language arts or social studies)
- Control group students enrolled in a range of other electives across content areas
Targeted Intervention
Professional Development Model

- Whole group professional development in summer each year
- On-site modeling and coaching provided by professional developers (greater PD responsibility assumed by district each year)
- Monthly meetings of Xtreme teachers (Years 2 through 4)
PPS Striving Readers
Targeted Intervention

Implementation
Analysis
Targeted Intervention Implementation Analysis

- Professional Development Participation
- Classroom Implementation
- Teacher Buy-In
- Prior Experience with Xtreme
- Factors Facilitating Implementation
- Challenges to Implementation
## Professional Development Participation

<table>
<thead>
<tr>
<th>Cohort</th>
<th>N</th>
<th>Percent of Teachers Attending At Least 75% of Group Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Middle School</td>
</tr>
<tr>
<td>Year 1</td>
<td>18</td>
<td>40%</td>
</tr>
<tr>
<td>Year 2</td>
<td>18</td>
<td>89%</td>
</tr>
<tr>
<td>Year 3</td>
<td>13</td>
<td>100%</td>
</tr>
<tr>
<td>Year 4</td>
<td>11</td>
<td>57%</td>
</tr>
</tbody>
</table>
## Classroom Implementation

<table>
<thead>
<tr>
<th>School</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Middle Schools</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alpha</td>
<td>92%</td>
<td>89%</td>
<td>79%</td>
<td>86%</td>
</tr>
<tr>
<td>Beta</td>
<td>96%</td>
<td>90%</td>
<td>92%</td>
<td>93%</td>
</tr>
<tr>
<td>Gamma</td>
<td>72%</td>
<td>84%</td>
<td>93%</td>
<td>88%</td>
</tr>
<tr>
<td>Delta</td>
<td>93%</td>
<td>91%</td>
<td>94%</td>
<td>93%</td>
</tr>
<tr>
<td>Epsilon</td>
<td>94%</td>
<td>88%</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Phi</td>
<td>—</td>
<td>—</td>
<td>95%</td>
<td>91%</td>
</tr>
<tr>
<td>Zeta</td>
<td>—</td>
<td>—</td>
<td>80%</td>
<td>72%</td>
</tr>
<tr>
<td><strong>High Schools</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kappa</td>
<td>83%</td>
<td>63%</td>
<td>92%</td>
<td>69%</td>
</tr>
<tr>
<td>Lambda</td>
<td>84%</td>
<td>58%</td>
<td>82%</td>
<td>84%</td>
</tr>
<tr>
<td>Sigma</td>
<td>82%</td>
<td>78%</td>
<td>74%</td>
<td>82%</td>
</tr>
<tr>
<td>Theta</td>
<td>45%</td>
<td>—</td>
<td>80%</td>
<td>100%**</td>
</tr>
</tbody>
</table>

* Based on a maximum of 5 observations per teacher; ** This score is based on only 1 observation
# Teacher Buy-In

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Satisfaction With Professional Development &amp; Support*</th>
<th>Perceived Program Effectiveness**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Middle School</td>
<td>High School</td>
</tr>
<tr>
<td>Year 1</td>
<td>4.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Year 2</td>
<td>4.2</td>
<td>3.2</td>
</tr>
<tr>
<td>Year 3</td>
<td>4.4</td>
<td>4.0</td>
</tr>
<tr>
<td>Year 4</td>
<td>4.4</td>
<td>4.1</td>
</tr>
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</table>

* Rating Scale: 1 = Strongly disagree; 5 = Strongly agree

** Rating Scale: 1 = Not at all helpful; 5 = Very helpful
Teacher Prior Experience With Xtreme Program

<table>
<thead>
<tr>
<th>Cohort</th>
<th>N</th>
<th>Percent of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Middle School</td>
</tr>
<tr>
<td>Year 1</td>
<td>18</td>
<td>0%</td>
</tr>
<tr>
<td>Year 2</td>
<td>18</td>
<td>89%</td>
</tr>
<tr>
<td>Year 3</td>
<td>13</td>
<td>50%</td>
</tr>
<tr>
<td>Year 4</td>
<td>11</td>
<td>71%</td>
</tr>
</tbody>
</table>
Factors Facilitating Implementation

- Prior teaching experience with the program
- Support from professional developers
- Teacher receptiveness to the curriculum
- Small class sizes
- Ability to meet and exchange information with other Xtreme teachers
Challenges to Implementation

- Disorganization of Xtreme materials
- Difficulty following the program pacing guide
- Low student interest reading selections
- Need for more accessible (on site) support
PPS Striving Readers
Targeted Intervention

Impact Analysis
Years 1 through 4
Impact Analysis

Questions

• Was the Striving Readers Xtreme Reading intervention effective in improving students’ reading achievement?
  – reading achievement?
  – reading motivation?

