What Works Clearinghouse

INSTITUTE OF EDUCATION SCIENCES

Beginning Reading October 2008[1]

Accelerated Reader

Program description

The *Accelerated Reader* program is a guided reading intervention in which teachers are closely involved with student reading of text. It involves two components, the *Accelerated Reader* software and *Accelerated Reader Best Classroom Practices* (formerly called *Reading Renaissance*). The *Accelerated Reader* software is a computerized supplementary reading program. *Accelerated Reader* relies on independent reading practice as a way of managing student performance by providing students and teachers feedback from quizzes based on books the students read. *Accelerated Reader Best Classroom Practices* are a set of recommended principles on guided independent reading (or teachers' direction of students' interactions with text) that ensure *Accelerated Reader* is implemented with integrity.[2]

Research

Two studies of *Accelerated Reader* meet the What Works Clearinghouse (WWC) evidence standards. One of the studies evaluated 572 students from grades K to 3 attending 11 schools in a southern school district in the United States. The second study included 32 students in grade 3 attending one school in the Pacific Northwest.[3]

Based on these two studies, the WWC considers the extent of evidence for *Accelerated Reader* to be medium to large for comprehension and small for reading fluency and general reading achievement. No studies that meet WWC evidence standards with or without reservations examined the effectiveness of *Accelerated Reader* in the alphabetics domain.

Effectiveness

Accelerated Reader was found to have no discernible effects on reading fluency, mixed effects on comprehension, and potentially positive effects on general reading achievement.

	Alphabetics	*Reading fluency*	*Comprehension*	*General reading achievment*
Rating of effectiveness	na	No discernible effects	Mixed effects	Potentially positive effects
Improvement index[4]	na	+3 percentile points	Average: 0 percentile points Range: –12 to +12 percentile points	Average: +16 percentile points Range: +10 to +25 percentile points

na = not applicable

1. This report has been updated to include reviews of 62 studies that have been released since 2005. A complete list and disposition of all studies reviewed is provided in the references.
2. The descriptive information for this program was obtained from a publicly available source: the program's website (www.renlearn.com/ar/, downloaded July 2008). 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.
3. The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.
4. These numbers show the average and range of student-level improvement indices for all findings across the two studies.

Additional program information

Developer and contact

Developed by Judi and Terry Paul, *Accelerated Reader* is distributed by Renaissance Learning, Inc. Address: PO Box 8036, Wisconsin Rapids, WI 54495-8036, USA. Email: answers@renlearn.com. Web: www.renlearn.com/ar/. Telephone: (800) 338-4204.

Scope of use

The *Accelerated Reader* software prototype was created in 1984. *Accelerated Reader Best Classroom Practices* (formerly called *Reading Renaissance*) was first introduced to educators in 1996 through professional development seminars. According to the developers, more than 63,000 schools nationwide are using *Accelerated Reader* and Renaissance Learning's other reading programs in a wide variety of academic settings.

Teaching

A primary best practice recommendation for use of *Accelerated Reader* is a dedicated 30–60 minute block of time for reading practice. Depending on the ages and skill levels of the students, three activities may occur during a reading block: reading texts to a child, reading texts to a child using a paired-reading technique, or independent reading by the child. As children develop decoding skills, they transition to guided independent reading. Initially, students take a norm-referenced, standardized measure of general reading achievement to determine their independent reading level—the level at which books are neither too easy nor too difficult and students are able to read without frustration. Then students select books within a recommended readability range to read independently. After reading each book, students take a comprehension quiz and earn points based on the number of correct responses, the length of the book, and the readability level of the book. Teachers use data from the quizzes to monitor student progress, adjust students' reading ranges, or identify students who may need more targeted interventions. Teachers use points to set individual student goals for the quantity and quality of student reading practice and to monitor the student's progress. Accumulation of points is intended to motivate student learning; teachers also may choose to implement a system of rewards, though Renaissance Learning does not recommend or require the use of extrinsic rewards.

Cost

The school version of *Accelerated Reader* software can be ordered for $4 a student per year, with a one-time school fee of $1,599. Professional development to learn *Accelerated Reader Best Classroom Practices* is available at additional cost and can be customized in terms of length and mode of delivery (onsite, telephone/online, regional seminars). The average annual cost of full implementation, which varies depending on the school size and components implemented, ranges from $2,000 to $10,000 per school year.

