

Xtreme Reading

Intervention Report | Adolescent Literacy Topic Area

WHAT WORKS CLEARINGHOUSE™

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Literacy skills are critical to students’ academic achievement and for setting them on a path to successful high school graduation and readiness for college and careers. *Xtreme Reading* is a supplemental literacy curriculum designed to improve the literacy skills of struggling students in grades 6 to 12. The curriculum is primarily designed to help students improve their vocabulary, decoding, fluency, and reading comprehension skills. To ensure a productive learning environment, students initially learn social skills associated with creating a supportive learning community, including how to participate in certain class activities (for example, whole-group discussion, small-group work, partner work, transitions). They also participate in a motivational program whereby they discuss their hopes

and dreams for the future and set personal goals related to reading and other life areas. The *Xtreme Reading* program includes teacher-led whole-group instruction, cooperative group work, paired practice, and independent practice.¹

This What Works Clearinghouse (WWC) intervention report, part of the WWC’s Adolescent Literacy topic area, explores the effects of *Xtreme Reading* on student literacy achievement and comprehension (including reading comprehension and vocabulary skills). The WWC identified four studies of *Xtreme Reading*, two of which meet WWC standards. The evidence presented in this report is from studies of the effects of *Xtreme Reading* on ninth-grade students—including 81% non-White and 19% White students—from largely urban and diverse school districts.

What Happens When Students Participate in *Xtreme Reading*?²

The evidence indicates that implementing *Xtreme Reading* has no discernible effects on comprehension or general literacy achievement.

Findings on *Xtreme Reading* from two studies that meet WWC standards are shown in Table 1. The table reports an effectiveness rating, an improvement index, and the number of studies and students that contributed to the findings. The effectiveness rating is based on the quality of the designs used in studies, whether the findings are favorable or unfavorable for the intervention, and the number of studies that tested the intervention. See Box 1 for more information on interpreting effectiveness ratings.

In order to help readers judge the practical importance of an intervention’s effect, the WWC translates findings across

studies into an “improvement index” by averaging findings that meet WWC standards within the same outcome domain. The improvement index can be interpreted as the expected change in percentile rank for an average comparison group student if that student had received the intervention. For example, an improvement index of +2 means that the expected percentile rank of the average comparison group student would increase by 2 points if the student received the *Xtreme Reading* program. A positive improvement index does not necessarily mean the estimated effect is statistically significant. Results for each individual outcome measure within domains are shown in Table 4.

The evidence presented in this report is based on available research. Findings and conclusions could change as new research becomes available.

Table 1. Summary of findings on *Xtreme Reading* from studies that meet WWC standards

Outcome domain	Effectiveness rating	Study Findings	Evidence meeting WWC standards (version 4.0)	
		Improvement index (percentile points)	Number of studies	Number of students
Comprehension	No discernible effects	+2	1	2,329
General literacy achievement	No discernible effects	0	2	1,870

Note: For more information about outcome measures, see study descriptions in Tables 6 and 8. The effects of *Xtreme Reading* are not known for other outcomes within the Adolescent Literacy topic area, including alphabets, reading fluency, writing conventions, writing productivity, and writing quality.

BOX 1. HOW THE WWC REVIEWS AND DESCRIBES EVIDENCE

The WWC evaluates evidence based on the quality and results of reviewed studies. The criteria the WWC uses for evaluating evidence are defined in the [Procedures and Standards Handbooks](#) and the [Review Protocols](#). The studies summarized in this report were reviewed under WWC Standards (version 4.0) and the Adolescent Literacy topic area protocol (version 4.0).

To determine the effectiveness rating, the WWC considers what methods each study used, the direction of the effects, and the number of studies that tested the intervention. The higher the effectiveness rating, the more certain the WWC is about the reported results and about what will happen if the same intervention is implemented again. The following key explains the relationship between effectiveness ratings and the statements used in this report:

Effectiveness Rating	Rating interpretation	Description of the evidence
Positive (or negative) effects	The intervention is <i>likely</i> to change an outcome	Strong evidence of a positive (or negative) effect, with no overriding contrary evidence
Potentially positive (or negative) effects	The intervention <i>may</i> change an outcome	Evidence of a positive (or negative) effect with no overriding contrary evidence
No discernible effects	The intervention <i>may result in little to no change</i> in an outcome	No affirmative evidence of effects
Mixed effects	The intervention <i>has inconsistent effects</i> on an outcome	Evidence includes studies in at least two of these categories: studies with positive effects, studies with negative effects, or more studies with indeterminate effects than with positive or negative effects

How is Xtreme Reading Implemented?