• Were the effects of the Striving Readers Xtreme intervention similar for middle schools and high schools?
Research Design

• Random Assignment
  Eligible students were randomly assigned to treatment or control (stratified by school and grade level)

• Analytic Design
  Intent-to-treat statistical model using 2-level HLM (students within schools)
Measures

Outcome Measures

• Reading achievement
  – Group Reading Assessment and Diagnostic Evaluation (GRADE), administered each year in the fall and spring

• Motivation for reading
  – Student survey that measures motivation to read and confidence in reading skills, administered each year in fall and spring (28 items)
Measures

Level 1 Predictors

- Treatment Group
- Fall baseline scores
- Cohort
- Grade level
- Ethnicity (Black, Hispanic)
- English language proficiency
Random Assignment

Striving Readers Enrollment
Met eligibility criteria  n = 2,895

Randomized

Treatment Group
- Allocated to intervention  n = 1,453
- Excluded from study  n = 358
- Lost to follow-up  n = 364
- Analyzed  n = 756

Control Group
- Allocated to intervention  n = 1,442
- Excluded from study  n = 298
- Lost to follow-up  n = 326
- Analyzed  n = 823
## Student Analytic Sample

<table>
<thead>
<tr>
<th>Level</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 7</td>
<td>466</td>
<td>30%</td>
</tr>
<tr>
<td>Grade 8</td>
<td>356</td>
<td>22%</td>
</tr>
<tr>
<td>Grade 9</td>
<td>442</td>
<td>28%</td>
</tr>
<tr>
<td>Grade 10</td>
<td>315</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>1,579</td>
<td>100%</td>
</tr>
</tbody>
</table>
# Student Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Treatment Percent</th>
<th>Control Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>Female</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td>American Indian</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>African American</td>
<td>28</td>
<td>29</td>
</tr>
<tr>
<td>Asian</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td><strong>Special Education Services</strong></td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td><strong>ELL Services</strong></td>
<td>28</td>
<td>25</td>
</tr>
</tbody>
</table>

*Note.* Treatment total $N = 756$; Control total $N = 823$. 
## Reading Achievement Results (GRADE NCE Scores)

<table>
<thead>
<tr>
<th>Group</th>
<th>$n$</th>
<th>Impact ($\beta$)</th>
<th>S.E.</th>
<th>Effect Size</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>1,579</td>
<td>3.34</td>
<td>0.56</td>
<td>.21</td>
<td>.000</td>
</tr>
<tr>
<td>Middle School</td>
<td>822</td>
<td>4.39</td>
<td>0.69</td>
<td>.29</td>
<td>.000</td>
</tr>
<tr>
<td>High School</td>
<td>757</td>
<td>2.07</td>
<td>0.98</td>
<td>.12</td>
<td>.035</td>
</tr>
</tbody>
</table>

*Note.* Cohorts 1 through 4.
# Reading Motivation

## Results

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Impact ($\beta$)</th>
<th>S.E.</th>
<th>Effect Size</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>768</td>
<td>0.12</td>
<td>0.06</td>
<td>.13</td>
<td>.044</td>
</tr>
<tr>
<td>Middle School</td>
<td>418</td>
<td>0.13</td>
<td>0.09</td>
<td>.14</td>
<td>.136</td>
</tr>
<tr>
<td>High School</td>
<td>350</td>
<td>0.13</td>
<td>0.09</td>
<td>.15</td>
<td>.149</td>
</tr>
</tbody>
</table>

*Note.* Cohorts 2 through 4 combined.
Impact Analysis
Summary

• There was a significant impact of the Striving Readers Xtreme intervention on students’ reading achievement in the overall, middle, and high school samples.

• Although middle school students showed greater improvement in reading achievement than high school students, the effect of school level was not significant.

• The impact on reading motivation was significant only for the overall sample.
Non-Experimental Analysis

Additional Finding

• There was significant school level variability in treatment effects in both the overall analysis and in the middle school analysis.

Question

• To what extent do teacher level variables explain school level variability in treatment effects?
Analytic Design

- Same Level 1 model used in the impact analysis
- Models were run separately by implementation year (due to changes in staffing from year to year)
- There was no school level variability in treatment in Years 2 and 4 so the model was run only for Years 1 and 3.
- Teacher level variables aggregated up to school level added in Level 2
  - Percent fidelity of implementation
  - Percent of PD training attended
  - Years of teaching experience
Non-Experimental Results

- Variability in student outcomes was partially explained by fidelity of classroom implementation in Year 1 but not in Year 3.

- Teaching experience and amount of professional development were not related to student outcomes.