

# What Works Clearinghouse



## Reading Plus®

### Program Description<sup>1</sup>

*Reading Plus*® is a web-based reading intervention that uses technology to provide individualized scaffolded silent reading practice for students in grade 3 and higher. *Reading Plus*® aims to develop and improve students' silent reading fluency, comprehension, and vocabulary. *Reading Plus*® is designed to adjust the difficulty of the content and duration of reading

activities so that students proceed at a pace that corresponds to their reading skill level. The intervention includes differentiated reading activities, computer-based reading assessments, tools to monitor student progress, ongoing implementation support, and supplemental offline activities.

### Research<sup>2</sup>

One study of *Reading Plus*® that falls within the scope of the Adolescent Literacy review protocol meets What Works Clearinghouse (WWC) evidence standards with reservations. The study included 13,128 students, ranging from grade 5 through grade 9, who attended schools in Miami-Dade County in Florida.<sup>3</sup>

the comprehension domain. The one study that meets WWC evidence standards with reservations did not examine the effectiveness of *Reading Plus*® on adolescent learners in the alphabetic, reading fluency, or general literacy achievement domains.

Based on one study, the WWC considers the extent of evidence for *Reading Plus*® on adolescent learners to be small for

### Effectiveness

*Reading Plus*® was found to have potentially positive effects on comprehension for adolescent learners.

	Alphabetic	Reading fluency	Comprehension	General literacy achievement
Rating of effectiveness	na	na	Potentially positive effects	na
Improvement index	na	na	+2 percentile points	na

na = not applicable

1. The descriptive information for this program was obtained from a publicly available source: the developer's website (<http://www.readingplus.com/>, downloaded December 2009). The WWC requests developers to review the program description sections for accuracy from their perspective. Further verification of the accuracy of the descriptive information for this program is beyond the scope of this review. The literature search reflects documents publicly available by March 2010.
2. The studies in this report were reviewed using WWC Evidence Standards, Version 2.0 (see the WWC Procedures and Standards Handbook, Chapter III), as described in protocol Version 2.0.
3. The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.

## Additional program information

### Developer and contact

*Reading Plus*® was developed by Taylor Associates/Communications, Inc. Address: Reading Plus®/Taylor Associates, 110 West Canal Street, Suite 301, Winooski, VT 05404. Email: info@readingplus.com. Web: <http://www.readingplus.com/>. Telephone: (800) 732-3758; (802) 735-1942. Fax: (802) 419-4786.

### Scope of use

The program is used in public and private elementary and secondary schools, colleges and universities, and reading clinics, as well as through home study courses. Students of all abilities and from multiple subpopulations, in both urban and rural settings, use *Reading Plus*®.

### Teaching

*Reading Plus*® includes web-based assessment and intervention components, as well as supplemental offline activities for direct instruction. After a student completes the initial assessments that determine the individual independent silent reading rate and level, the computer-based program assigns the student to the appropriate *Reading Plus*® intervention path and adapts to meet individual needs while the program is being used. The program length (and intensity) can vary from 9 weeks (3–4 times per week) to 30 weeks (5 times per week).

## Research

Eighteen studies reviewed by the WWC investigated the effects of *Reading Plus*® on adolescent learners. One study (Reading Plus, 2008) is a quasi-experimental design that meets WWC evidence standards with reservations. The remaining 17 studies do not meet either WWC evidence standards or eligibility screens.

### Meets evidence standards with reservations

Reading Plus (2008) conducted a quasi-experimental study that examined the effects of *Reading Plus*® on students in grades

Within a typical 45-minute *Reading Plus*® session, students engage in the following activities:

- Visual perceptual warm-up activities that aim to build attention, left-to-right tracking, perceptual accuracy, and the visual memory required for proficient reading
- Scaffolded silent reading activities that dynamically adjust content-level difficulty, degree of repetition, duration of reading, rate, and style of presentation
- Contextual analysis activities that aim to build word knowledge and contextual analysis skills, vocabulary mastery, and predictive and inferential abilities

Competency with 25 comprehension skills is tracked during the scaffolded silent reading activities, and students are assigned appropriately leveled offline skills lessons that target identified deficiencies. Teachers are provided guidelines for organizing small-group and whole-group comprehension skills instruction using these offline assignments.

### Cost

*Reading Plus*® license and hosting costs for schools are based on the number of participating students. Costs in typical installations vary from \$15 to \$30 per student.