The following section provides details of how districts and schools can implement *Xtreme Reading*. This information can help educators identify the requirements for implementing *Xtreme Reading* and determine whether implementing this intervention would be feasible in their districts or schools. Information on *Xtreme Reading* presented in this section comes from the developer's website and studies that meet WWC standards (Kemple et al., 2008; Sprague et al., 2012).

- **Goal:** The main goal of *Xtreme Reading* is to help students improve their vocabulary decoding, fluency, and reading comprehension skills such that they can succeed in their general secondary education courses. The bulk of the program focuses on reading comprehension. In order to ensure that students are productive learners, they are also taught basic social skills for participating in class appropriately and they set personal goals for their learning in the school year.
- **Target population:** The program is designed for struggling readers in grades 6 to 12 whose reading skills are 2 or more years below grade level. Students must be reading at least at the fourth-grade level.
- **Method of delivery:** *Xtreme Reading* is a supplemental curriculum that is typically offered in addition to students' regular literacy instruction. In most schools, it replaces an elective class. The program is designed for a class of

Comparison condition: The two studies of *Xtreme Reading* that contribute to this intervention report included three distinct comparison groups. Two of these were business-as-usual comparison groups in which students did not receive supplemental literacy instruction. They participated in a regularly scheduled elective class, such as band or art, instead of the *Xtreme Reading* class. In the third comparison group, students received the *READ 180*® curriculum as supplemental literacy instruction instead of a regularly scheduled elective class.

12 to 15 students. The assigned teacher, ideally an English language arts teacher, reading teacher, special education teacher, social studies teacher, or other interested intervention teacher, explicitly teaches literacy strategies and social skills using a prescriptive instructional approach that includes step-by-step instructional materials and daily plans.

- **Frequency and duration of service:** The *Xtreme Reading* program is designed to be delivered daily in a 45-minute class period. It can be adapted to a 90-minute schedule.
- **Intervention components:** *Xtreme Reading* includes several key components and features including instruction in advanced literacy strategies and social skills. Key components and features are described in Table 2.

Table 2. Components of *Xtreme Reading*

Key component	Description
Instruction in literacy strategies	The <i>Xtreme Reading</i> program includes instruction in advanced decoding skills, fluency, vocabulary, and reading comprehension using a number of instructional strategies. The Word Identification Strategy, which focuses on decoding, encompasses a variety of approaches to decode multi-syllable words, especially words that students encounter in secondary textbooks. Fluency instruction initially takes place in coordination with the Word Identification strategy and continues through the year. The Word Mapping strategy, which is focused on vocabulary, is aimed at teaching students new ways to determine and remember the meaning of the words and word parts (morphemes). Four strategies—Self-Questioning, Paraphrasing, Inferencing, and Visual Imagery—focus on reading and listening comprehension. The Self-Questioning Strategy enables students to ask themselves questions while reading, make predictions, and talk about answers to their questions. The Paraphrasing Strategy enables students to find and state the main idea and details for each paragraph as they read. The Inference Strategy enables students to analyze questions associated with a passage. When a question requires them to make an inference about information that is not in the passage, they look for clues and create an answer based on those clues. The Visual Imagery Strategy enables students to create pictures in their minds of the people, setting, and events described in a reading passage.
Instruction in social skills	The <i>Xtreme Reading</i> program includes explicit instruction in social skills to create and maintain a positive learning community within the classroom. In a program component called Xpect to Achieve, the teacher explains expected behaviors in a variety of classroom activities (discussions, paired work, small-group work, independent work), and teaches two units (Talking Together and the SCORE Skills) to ensure students acquire the needed social skills for <i>Xtreme Reading</i> activities. Then, while working through the Possible Selves unit, students identify their hopes, expectations, and fears as well as create and work toward goals related to reading and other life areas.
Instructional procedures	Teachers are trained to implement highly structured methods to support the learning strategies. Control is incrementally relinquished to students as they progress through the following eight stages: description, modeling, verbal practice, guided practice, paired practice, independent practice, differentiated instruction, and integration and generalization. The teacher starts by describing and modeling a strategy, then moves to shared work with the students providing verbal explanations and guidance. The teacher then shifts more responsibility to students through activities involving paired practice between students and independent practice. The seventh stage, differentiated instruction, offers additional support to students who struggle with the strategy, while providing others with varied opportunities for practice. By the eighth stage, integration and generalization, students work independently to gain an understanding of the application of the strategy within and outside the <i>Xtreme Reading</i> classroom.
Curriculum materials	The <i>Xtreme Reading</i> curriculum kit includes (1) an instructor notebook for use in teaching the Xpect to Achieve component and each of the literacy strategies; (2) a set of multimedia materials for instructors, including materials to use for remote learning; (3) 15 student passages books for the decoding and comprehension strategies; and (4) 15 student workbooks. A typical lesson consists of a combination of the following activities: (1) a short warm-up; (2) a whole-class lesson, in which the teacher describes or models a strategy, the students and teacher practice a strategy together, or both; (3) student practice, where students practice independently or in pairs while the teacher walks around the room and provides feedback; (4) word activities, where students learn and practice vocabulary strategies; (5) guided reading, where the teacher and students read a novel together; and (6) a short wrap-up, which includes a review of the day's lesson and a preview of the next day's lesson.
Teacher training	<p>The <i>Xtreme Reading</i> professional development model typically includes initial training for teachers, ongoing in-class mentoring by coaches, and workshops on specific routines. Five days of workshops are recommended either in the summer or spread across the school year. Schools often plan 3 workshop days in the summer and 2 days during the remainder of the school year. Teachers are trained to implement highly structured methods to support the learning strategies.</p> <p>Teacher training differed slightly across the two studies included in this intervention report. In Kemple et al. (2008), teachers received 5 days of summer training, 2 days of booster training during the year, and three on-site coaching visits that lasted 2 days each. In Sprague et al. (2012), teachers received 3 days of summer training in the first study year, and 2 days in the second study year; teachers also attended 4 to 5 full days of additional workshops during the year.</p>