Research

One hundred studies reviewed by the WWC investigated the effects of *Accelerated Reader* or some subset of its components. Two of these studies (Ross, Nunnery, & Goldfeder, 2004; Bullock, 2005) are randomized controlled trials that meet WWC evidence standards. The remaining 98 studies do not meet either WWC evidence standards or eligibility screens.

Ross, Nunnery, & Goldfeder (2004) was a randomized controlled trial that included 45 teachers and 572 students in grades K–3.[5] The study took place in 11 schools in Memphis, TN. Within each school, a minimum of two teachers within one grade volunteered to be randomly assigned to implement either the intervention, *Accelerated Reader*, or the comparison, a commercially available basal reading program used across all schools. The study examines student outcomes during the first year of implementation.

Bullock (2005) was a randomized controlled trial that included 32 students from two third-grade classrooms in grade 3 in one school near Eugene, OR.[6] The students were randomly assigned to the intervention group or the control group. The intervention

5. The material presented here was drawn from Ross, Nunnery, & Goldfeder's (2004) larger study that assessed the effectiveness of *Accelerated Reader* in grades K–6.
6. The material presented here was drawn from Bullock's (2005) larger study that assessed the effectiveness of *Accelerated Reader* in grades 3–5.

Research *(continued)*

group implemented *Accelerated Reader* for 10 weeks, spending at least 90 minutes a week independently reading trade books in the classroom and taking *Accelerated Reader* quizzes on each book. The control group also spent at least 90 minutes a week reading independently, choosing any book available in the school library, and not using the *Accelerated Reader* software.

Extent of evidence

The WWC categorizes the extent of evidence in each domain as small or medium to large (see the What Works Clearinghouse Extent of Evidence Categorization Scheme). 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.[7]

The WWC considers the extent of evidence for *Accelerated Reader* to be medium to large for comprehension and small for reading fluency and general reading achievement. No studies that meet WWC standards with or without reservations examined the effectiveness of *Accelerated Reader* in the alphabetics domain.

Effectiveness

Findings

The WWC review of beginning reading addresses student outcomes in four domains: alphabetics, reading fluency, comprehension, and general reading achievement.[8] The studies of *Accelerated Reader* presented in this report address outcomes in each of these domains except alphabetics. The findings below include both the authors' estimates and WWC-calculated estimates of the size and statistical significance of the effects of *Accelerated Reader* on students.

Reading Fluency. Bullock (2005) reports, and the WWC confirms, no significant effect of *Accelerated Reader* on third-graders when measured using the Oral Reading Fluency subtest of the Dynamic Indicators of Basic Early Literacy Skills (DIBELS).

Comprehension. Ross, Nunnery, & Goldfeder (2004) report a positive and statistically significant effect of *Accelerated Reader* on third grade student performance on the STAR Reading test.[9] In WWC computations, this positive effect is not statistically significant, but is considered substantively important according to WWC criteria (an effect size greater than 0.25). Bullock (2005) reports, and the WWC confirms, no significant effect of *Accelerated Reader* on third graders when measured using the STAR Reading test. However, WWC calculations show the effect to be negative and substantively important according to WWC criteria (an effect greater than 0.25).[10]

General reading achievement. Ross, Nunnery, & Goldfeder (2004) show, and the WWC confirms, that *Accelerated Reader* has positive and statistically significant effects on a measure of general reading achievement (STAR Early Literacy test) when results are combined across kindergarten, first, and second grade students. When analyzed separately for each grade level, the effects are substantively important (greater than 0.25) but not statistically significant.

Rating of effectiveness

The WWC rates the effects of an intervention on a given outcome domain as positive, potentially positive, mixed, no discernible

7. 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 *Accelerated Reader* is in Appendix A5.
8. For definitions of the domains, see the Beginning Reading Protocol.
9. The STAR tests are developed and distributed by Renaissance Learning, which also distributes *Accelerated Reader*. According to Renaissance Learning research, the STAR Reading test and the STAR Early Literacy tests are correlated to other standardized reading tests. See Appendices A2.2 and A2.3.
10. The level of statistical significance was reported by the study authors or, where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation, see the WWC Tutorial on Mismatch. For the formulas the WWC used to calculate the statistical significance, see Technical Details of WWC-Conducted Computations. For the Ross, Nunnery, & Goldfeder (2004) study, a correction for clustering was needed.

Effectiveness *(continued)*

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 Intervention Rating Scheme).

