What Works Clearinghouse

ies INSTITUTE OF EDUCATION SCIENCES

Peer-Assisted Learning Strategies

Program Description[2]

Peer-Assisted Learning Strategies is a peer-tutoring program for use in elementary school classrooms to improve student proficiency in reading. Its purpose is to supplement students' existing reading curriculum. *Peer-Assisted Learning Strategies* was developed for use with students with diverse academic needs and has been used with English language learners.

The program uses peer-mediated instruction, a process whereby students work in pairs or small groups to provide tutoring in three reading strategies: retelling (i.e., sequencing information), paragraph shrinking (i.e., generating main idea statements), and prediction relay (i.e., generating and evaluating predictions). In addition to being trained in each of the reading strategies, students are taught to correct their partner's reading errors, award points for correct responses, and provide consistent encouragement and feedback. Developers recommend that tutoring sessions last approximately 35 minutes and be conducted three to four times a week.

Research[3]

One study of *Peer-Assisted Learning Strategies* that falls within the scope of the English Language Learners review protocol meets What Works Clearinghouse (WWC) evidence standards, and no studies meet WWC evidence standards with reservations. The study that meets evidence standards includes 99 English language learners from 3rd to 6th grade in Texas.[4] Of the full sample, 49 English language learners were in classrooms that used *Peer-Assisted Learning Strategies* for reading instruction, and 50 were in classrooms that used "business-as-usual" reading instruction. Of the 49 *Peer-Assisted Learning Strategies*

1. This report has been updated to include reviews of three studies that have been released since 2007. Of these additional studies, one is not within the scope of the English Language Learners review protocol (Calhoon, Al Otaiba, Greenberg, King, & Avalos, 2006) and two are within the scope of the protocol but do not meet evidence standards (Calhoon, Al Otaiba, Greenberg, King, & Avalos, 2007; McMaster, Kung, Han, & Cao, 2008). One study that meets evidence standards in the earlier review (Saenz, Fuchs, & Fuchs, 2005) was rereviewed and still meets evidence standards. However, this report now excludes the group of students with learning disabilities, since those results will be reported in another WWC topic area. A complete list and disposition of all studies reviewed are provided in the references.
2. The descriptive information for this program was published as part of the previous report of the effects of Peer-Assisted Learning Strategies on English language learners, released May 2007. 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 February 2009.
3. 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.
4. The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.

Research *(continued)*

English language learners, 15 were in the low-achieving subgroup, 17 in the average-achieving subgroup, and 17 in the high-achieving subgroup. Of the 50 business-as-usual English language learners, 18 were in the low-achieving subgroup, 18 in the average-achieving subgroup, and 14 in the high-achieving subgroup.

Based on this study, the WWC considers the extent of evidence for *Peer-Assisted Learning Strategies* on English language learners to be small for reading achievement. The one study that meets WWC evidence standards did not examine the effectiveness of *Peer-Assisted Learning Strategies* in the mathematics achievement or English language development domains for English language learners.

Effectiveness

Peer-Assisted Learning Strategies was found to have potentially positive effects on reading achievement for English language learners.

	Reading achievement	*Mathematics achievement*	*English language development*
Rating of effectiveness	Potentially positive effects	na	na
Improvement index[5]	Average: +12 percentile points	na	na
	Range: +5 to +25 percentile points	na	na

na = not applicable

Additional program information

Developer and contact

Developed by Lynn and Doug Fuchs, *Peer-Assisted Learning Strategies* is distributed by the Vanderbilt Kennedy Center for Research on Human Development. Address: Vanderbilt University, Attn: Flora Murray/PALS Orders, Peabody Box 228, Nashville, TN 37203-5701. Email: flora.murray@vanderbilt.edu. Web: http://kc.vanderbilt.edu/pals. Telephone: (615) 343-4782.[6]

Scope of use

Peer-Assisted Learning Strategies, developed in the 1990s, was designed to be used with all students in kindergarten through 5th grade. It has been implemented in Iowa, Minnesota, Oregon, Tennessee, Texas, and other states. The program has been used with English-proficient students with learning disabilities; the developers also have expanded its scope of use to include English language learners with and without learning disabilities and high school students.