What Does the *Xtreme Reading* Program Cost?

This preliminary list of costs is not designed to be exhaustive; rather, it provides educators an overview of the

major resources needed to implement the *Xtreme Reading* program. The program costs described in Table 3 are based on the information available as of June 2020.

Table 3. Cost ingredients for *Xtreme Reading*

Cost ingredients	Description	Source of funding
Personnel	Typically, this is a supplemental program taught by existing teachers already employed in the school or district. Example types of teachers who have successfully taught the program are English language arts teachers, reading teachers, special education teachers, and intervention teachers. The <i>Xtreme Reading</i> professional development model includes training for teachers and ongoing in-class mentoring by coaches. Five days of workshops are recommended during the year. Workshop costs typically are about \$1,500 per day plus expenses for a certified professional developer.	Schools provide time for teachers to participate in the training and to deliver the intervention. School districts typically cover the costs of <i>Xtreme Reading</i> .
Facilities	The intervention is typically implemented in the students' regular classrooms.	School districts or schools provide the classroom facilities.
Equipment and materials	A complete kit for using the <i>Xtreme Reading</i> program in one classroom, including one teacher and 15 students, costs \$2,200. The kit includes (1) an instructor notebook for use in teaching the Xpect to Achieve component and each of the literacy strategies; (2) a set of multimedia materials for instructors, including materials to use for remote learning; (3) 15 student passages books for the decoding and comprehension strategies; and (4) 15 student workbooks. If the course is being taught for more than one class period per day by the same teacher (which is recommended), schools will need 15 student workbooks for each class period, and this is an added cost. Additional student workbooks can be purchased for future years. Schools can purchase a digital PDF version of the workbook to use in a remote learning environment. The student workbooks are the only program materials that will need to be replaced every year.	School districts usually purchase <i>Xtreme Reading</i> materials. Funding typically comes from curriculum budget, including federal Title I accounts.

For More Information:

About *Xtreme Reading*

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About the cost of the intervention

Web: <https://sim.ku.edu/xtreme-reading>.

All cost data were obtained from the program developer.

Research Summary

The WWC identified four studies that investigated the effectiveness of *Xtreme Reading* (Figure 1):