The WWC found *Accelerated Reader* to have no discernible effects for reading fluency, mixed effects for comprehension, and potentially positive effects for general reading achievement

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 Technical Details of WWC-Conducted Computations). The improvement index represents the difference between the percentile rank of the average student in the intervention condition versus the percentile rank of the average student in the comparison condition. Unlike the rating of effectiveness, the improvement index is based entirely on the size of the effect, regardless of the statistical significance of the effect, the study design, or the analyses. The improvement index can take on values between –50 and +50, with positive numbers denoting results favorable to the intervention group.

The improvement index for reading fluency for third grade students is +3 percentile points for one outcome in one study. The average improvement index for comprehension for third grade students is 0 percentile points with a range of –12 to +12 percentile points for one outcome in both studies. The average improvement index for general reading achievement is +16 percentile points with a range of +10 to +25 percentile points across kindergarten, first, and second grade students in one study.

Summary

The WWC reviewed 100 studies of *Accelerated Reader* or some of its components. Two of these studies meet WWC evidence standards; the remaining studies do not meet WWC evidence screens. Based on these two studies, the WWC found no discernible effects in reading fluency, mixed effects in comprehension, and potentially positive effects in general reading achievement. The evidence presented in this report is limited and may change as new research emerges.

References

Meet WWC evidence standards

Ross, S. M., Nunnery, J., & Goldfeder, E. (2004). *A randomized experiment on the effects of Accelerated Reader/Reading Renaissance in an urban school district: Preliminary evaluation report*. Memphis, TN: The University of Memphis, Center for Research in Educational Policy.

Additional source:

Nunnery J., Ross, S., & McDonald, A. (2006). A randomized experimental evaluation of the impact of *Accelerated Reader/Reading Renaissance* implementation on reading achievement in grades 3 to 6. *Journal of Education for Students Placed at Risk, 11*(1), 1–18.

Bullock, J. C. (2005). Effects of the *Accelerated Reader* on reading performance of third, fourth, and fifth-grade students in one western Oregon elementary school. University of Oregon; 0171 Advisor: Gerald Tindal. DAI, 66 (07A), 56-2529.

Meet WWC evidence standards with reservations

None.

Studies that fall outside the Beginning Reading protocol or do not meet WWC evidence standards

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Allington, R. L. (2006). Critical factors in designing an effective reading intervention for struggling readers. In C. Cummins (Ed.), *Understanding and implementing reading first initiatives: The changing role of administrators*. International Reading Association. The study is ineligible for review because it does not examine the effectiveness of an intervention.

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Brem, S., Husman, J., & Duggan, M. A. (2005). Findings from a three-year study of *Reading Renaissance* in a title I urban elementary school. The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.

Calhoun, V. L. (2007). The effects of a supplemental program on the reading achievement of learning-disabled students. Capella University; 1351 Advisor: Ted Ray. DAI, 68 (04A), 131-1238. The study is ineligible for review because it does not use a sample within the age or grade range specified in the protocol.

Callard-Szulgit, R. (2005). *Teaching the gifted in an inclusion classroom: activities that work*. Rowman & Littlefield Publishing Group, 4501 Forbes Blvd., Suite 200, Lanham, MD. The study is ineligible for review because it does not examine the effectiveness of an intervention.

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Goodman, G. (1999). *The Reading Renaissance/Accelerated Reader* Program. Pinal county school-to-work evaluation report. Tucson, AZ: Creative Research, Inc. (ERIC Document Reproduction Service No. ED427299) The study is ineligible for review because it does not use a sample within the age or grade range specified in the protocol.

Groce, R. D., & Groce, E. C. (2005). Deconstructing the *Accelerated Reader* program. *Reading Horizons, 46*(1), 17–30. The study is ineligible for review because it does not include a student outcome.

Hagerman, T. E. (2003). A quasi-experimental study on the effects of *Accelerated Reader* at middle school. *Dissertation Abstracts International, 64*(06), 2027A. (UMI No. 3095250) The study is ineligible for review because it does not use a sample within the age or grade range specified in the protocol.

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Holmes, C. T., & Brown C. L. (2002). A controlled evaluation of a total school improvement process, *School Renaissance*. Athens: University of Georgia. (ERIC Document Reproduction Service No. ED474261) The study does not meet WWC evidence standards because the measures of effect cannot be attributed solely to the intervention—the intervention was combined with another intervention.

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For more information about specific studies and WWC calculations, please see the WWC *Accelerated Reader* Technical Appendices.