Teaching

Peer-Assisted Learning Strategies is a peer-tutoring program that incorporates three reading strategies: partner reading and retelling, paragraph shrinking, and prediction relay. During *Peer-Assisted Learning Strategies* sessions, students are put in pairs and take turns being the tutor (coach) and the tutee. To form pairs, the teacher ranks students from highest to lowest reading achievement. To decrease the disparity of the reading ability of the pairs,

5. These numbers show the average and range of student-level improvement indices for all findings in the study.
6. The results discussed in this report pertain to *Peer-Assisted Learning Strategies*; however, it should be noted that materials for early grades, kindergarten and first grade, were developed by Patricia G. Mathes and others. Those materials are packaged under the *Peer Assisted Literacy Strategies* name and are distributed by Sopris West. Address: 4185 Salazar Way, Frederick, CO 80504. Email: customerservice@sopriswest.com. Web: http://www.sopriswest.com/default.aspx. Telephone: (800) 547-6747.

Additional program information *(continued)*

the list is split in half. The first student listed on the first half of the list is paired with the first student on the second half of the list.

During partner reading and retelling, the stronger reader reads for five minutes, while the weaker reader serves as the coach by identifying errors, initiating correction procedures, and awarding points for each sentence read correctly. After the first student reads, the coach asks what he or she has learned. Students switch roles for the second five minutes and follow the same procedure; that is, the weaker reader reads the same material while the stronger reader serves as the coach.

During paragraph shrinking, students generate main idea statements. The stronger reader reads one paragraph at a time. After reading each paragraph, the reader determines the main idea by responding to the following: "Name the most important who or what in the paragraph. Tell the most important information about the who or what. Say the main idea in 10 words or less." The reader receives one point for each correct response. The tutor uses a correction procedure to help the reader amend inaccurate main idea statements. The first reader reads and shrinks paragraphs for five minutes before students switch roles. The second reader does not read the same material.

Prediction relay increases comprehension and piques students' interest in the selection they are reading. Before reading half a page, the stronger reader has two minutes to predict what he or she might learn or what might happen. After reading for five minutes, the stronger reader has two minutes to evaluate the prediction. The students switch roles and follow the same procedure with new reading material.

Cost

Peer-Assisted Learning Strategies materials range from $15 to $35. Large-print lessons ($15) are recommended for using *Peer-Assisted Learning Strategies* in reading instruction for kindergarten classrooms. Materials for 1st grade consist of scripted lessons to teach students the *Peer-Assisted Learning Strategies* procedures, teacher-directed decodable worksheets, and decoding lesson worksheets that student pairs use during tutoring. Classroom reading materials (e.g., anthology from a core reading program, children's books) are used for the partner-reading portion of 1st-grade *Peer-Assisted Learning Strategies.* Materials for 2nd grade and above consist of a teacher's manual with scripted lessons to instruct students in the *Peer-Assisted Learning Strategies* program. Students use classroom reading material to implement the program. Additional information can be found on the *Peer-Assisted Learning Strategies* website (http://kc.vanderbilt.edu/pals).

Research

Four studies reviewed by the WWC investigated the effects of *Peer-Assisted Learning Strategies* on English language learners. One study (Saenz, Fuchs, & Fuchs, 2005) is a randomized controlled trial that meets WWC evidence standards. The remaining three studies do not meet either WWC evidence standards or eligibility screens.

Meets evidence standards

Saenz, Fuchs, and Fuchs (2005) examined the effectiveness of *Peer-Assisted Learning Strategies* on English language learners. The study included 99 English language learners (49 *Peer-Assisted Learning Strategies* and 50 comparison) from 12 classrooms in grades 3–6. Classrooms were randomly assigned to either the *Peer-Assisted Learning Strategies* condition or the comparison condition within grade and school. Teachers in the comparison condition were asked to conduct reading instruction in their normal fashion. The study team compared lesson plans and found that *Peer-Assisted Learning Strategies* teachers were more likely than comparison teachers to use one-on-one activities and peer-mediated instruction and less likely to use teacher-led instruction. The study took place in one school district in Texas. Saenz, Fuchs, and Fuchs (2005) present results for three subgroups: 1) low achievers, 33 English language learners (15 *Peer-Assisted Learning Strategies* and 18 comparison); 2) average achievers, 35 English language learners (17 *Peer-Assisted Learning Strategies* and

Research *(continued)*

18 comparison); and 3) high achievers, 31 English language learners (17 *Peer-Assisted Learning Strategies* and 14 comparison). The results for the average-achieving subgroup are presented in Appendix A4. The other two subgroups are not presented because they do not meet WWC evidence standards.[7]

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.[8]

The WWC considers the extent of evidence for *Peer-Assisted Learning Strategies* to be small for reading achievement for English language learners. The one study that meets WWC evidence standards did not examine the effectiveness of *Peer-Assisted Learning Strategies* in the mathematics achievement or English language development domains for English language learners.