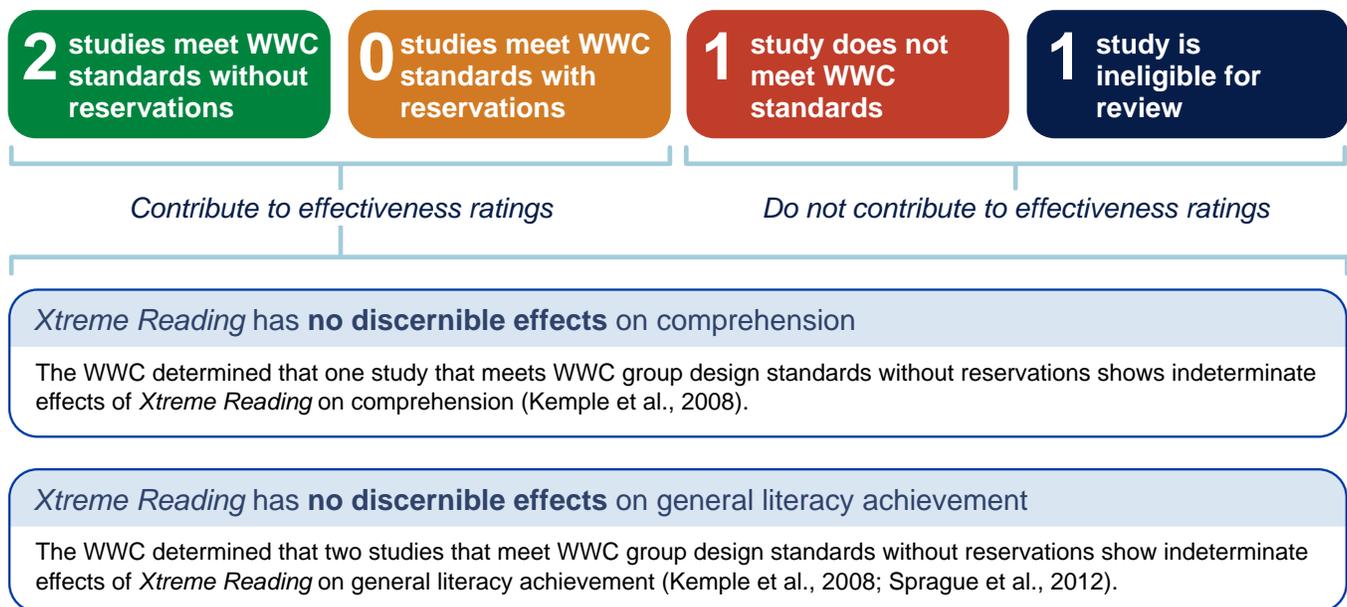
- 2 studies meet WWC group design standards without reservations
- 1 study does not meet WWC group design standards
- 1 study is ineligible for review

The WWC reviews findings on the intervention's effects on eligible outcome domains from studies that meet standards, either with or without reservations. Based on this review, the WWC generates an effectiveness rating, which summarizes how the intervention impacts, or changes, a particular outcome domain. The WWC reports additional supplemental findings, such as those reported separately for each

student cohort in Kemple et al. (2008), on the WWC website (<https://whatworks.ed.gov>). These supplemental findings and findings from studies that either do not meet WWC standards or are ineligible for review do not contribute to the effectiveness ratings.

The two studies of *Xtreme Reading* that meet WWC group design standards reported findings on comprehension and general literacy achievement outcomes. No other findings in the studies meet WWC group design standards within any outcome domain included in the Adolescent Literacy topic area.³ Citations for the three studies reviewed for this report are listed in the References section, which begins on page 11. A citation for the study that is ineligible for review and the reason the WWC determined it was ineligible are also listed in the References section

Figure 1. Effectiveness ratings for studies



Main Findings

Table 4 shows the findings from the two studies of *Xtreme Reading* that meet WWC standards. The table includes WWC calculations of the performance of the intervention group relative to the comparison group in terms of the mean differences and effect size. The effect size is a standardized measure of the effect of an intervention on outcomes, representing the average change expected for all individuals who are given the intervention (measured in standard deviations of the outcome measure). For the mean difference and effect size values, a positive number favors the intervention group

and a negative number favors the comparison group. A positive or negative improvement index does not necessarily mean the estimated effect is statistically significant.

Based on findings from one study that meets WWC standards and includes 2,329 students, the effectiveness rating for the comprehension domain is *no discernible effects*. Based on findings from two studies that meet WWC standards and include 1,870 students, the effectiveness rating for the general literacy achievement domain is *no discernible effects*.