5 to 9 across 98 schools in Florida. Students who completed one or more *Reading Plus*® lessons during the 2006–07 school year formed the intervention group, and students who completed no *Reading Plus*® lessons during the same period constituted the comparison group. Although impacts of *Reading Plus*® were analyzed for various grades and student populations, baseline equivalence<sup>4</sup> between intervention and comparison conditions was established only for low-achieving students (who scored at level 1 or 2 on the 2006 reading portion of the Florida

4. Baseline equivalence of the analytical sample was established using these criteria (see the WWC Procedures and Standards Handbook, Version 2.0, Chapter III, p. 15): (1) the reported difference of the observed characteristics (defined in the topic area review protocol) must be less than 0.25 of a standard deviation (based on the variation of that characteristic in the pooled sample), and (2) the effects must be statistically adjusted for baseline differences in the characteristics if the difference is greater than 0.05 of a standard deviation.

## Research (continued)

Comprehensive Assessment Test [FCAT]).<sup>5</sup> The WWC based its effectiveness ratings on findings from comparisons of the 6,070 low-achieving students who received *Reading Plus*<sup>®</sup> and the 7,058 low-achieving comparison students who did not receive *Reading Plus*<sup>®</sup>. The study reported students' outcomes after six months of program implementation.

### Extent of evidence

The WWC categorizes the extent of evidence in each domain as small or medium to large (see the WWC Procedures and

Standards Handbook, Appendix G). The extent of evidence takes into account the number of studies and the total sample size across the studies that meet WWC evidence standards with or without reservations.<sup>6</sup>

The WWC considers the extent of evidence for *Reading Plus*<sup>®</sup> to be small for the comprehension domain for adolescent learners. The one study that meets WWC evidence standards with reservations did not examine the effectiveness of *Reading Plus*<sup>®</sup> on adolescent learners in the alphabetics, reading fluency, or general literacy achievement domains.

## Effectiveness

### Findings

The WWC review of Adolescent Literacy interventions addresses student outcomes in four domains: alphabetics, reading fluency, comprehension, and general literacy achievement. The study included in this report covers one domain—comprehension. The findings below present the authors' estimates and WWC-calculated estimates of the size and the statistical significance of the effects of *Reading Plus*<sup>®</sup> on adolescent learners.<sup>7</sup>

*Comprehension.* Reading Plus (2008) found a statistically significant positive effect of *Reading Plus*<sup>®</sup> on the reading portion of the FCAT for low-achieving students. The WWC-calculated effect was small (0.06) but statistically significant. Thus,

for the comprehension domain, one study showed statistically significant positive effects.

### Rating of effectiveness

The WWC rates the effects of an intervention in a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative. The rating of effectiveness takes into account four factors: the quality of the research design, the statistical significance of the findings, the size of the difference between participants in the intervention and the comparison conditions, and the consistency in findings across studies (see the WWC Procedures and Standards Handbook, Appendix E).

## The WWC found *Reading Plus*<sup>®</sup> to have potentially positive effects on comprehension for adolescent learners

### Improvement index

The WWC computes an improvement index for each individual finding. In addition, within each outcome domain, the WWC computes an average improvement index for each study and an average improvement index across studies (see WWC

Procedures and Standards Handbook, Appendix F). The improvement index represents the difference between the percentile rank of the average student in the intervention condition and the percentile rank of the average student in the comparison condition. Unlike the rating of effectiveness, the improvement

- Analyses for the whole sample, for each grade (5, 6, 7, 8, and 9), and for subpopulations (by ethnicity, for the average/high achieving subgroup), and for students receiving 40 or more *Reading Plus*<sup>®</sup> lessons, do not meet WWC evidence standards because the intervention and comparison groups were not shown to be equivalent at baseline.
- The extent of evidence categorization was developed to tell readers how much evidence was used to determine the intervention rating, focusing on the number and size of studies. Additional factors associated with a related concept—external validity, such as the students' demographics and the types of settings in which studies took place—are not taken into account for the categorization. Information about how the extent of evidence rating was determined for *Reading Plus*<sup>®</sup> is in Appendix A5.
- The level of statistical significance was reported by the study authors or, when necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For the formulas the WWC used to calculate the statistical significance, see WWC Procedures and Standards Handbook, Appendix C for clustering and WWC Procedures and Standards Handbook, Appendix D for multiple comparisons. In the case of *Reading Plus* (2008), no corrections for clustering or multiple comparisons were needed.

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*(continued)*

index is entirely based on the size of the effect, regardless of the statistical significance of the effect, the study design, or the analysis. The improvement index can take on values between –50 and +50, with positive numbers denoting favorable results for the intervention group.

