

What Works Clearinghouse



Cooperative Integrated Reading and Composition[®]

Program description¹

Cooperative Integrated Reading and Composition[®] (CIRC) is a comprehensive reading and writing program for students in grades 2 through 8. It includes story-related activities, direct instruction in reading comprehension, and integrated reading and language arts activities. Pairs of students (grouped either by or across ability levels) read to each other, predict how stories will end, summarize

stories, write responses, and practice spelling, decoding, and vocabulary. Within cooperative teams of four, students work to understand the main idea of a story and work through the writing process. The CIRC[®] process includes teacher instruction, team practice, peer assessment, and team/partner recognition. A Spanish version of the program was also designed for grades 2–5.²

Research

Two studies of CIRC[®] met the WWC evidence standards with reservations. They included over 700 third-grade students in Ohio and Texas.³ The WWC considers the extent of evidence for

CIRC[®] to be moderate to large for comprehension. No studies that met WWC evidence standards with or without reservations addressed alphabetics, fluency, or general reading achievement.

Effectiveness

The CIRC[®] program was found to have no discernible effects for comprehension.

	Alphabetics	Fluency	Comprehension	General reading achievement
Rating of effectiveness	na	na	No discernible effects	na
Improvement index ⁴	na	na	Average: + 4 percentile points Average: +1 to +8 percentile points	na

na = not applicable

1. The descriptive information for this program was obtained from publicly available sources: the research literature (Bramlett, 1994; Skeans, 1991). 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.
2. The What Works Clearinghouse (WWC) reviewed the effects of *Bilingual CIRC* on the reading achievement of English language learners and the findings are reported in a separate WWC intervention report.
3. The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.

Additional program information¹

Developer and contact

Developed by the Center for Social Organization of Schools at The Johns Hopkins University, *Cooperative Integrated Reading and Composition*[®] is distributed by the Success for All Foundation, Inc. Address: 200 W. Towsontown Boulevard, Baltimore, MD 21204-5200. Email: sfainfo@successforall.org. Web: <http://www.successforall.net/elementary/readingwings.htm>. Telephone: (800) 548-4998 ext. 2372.

Scope of use

CIRC[®] was developed in 1983 by Bob Slavin and Nancy Madden. In 1985 *CIRC*[®] was used as part of a cooperative elementary whole-school model. The program was reformulated as *Reading Roots* (beginning readers) and *Reading Wings* (upper elementary), and is both a component of the Success for All comprehensive school reform model and a stand-alone reading program.

Research

Eleven studies reviewed by the WWC investigated the effects of *CIRC*[®]. Two studies (Bramlett, 1994; Skeans, 1991) were quasi-experimental designs that met WWC evidence standards with reservations. The remaining nine studies did not meet WWC evidence screens.

Met evidence standards with reservations

Bramlett (1994) included 392 third-graders from 18 classrooms in eight school districts in rural southern Ohio. *CIRC*[®] was implemented in the intervention classrooms as the core reading

Teaching

The program uses daily 90-minute lessons to focus on story-related activities, direct instruction in reading comprehension, and integrated reading and language arts activities. In a team setting, pairs of mixed-ability students work together to read, discuss their reading to clarify unknown vocabulary, re-read for fluency, understand the main idea, comprehend stories, and work through the writing process (draft, revise, and edit each other's writing). Students are rewarded on the basis of the whole team's performance to provide motivation for peer work. Teams are rewarded based on the sum of team members' performance on these assessments, creating motivation for peer teaching.

Teacher training includes a two-day session that covers word structure and phonics, vocabulary development, fluency, and comprehension skills as well as program management and cooperative learning strategies. Technical support through telephone conference or on-site visits is also provided.

Cost

The cost of the program is approximately \$150 per student for training and materials, depending on school size and number of schools participating together.

curriculum.⁵ The comparison classrooms received their regular reading curriculum.

Skeans (1991) is a study of the third-grade classrooms in a suburban district of Houston, Texas. Twenty-four third-grade teachers were matched on students' achievement and other factors and assigned to two conditions. In all, 169 students in the intervention group used *CIRC*[®] for 18 weeks along with the integrated language arts, and 141 students in the comparison group experienced only the integrated language arts curriculum.

4. These numbers show the average and range of improvement indices for all findings across the study.

5. Students in intervention classes were given only the reading components of *Cooperative Integrated Reading and Composition*[®].

Extent of evidence

The WWC categorizes the extent of evidence in each domain as small or moderate 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 met WWC evidence standards with or without reservations.⁶ The WWC considers the extent of evidence for *CIRC*[®] to be moderate to large for comprehension. No studies that met WWC evidence standards with or without reservations addressed alphabetics, fluency, or general reading achievement.

Effectiveness Findings

The WWC review of interventions for beginning reading addresses student outcomes in four domains: alphabetics, fluency, comprehension; and general reading achievement.⁷ The studies included in this report covers only the comprehension domain. Within comprehension, results for two constructs, vocabulary development and reading comprehension, are reported. The findings below present the authors' estimates and WWC-calculated estimates of the size and the statistical significance of the effects of *CIRC*[®] on students.⁸

Comprehension. For reading comprehension, Bramlett (1994) reported a statistically significant positive effect of *CIRC*[®] on the Reading Comprehension subtest of the California Achievement Test (CAT). According to WWC calculations, the effect was not statistically significant. For vocabulary, the study authors did not find statistically significant effects of *CIRC*[®] on the CAT Word Analysis subtest nor on the CAT Reading Vocabulary subtest. The WWC found that the average effect size across the three comprehension outcomes was neither statistically significant nor large enough to be considered substantively important according to WWC criteria (that is, an effect size at least 0.25).