Table 4. Findings by outcome domain from studies of *Xtreme Reading* that meet WWC standards

Measure (study)	Study sample	Sample size	Mean (standard deviation)		WWC calculations			p-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Group Reading Assessment and Diagnostic Evaluation (GRADE): Comprehension subtest (Kemple et al., 2008) ^a	Students in grade 9	2,329	90.20 (10.40)	89.70 (10.20)	0.50	0.06	+2	.17
GRADE: Vocabulary subtest (Kemple et al., 2008) ^a	Students in grade 9	2,329	93.60 (10.50)	93.30 (10.40)	0.30	0.03	+1	.52
Outcome average for comprehension (Kemple et al., 2008) ^a						0.04	+2	Not statistically significant
State test scores, English language arts (ELA; Kemple et al., 2008) ^a	Students in grade 9	1,191	0.10 (0.95)	0.03 (0.92)	0.07	0.08	+3	.12
Outcome average for general literacy achievement (Kemple et al., 2008) ^a						0.08	+3	Not statistically significant
Stanford Diagnostic Reading Test, fourth edition (SDRT-4; Sprague et al., 2012) ^b	Students in grade 9 (vs. <i>Read 180</i>)	454	21.95 (13.38)	24.14 (13.37)	-2.19	-0.16	-6	.08
SDRT-4 (Sprague et al., 2012) ^b	Students in grade 9 (vs. business-as-usual)	448	21.95 (13.38)	21.75 (13.38)	0.20	0.02	+1	.85
Outcome average for general literacy achievement (Sprague et al., 2012) ^b						-0.07	-3	Not statistically significant
Outcome average for general literacy achievement across all studies						0.00	0	

Notes: Some statistics may not sum as expected due to rounding.

^a For Kemple et al. (2008), the intervention and comparison group standard deviations were provided by authors in response to a WWC author query. This study is characterized as having an indeterminate effect on the comprehension domain because the WWC-calculated study average effect size is not statistically significant. The study is characterized as having an indeterminate effect on the general literacy achievement domain because the estimated effect is not statistically significant.

^b For Sprague et al. (2012), the WWC calculated the p-value for the *Read 180* comparison because the authors did not compare *Xtreme Reading* to *Read 180*. This study is characterized as having an indeterminate effect on the general literacy achievement domain because the WWC-calculated study average effect size is not statistically significant. For more information, please refer to the [WWC Procedures Handbook](#), version 4.0, page 22.

In What Context Was *Xtreme Reading* Studied?

The following section provides information on the setting of the two studies of *Xtreme Reading* that meet WWC standards, and a description of the participants in the research. This information can help educators understand

the context in which the studies of *Xtreme Reading* were conducted and determine whether the program might be suitable for their setting.

WHERE THE STUDY WAS CONDUCTED

2 studies, 3,008 students in at least 39 high schools in 12 districts in Georgia, Maryland, Massachusetts, Nebraska, New York, South Carolina, Texas, Utah, and Virginia.

Race



Ethnicity

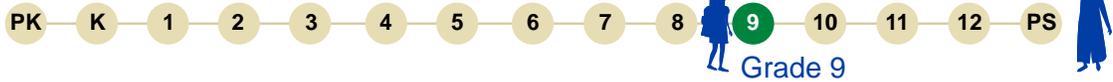


Gender: 51% Female
49% Male

English Learners: 4%

Free & Reduced-Price
Lunch: 54%

Grades



Details of Each Study that Meets WWC Standards

This section presents details for each study of *Xtreme Reading* that meets WWC standards. These details include the full study reference, findings description, findings summary, and description of study characteristics. A summary of domain findings for each study is presented below, followed by a description of the study characteristics. These study-level details include contextual information about the study setting, methods, sample, intervention group, comparison group, outcomes, and implementation details. For additional information, readers should refer to the original studies.

Research details for Kemple et al. (2008)

Kemple, J. J., Corrin, W., Nelson, E., Salinger, T., Herrmann, S., & Drummond, K. (2008). *The Enhanced Reading*

Opportunities Study: Early impact and implementation findings (NCEE 2008-4015). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Retrieved from <https://eric.ed.gov/?id=ED499778>

Findings from Kemple et al. (2008) show evidence of indeterminate effects of *Xtreme Reading* in the comprehension and general literacy domains (Table 5). The findings and research details summarized for this study come from three related citations, including the primary study listed above. See the References section, which begins on page 11, for a list of all related publications.