The improvement index for comprehension is +2 percentile points for a single finding from one study.

**References**

**Meets WWC evidence standards with reservations**

Reading Plus. (2008). *Reading improvement report: Miami-Dade regions II and III*. Huntington Station, NY: Taylor Associates/Communications, Inc.

**Studies that fall outside the Adolescent Literacy review protocol or do not meet WWC evidence standards**

Allen, L. A. (2006). Metacognition and reading: Strategies for struggling readers (Master's thesis, Pacific Lutheran University). *Masters Abstracts International*, 45(03), 57–1186.

The study is ineligible for review because it does not use a comparison group design or a single-case design.

Barnes, J. E. (2003). *A pilot study regarding the effects of the Reading Plus program on reading levels*. Unpublished master's thesis, Western Michigan University, Kalamazoo. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.

Marrs, H., & Patrick, C. (2002). A return to eye-movement training? An evaluation of the *Reading Plus* program. *Reading Psychology*, 23(4), 297. The study is ineligible for review because it does not use a comparison group design or a single-case design.

Matthews, A. (2005). *Effects of using Reading Plus 2000® on the reading rate of students with learning disabilities and visual efficiency problems*. Unpublished educational specialist's thesis, Valdosta State University, GA. The study is ineligible for review because it does not use a sample

**Summary**

The WWC reviewed 18 studies on *Reading Plus*® for adolescent learners. One of these studies meets WWC evidence standards with reservations; the remaining 17 studies do not meet either WWC evidence standards or eligibility screens. Based on one study, the WWC found potentially positive effects on comprehension for adolescent learners. The conclusions presented in this report may change as new research emerges.

aligned with the protocol—the sample includes less than 50% general education students.

Petscher, Y., & Feller, K. (2010). *The value-added of a silent reading fluency instructional protocol and grade 4–10 students' achievement in reading comprehension and general literacy*. Unpublished manuscript. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.

Petscher, Y., & Feller, K. (2010). *The value-added of a silent reading fluency instructional protocol and retained students' achievement in reading comprehension and general literacy*. Unpublished manuscript. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.

Phillips, S. (2006). Hi-tech goggles said to aid reading. *Times Educational Supplement* (4691), 20 The study is ineligible for review because it is not a primary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

Rasinski, T., Samuels, S. J., Hiebert, E., Petscher, Y., & Feller, K. (in press). *The relationship between a silent reading fluency instructional protocol on students' reading comprehension and achievement in an urban school setting*. Forthcoming in *Reading Psychology*. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.

## References *(continued)*

- Reading Plus. (2007). *National research project: Nicoma Park Intermediate School overview 2005–2006*. Huntington Station, NY: Taylor Associates/Communications, Inc. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Reading Plus. (2007). *National research project: Prescott High School overview 2006–2007*. Huntington Station, NY: Taylor Associates/Communications, Inc. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Reading Plus. (2007). *Reading Plus national research project: Belle Valley Elementary School overview 2005–2006*. Huntington Station, NY: Taylor Associates/Communications, Inc. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Reading Plus. (2007). *Reading Plus national research project: Fourth grade study overview 2005–2006*. Huntington Station, NY: Taylor Associates/Communications, Inc. The study is ineligible for review because it uses a randomized controlled trial design that either did not generate groups using a random process or had nonrandom allocations after random assignment, and the subsequent analytic intervention and comparison groups are not shown to be equivalent.
- Reading Plus. (2007). *Reading Plus national research project: Galatas Elementary study summary 2005–2006*. Huntington Station, NY: Taylor Associates/Communications, Inc. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Reading Plus. (2007). *Reading Plus national research project: Golden West High School overview 2005–2006*. Huntington Station, NY: Taylor Associates/Communications, Inc. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Reading Plus. (2007). *Reading Plus national research project: Second grade study overview 2005–2006*. Huntington Station, NY: Taylor Associates/Communications, Inc. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Schlange, D., Patel, H., & Caden, B. (1999). Evaluation of the *Reading Plus 2000* and visagraph system as a remedial program for academically “at risk” sixth and eighth grade students: A pilot study. *Optometry and Vision Science*, 76(posters 11). The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Slavin, R. E., Cheung, A., Groff, C., & Lake, C. (2008). Effective reading programs for middle and high schools: A best-evidence synthesis. *Reading Research Quarterly*, 43(3), 290–322. The study is ineligible for review because it is not a primary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.