For reading comprehension, Skeans (1991) did not find a statistically significant effect of *CIRC*[®] on the Metropolitan Achievement Test (MAT) Reading Comprehension subtest. For vocabulary, the study author reported a statistically significant positive effect on the Vocabulary subtest of the MAT. According to WWC calculations, the effect was not statistically significant. The WWC found that the average effect size across the two outcomes was neither statistically significant not large enough to be substantively important.

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,⁸ 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](#)).

6. 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.
7. For definitions of the domains, see the [Beginning Reading Protocol](#).
8. 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](#). See [Technical Details of WWC-Conducted Computations](#) for the formulas the WWC used to calculate the statistical significance. In the case of *CIRC*[®], corrections for clustering and multiple comparisons were needed.

The WWC found *CIRC*[®] to have no discernible effects on comprehension

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 average improvement index for comprehension is +4 percentile points in two studies, with a range of +1 to +8 percentile points across findings.

Summary

The WWC reviewed 11 studies on *CIRC*[®]. Two studies met WWC standards with reservations; the others did not meet WWC evidence screens. Based on the two studies, the WWC found no discernible effects in the comprehension domain. The evidence presented in this report may change as new research emerges.

References

Met WWC evidence standards with reservations

Bramlett, R. K. (1994). Implementing cooperative learning: A field study evaluating issues for school-based consultants. *Journal of School Psychology, 32*(1), 67–84.

Skeans, S. E. S. (1991). The effects of Cooperative Integrated Reading and Composition: Fidelity of implementation, and teacher concerns on student achievement. *Dissertation Abstracts International 53*(02), 0455A. (UMI No. 9217026)

Did not meet WWC evidence screens

Calderon, M., Hertz-Lazarowitz, R., & Slavin, R. E. (1998). Effects of bilingual cooperative integrated reading and composition on students making the transition from Spanish to English reading. *The Elementary School Journal, 99*(2), 153–165.⁹

Jenkins, J. R., Jewell, M., Leicester, N., O'Connor, R. E., Jenkins, L. M., & Troutner, N. M. (1994). Accommodations for individual differences without classroom ability groups: An experiment in school restructuring. *Exceptional Children, 60*(4), 344–358.¹⁰

Nath, L. R. (1996). A peer tutoring training model for cooperative groupings: Is the effectiveness of cooperative groupings enhanced by students obtaining peer tutoring skills? *Dissertation Abstracts International, 57*(12), 5051A. (UMI No. 9717224)¹¹

Rapp, J. C. (1991). The effect of cooperative learning on selected student variables (Cooperative Integrated Reading and Composition on academic achievement in reading comprehension, vocabulary, and spelling on student self-esteem). *Dissertation Abstracts International, 52*(10), 3516A. (UMI No. 9207225)¹⁰

9. Intervention not relevant: the *BCIRC* intervention was designed to teach English to non-native speakers, which is not the focus of the Beginning Reading review.
10. Does not use a strong causal design: there was only one intervention and/or one comparison unit in each study condition, so the analysis could not separate the effects of the intervention from other factors.
11. The outcome measures are not shown to be valid or reliable: the outcome measures used in this study did not demonstrate adequate reliability or validity.

References *(continued)*

- Stevens, R. J., Madden, N. A., Slavin, R. E., & Farnish, A. M. (1987). Cooperative integrated reading and composition: Two field experiments. *Reading Research Quarterly, 22*(4), 433–454. **(Study: Fall 1985)**¹²
- Stevens, R. J., Madden, N. A., Slavin, R. E., & Farnish, A. M. (1987). Cooperative Integrated Reading and Composition: Two field experiments. *Reading Research Quarterly, 22*(4), 433–454. **(Study: Spring 1985)**¹²
- Stevens, R. J., Slavin, R. E., & Farnish, A. M. (1991). The effects of cooperative learning and direct instruction in reading comprehension strategies on main idea identification. *Journal of Educational Psychology, 83*(1), 8–16.¹³
- Stevens, R. J., & Slavin, R. E. (1995). Effects of a cooperative learning approach in reading and writing on academically handicapped and nonhandicapped students. *The Elementary School Journal, 95*(3), 241–262.¹³
- Stevens, R. J., & Slavin, R. E. (1995). The cooperative elementary school: Effects on students' achievement, attitudes, and social relations. *American Educational Research Journal, 32*(2), 321–351.¹³
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For more information about specific studies and WWC calculations, please see the [WWC CIRC®](#) Technical Appendices.

12. Complete data were not reported for the WWC to compute effect sizes for the third graders, the sample of interest to this review.

13. The sample is not appropriate to this review: the parameters for this WWC review specified that students should be in grades kindergarten through third grade; this study did not disaggregate students in the eligible range from those outside the range.