Table 5. Summary of findings from Kemple et al. (2008)

Meets WWC Group Design Standards Without Reservations				
Outcome domain	Sample size	Study findings		
		Average effect size	Improvement index	Statistically significant
Comprehension	2,329 students	0.04	+2	No
General literacy achievement	1,191 students	0.08	+3	No

Table 6. Description of study characteristics for Kemple et al. (2008)

WWC evidence rating	Meets WWC Group Design Standards Without Reservations. This is a randomized controlled trial with low attrition. For more information on how the WWC assigns study ratings, please see the WWC Procedures and Standards Handbooks (version 4.0) and WWC Standards Briefs , available on the WWC website.
Setting	The study was conducted in 10 school districts across nine states in the United States.
Methods	The study randomly assigned eligible ninth-grade students within 17 schools to receive <i>Xtreme Reading</i> or to the comparison group. To be eligible for the study, students had to have reading proficiencies 2 to 5 years below the ninth-grade level based on the Group Reading Assessment and Diagnostic Examination (GRADE). The study included two cohorts of ninth-grade students: Cohort 1 was formed in the 2005–06 school year and consisted of 965 students randomly assigned to the intervention group and 750 students randomly assigned to the comparison group. Cohort 2 was formed in the 2006–07 school year and consisted of 963 students randomly assigned to the intervention group and 741 students randomly assigned to the comparison group. The sample loss after random assignment (attrition) was within the acceptable threshold for the review. At the individual level, the overall attrition rate ranged from 32% to 65% depending on the outcome measure, and differential attrition ranged from 0 and 3 percentage points.
Study sample	Across the 17 high schools and both student cohorts, the analytic sample for comprehension outcomes included 2,329 ninth-grade students. The analytic sample for general literacy achievement included 1,191 of these students for whom scores on the English language arts state assessment were obtainable from school administrative records. Of the 2,329 students in the analytic sample for comprehension outcomes, 50% spoke another language besides English at home: 44% were African American, 17% were White, 6% were another race, and 33% identified as Hispanic; and 51% were male. Similar information about the composition of the analytic sample for the general literacy achievement domain was not available.
Intervention group	The <i>Xtreme Reading</i> program was implemented as a yearlong supplemental course in place of a ninth-grade elective class and was offered in addition to students' regular English language arts classes. The program was scheduled for a minimum of 225 minutes of classroom instruction per week via a 45-minute class every day or a 75- to 90-minute class meeting every other day. Within each participating high school, an experienced, full-time English language arts or social studies teacher volunteered and was subsequently trained to implement the <i>Xtreme Reading</i> program to both student cohorts in the study. This teacher then taught four <i>Xtreme Reading</i> classes with 12 to 15 students per class.

Comparison group	Students in the comparison group received the standard English language arts instruction and continued their participation in a regularly scheduled elective class, such as career and technical education, art, physical education, health, or foreign language. They did not receive supplemental English language arts instruction.
Outcomes and measurement	<p>Study authors reported findings on three outcome measures that are eligible for review under the Adolescent Literacy topic area. Two of these outcome measures were reviewed within the comprehension domain: Comprehension and Vocabulary subtests of the GRADE. The third eligible outcome measure was based on each state's end-of-year assessment in English language arts and was reviewed within the general literacy achievement domain.</p> <p>The two GRADE subtests were administered as baseline and follow-up assessments for both cohorts. All schools in both cohorts administered follow-up assessments at the end of the ninth grade.</p> <p>Students' end-of-year test scores on the English language arts assessment were obtained from schools' administrative records and linked to the students in the analytic sample. The content of the English language arts state assessments differed across the nine states. The study authors standardized and pooled English language arts scores across all participating districts.</p> <p>Findings for both outcome measures were reported as pooled findings across both cohorts (main findings) and separately by cohort (supplemental findings). Findings for other subgroups of interest were ineligible for review because the analytic samples included students in a different set of 17 schools who received <i>Reading Apprenticeship</i>[®] instead of <i>Xtreme Reading</i> and were included in the intervention group. In an author query, the WWC requested subgroup findings including only students in the 17 schools where <i>Xtreme Reading</i> was offered, but the authors did not provide these data to the WWC. Summaries of the reviewed supplemental findings are available on the WWC website (https://whatworks.ed.gov). The supplemental findings do not factor into the intervention's rating of effectiveness.</p> <p>All other outcome measures the authors collected during the study were ineligible for review, including reading behavior measures created from student survey data; outcomes from a teacher survey; and a number of findings drawn from administrative data, including course grades, credit accumulation, attendance, and disciplinary infractions.</p>
Additional implementation details	Within each high school assigned to <i>Xtreme Reading</i> , an experienced, full-time English language arts or social studies teacher volunteered to teach the program to both student cohorts. For the first year of the study, the 17 <i>Xtreme Reading</i> teachers received one 5-day summer training before the start of the study year, one 2-day booster training during the year, and three 2-day on-site coaching visits. Of the 17 teachers who volunteered to administer the <i>Xtreme Reading</i> program at the start of the first study year, seven were replaced by the end of the first year. For the second year of the study, newly recruited <i>Xtreme Reading</i> teachers attended a 2-day training immediately prior to a 3-day training for all <i>Xtreme Reading</i> teachers during the summer before the start of the 2006–07 school year. All <i>Xtreme Reading</i> teachers also received a 2-day booster training and three 2-day on-site coaching visits during the second study year. No <i>Xtreme Reading</i> teachers were replaced during the second study year. In both study years, district coordinators were invited to observe the trainings to become familiar with the program in case they had to provide technical assistance or other support to <i>Xtreme Reading</i> teachers during the study period.