Effectiveness

Findings

The WWC review of interventions for English language learners addresses student outcomes in three domains: reading achievement, mathematics achievement, and English language development. The study included in this report covers one domain: reading achievement. The findings below present the authors' estimates and WWC-calculated estimates of the size and the statistical significance of the effects of *Peer-Assisted Learning Strategies* on English language learners.[9]

Reading achievement. Saenz, Fuchs, and Fuchs (2005) analyzed three reading achievement outcomes, which are three subtests of the Comprehensive Reading Assessment Battery (Word Correct, Maze Choices Correct, and Comprehension Questions Correct) for 3rd- through 6th-grade students. In the maze task, students read a selection in which the first sentence is intact. This is followed by sentences in which every seventh word is replaced with a three-item multiple-choice format. One of the choices is a semantically correct substitution for the missing word. There were no statistically significant effects on the three reading achievement measures once clustering corrections were made. However, the WWC found that the combined effect for reading achievement across all measures was positive and large enough to be considered substantively important (ES = 0.31).

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

7. The low-achieving subgroup results do not meet standards because the combination of overall and differential attrition rates exceeds WWC standards for this area, and the estimates of effects did not account for the existing differences in pre-intervention characteristics. The high-achieving subgroup did not meet standards because the combination of overall and differential attrition rates exceeds WWC standards for this area, and the subsequent analytic intervention and comparison groups are not shown to be equivalent at baseline.
8. 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 *Peer-Assisted Learning Strategies* is in Appendix A6.
9. 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 Saenz, Fuchs, and Fuchs (2005), a correction for clustering was needed, so the significance levels may differ from those reported in the original study.

Effectiveness *(continued)*

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 *Peer-Assisted Learning Strategies* to have potentially positive effects for reading achievement for English language 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 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 average improvement index for reading achievement is +12 percentile points across one study, with a range of +5 to +25 percentile points across findings.

Summary

The WWC reviewed four studies on *Peer-Assisted Learning Strategies* for English language learner students. One of these studies meets WWC evidence standards; three studies do not meet either WWC evidence standards or eligibility screens. Based on the one study, the WWC found potentially positive effects on reading achievement for English language learners. The conclusions presented in this report may change as new research emerges.

References

Meets WWC evidence standards

Saenz, L. M., Fuchs, L. S., & Fuchs, D. (2005). Peer-assisted learning strategies for English language learners with learning disabilities. *Exceptional Children, 71*(3), 231–247.

Additional source:

Saenz, L. M. (2002). Peer-assisted learning strategies for limited English proficient students with learning disabilities. (Doctoral dissertation, Vanderbilt University, 2002). *Dissertation Abstracts International, 63*(07A), 163–2505.

Studies that fall outside the English Language Learners review protocol or do not meet WWC evidence standards

Calhoon, M. B., Al Otaiba, S. A., Cihak, D., King, A., & Avalos, A. (2007). Effects of a peer-mediated program on reading skill acquisition for two-way bilingual first-grade classrooms. *Learning Disability Quarterly, 30*(3), 169–184. The study does not meet WWC evidence standards because it is a randomized controlled trial in which the combination of overall and differential attrition rates exceeds WWC standards for this area, and the subsequent analytic and comparison groups are not shown to be equivalent.

Calhoon, M. B., Al Otaiba, S., Greenberg, D., King, A., & Avalos, A. (2006). Improving reading skills in predominantly Hispanic Title 1 first-grade classrooms: The promise of peer-assisted learning strategies. *Learning Disabilities Research & Practice, 21*(4), 261–272. The study is ineligible for review because it does not use a sample aligned with the protocol; the sample is less than 60% English language learners.

McMaster, K. L., Kung, S.-H., Han, I., & Cao, M. (2008). Peer-assisted learning strategies: A "Tier 1" approach to promoting English learners' response to intervention. *Exceptional Children, 74*(2), 194–214. 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.