Research details for Sprague et al. (2012)

Sprague, K., Zaller, C., Kite, A., & Hussar, K. (2012). Springfield-Chicopee School Districts Striving Readers (SR) Program final report years 1-5: Evaluation of implementation and impact. Providence, RI: The Education Alliance at Brown University. Retrieved from <https://eric.ed.gov/?id=ED600926>.

Findings from Sprague et al. (2012) show evidence of an indeterminate effect of *Xtreme Reading* in the general literacy achievement domain (Table 7).

Table 7. Summary of findings from Sprague et al. (2012)

Meets WWC Group Design Standards Without Reservations				
Study findings				
Outcome domain	Sample size	Average effect size	Improvement index	Statistically significant
General literacy achievement	679 students	-0.07	-3	No

Table 8. Description of study characteristics for Sprague et al. (2012)

WWC evidence rating	Meets WWC Group Design Standards Without Reservations. This is a randomized controlled trial with low attrition.
Setting	The study was conducted in five schools within two school districts, Chicopee and Springfield, in western Massachusetts.
Methods	<p>The study was conducted with five separate cohorts across 5 academic years. In each of the 5 study years, ninth-grade students in five study schools were screened for eligibility before random assignment. Students at least two—but less than four—grade levels behind in reading performance for their grade level were selected to participate in the study. Students were excluded from the sample if (1) they had an Individualized Education Program that specified reading supports not compatible with <i>Xtreme Reading</i>; (2) they lacked sufficient English language proficiency; (3) their parents opted them out of the study; (4) they were enrolled in an off-campus evening school; (5) they were deemed not to be a “struggling reader” based on grade history and past scores on the English language arts state test; or (6) they could not be located in school enrollment records.</p> <p>Across the 5 study years, the authors randomly assigned 1,661 eligible ninth-grade students from five schools to one of three conditions: 547 students were assigned to receive <i>Xtreme Reading</i>, 548 students were assigned to receive <i>READ 180</i>[®], and 566 students were assigned to a business-as-usual comparison condition. Students were randomly assigned within blocks depending on whether they were in special education, were English language learners, or neither. In each of the 5 study years, the study authors also randomly assigned one teacher in each of the five schools to each of the three conditions. The authors separately contrasted the literacy outcomes of students in the <i>Xtreme Reading</i> condition to those of students in the <i>READ 180</i>[®] and business-as-usual conditions. The sample loss after random assignment (attrition) was within the acceptable threshold for the review. At the student level, the overall attrition rate ranged from 59% to 60% depending on the study condition, and differential attrition was 1 percentage point for all study conditions.</p>
Study sample	<p>Across the 5 study years, the analytic samples for the three study conditions —<i>Xtreme Reading</i>, <i>READ 180</i>[®], and business-as-usual condition—included 223, 231 and 225 ninth-grade students, respectively, with reading proficiencies 2 to 4 years below the ninth-grade level.</p> <p>Of the 679 students in the analytic sample, 73% were eligible for free or reduced-price lunch, 26% were White, and 20% were in special education. A small percentage (4%) of the students were English learners, and more than half (57%) were female.</p>
Intervention condition	The <i>Xtreme Reading</i> program was offered to students as a supplement to their standard English language arts course. Class size was capped at 15 students, and the class was taught by the teacher randomly assigned to administer the <i>Xtreme Reading</i> program in each study school in each of the 5 study years. The class took place for 45 minutes per day, sometimes within a 90-minute block of English language arts courses.
Comparison condition	<p>Students in the business-as-usual comparison condition received the standard English language arts instruction provided in the regular school curriculum and continued their participation in any regularly scheduled elective class, such as career and technical education, art, physical education, health, or foreign language. They did not receive supplemental English language arts instruction.</p> <p>Students in the <i>READ 180</i>[®] condition received the <i>READ 180</i>[®] curriculum as a supplement to the standard English language arts course. The class was taught by the teacher randomly assigned to administer the <i>Read 180</i>[®] curriculum in each study school in each of the 5 study years. The class took place for 90 minutes per day, paced to complete the <i>Read 180</i>[®] curriculum over 125 to 145 school days.</p>
Outcomes and measurement	<p>Study authors reported findings on one outcome measure eligible for review under the Adolescent Literacy topic area. The measure of general literacy achievement in this study was the Stanford Diagnostic Reading Test, fourth edition (SRDT-4). Students took the SDRT-4 assessment in the spring of each study year. Students’ eighth-grade test results from the Massachusetts Comprehensive Assessment System (MCAS) in English language arts were used as a baseline covariate in the analysis of the SDRT-4 outcomes.</p> <p>The study also used the MCAS to assess the combined impact of <i>Xtreme Reading</i> and <i>READ 180</i>[®] on student literacy. Because the finding was not disaggregated by literacy intervention condition, it is ineligible for the current review.</p>
Additional implementation details	The developers of the <i>Xtreme Reading</i> program trained teachers on learning strategies for students. The professional development model included initial training, ongoing in-class mentoring by developers, and workshops on specific routines. The professional development varied across study years. Teachers received 3 days of summer training in the first study year, which was shortened to 2 days in the second study year. Administrators held a 1-day summer meeting to support teachers in the first study year only. Developers also conducted monthly in-class mentoring with teachers during both study years. Teachers also attended 4 to 5 full days of additional workshops, depending on the study year.

References

Studies that meet WWC group design standards without reservations

Kemple, J. J., Corrin, W., Nelson, E., Salinger, T., Herrmann, S., & Drummond, K. (2008). *The Enhanced Reading Opportunities Study: Early impact and implementation findings* (NCEE 2008-4015). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Retrieved from <https://eric.ed.gov/?id=ED499778>

Additional sources:

Corrin, W., Somers, M.-A., Kemple, J., Nelson, E., & Sepanik, S. (2009). *The Enhanced Reading Opportunities Study: Findings from the second year of implementation* (NCEE 2009-4036). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Retrieved from <https://eric.ed.gov/?id=ED503380>

Somers, M. A., Corrin, W., Sepanik, S., Salinger, T., Levin, J., & Zmach, C. (2010). *The Enhanced Reading Opportunities study final report: The impact of supplemental literacy courses for struggling ninth-grade readers* (NCEE 2010-4021). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Retrieved from <https://eric.ed.gov/?id=ED511811>

Sprague, K., Zaller, C., Kite, A., & Hussar, K. (2012). *Springfield-Chicopee School Districts Striving Readers (SR) Program final report years 1-5: Evaluation of implementation and impact*. Providence, RI: The Education Alliance at Brown University. Retrieved from <https://eric.ed.gov/?id=ED600926>

Study that does not meet WWC group design standards

Faddis, B. J., Beam, M., Maxim, L., Vale Gandhi, E., Hahn, K., & Hale, R. (2011). *Portland Public Schools' Striving Readers Program: Year 5 evaluation report*. Portland, OR: RMC Research Corporation. Retrieved from <https://eric.ed.gov/?id=ED600852> The study does not meet WWC standards because it is a compromised randomized controlled trial, and the analytic intervention and comparison groups do not satisfy the baseline equivalence requirement.

Study that is ineligible for review using the Adolescent Literacy review protocol

Boudah, D. J. (2018). *Evaluation of intensive reading strategies intervention for low-performing adolescents with and without learning disabilities. Insights into Learning Disabilities 15(2)*, 149-159. Retrieved from <https://eric.ed.gov/?id=EJ1203396> The study is ineligible for review because it does not use a study design eligible for review under the WWC's group design standards, regression discontinuity design standards, or pilot single-case design standards, as described in the [WWC Standards Handbook \(Version 4.0\)](#).

Endnotes

¹The descriptive information for this intervention comes from the intervention website: <https://sim.ku.edu/xtreme-reading>. The What Works Clearinghouse (WWC) requests that developers review the intervention description sections for accuracy from their perspective. The WWC provided the developer with the intervention description in June 2020 and the WWC incorporated feedback from the developer. Further verification of the accuracy of the descriptive information for this intervention is beyond the scope of this review.

²The literature search reflects documents publicly available by June 2020. Reviews of the studies in this report used the standards from the WWC Procedures and Standards Handbook (version 4.0) and the Adolescent Literacy review protocol (version 4.0).

³The effects of *Xtreme Reading* are not known for other outcome domains within the Adolescent Literacy topic area, including alphabets, reading fluency, writing conventions, writing productivity, and writing quality.

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