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Thank you for your request to our REL Reference Desk regarding evidence-based information about reciprocal teaching at the secondary level. Ask A REL is a collaborative reference desk service provided by the ten regional educational laboratories (REL) that, by design, functions much in the same way as a technical reference library. It provides references, referrals, and brief responses in the form of citations on research based education questions.

The information below represents the most rigorous research available. Researchers consider the type of methodology and give priority to research reports that employ well described and thorough methods. The resources were also selected based on the date of the publication with a preference for research from the last ten years. Additional criteria for inclusion include the source and funder of the resource.

**Question:** *I am looking for research that has been done in the secondary level (specifically science and/or social studies) that has used reciprocal teaching as a comprehension strategy. I find a lot of research showing how reciprocal teaching is effective, but it has either been done in elementary schools or in Language Arts/Reading classes. I need information that my content area teachers will be able to relate to more. They are a little resistant at the idea that every teacher is a reading teacher and I am trying to show them that reciprocal teaching can be used effectively in their content area.*

### **Search Process**

**Key words and search strings used in the search:** *reciprocal teaching AND secondary; reciprocal teaching AND content area instruction; reciprocal teaching AND science OR social studies*

### **Search databases and websites:**

1. ERIC: <http://www.eric.ed.gov/>
2. JSTOR: <http://www.jstor.org/action/showAdvancedSearch>
3. Google Scholar: [www.google.com/scholar](http://www.google.com/scholar)
4. Institute of Education Sciences (IES) Resources: <http://ies.ed.gov>
5. What Works Clearinghouse: <http://ies.ed.gov/ncee/wwc/>

### **Sample Citations Retrieved:**

#### **Science**

Palinscar, A. S. & Herrenkohl, L. R. (2002). Designing collaborative learning contexts. *Theory into Practice*, 41(1), 26-32. doi: 10.1207/s15430421tip4101\_5

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**Abstract/Summary:** Summarizes lessons learned across two programs of research which featured peer collaboration to promote advanced literacies, including text comprehension and scientific reasoning, identifying lessons learned from reciprocal teaching research and ways that this research influenced the design of cognitive tools and intellectual roles, which were intended to enhance student ability to engage in scientific problem solving.

### Social Studies

Lederer, J. M. (2000). Reciprocal teaching of social studies in inclusive elementary classrooms. *Journal of Learning Disabilities, 33*, 91-106. doi: 10.1177/002221940003300112

**Abstract/Summary:** Reading comprehension relies on the use of metacognitive strategies. Reciprocal teaching has been found to be an effective comprehension technique to use with students with learning disabilities. This study examined the effectiveness of reciprocal teaching during social studies instruction with several students with learning disabilities in fourth-, fifth-, and sixth-grade inclusive classrooms. One hundred and twenty-eight students in Grades 4, 5, and 6 participated. Four comprehension assessments were administered, as well as an external measure and 30-day maintenance assessment. A mixed-design MANOVA was used to determine interaction on three reading comprehension measures. Results indicated that all students improved their performance on comprehension measures compared with students in the control groups. Improvement continued to be displayed after 30 days in both the sixth and the fourth grades. Students with learning disabilities significantly improved their ability to compose summaries compared to the control students.

### Science and Social Studies

Alfassi, M. (2004). Reading to learn: Effects of combined strategy instruction on high school students. *The Journal of Educational Research, 97*(4), 171–184. doi: 10.3200/JOER.97.4.171-185

**Abstract/Summary:** The author reported results of two sequential and interrelated studies that examined the efficacy of combining two models of reading strategy instruction -- reciprocal teaching and direct explanation. The studies were implemented in a high school in the Midwest. The literature documents that even mainstream high school students have serious deficits in higher order cognitive skills necessary for comprehension. Yet, few studies focus on secondary students, and almost none relate to high school students identified as proficient learners. The reported studies were designed to determine the effectiveness of combined strategy instruction incorporated into the school curricula in promoting strategic reading while fostering students' ability to perform reading comprehension tasks that require high levels of knowledge

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construction. Findings in this article suggest that combined strategy instruction may be beneficial in providing students with tools that will enable them to apply higher order cognitive processes while they learn from text.

Palinscar, A. S. & Brown, A. L. (1984). Reciprocal teaching of comprehension: Fostering and monitoring activities. *Cognition and Instruction, 1*, 117–175. doi: 10.1207/s1532690xci0102\_1

**Abstract/Summary:** Two instructional studies directed at the comprehension-fostering and comprehension-monitoring activities of seventh grade poor comprehenders are reported. The four study activities were summarizing (self-review), questioning, clarifying, and predicting. The training method was that of reciprocal teaching, where the tutor and students took turns leading a dialogue centered on pertinent features of the text. In Study 1, a comparison between the reciprocal teaching method and a second intervention modeled on typical classroom practice resulted in greater gains and maintenance over time for the reciprocal procedure. Reciprocal teaching, with an adult model guiding the student to interact with the text in more sophisticated ways, led to a significant improvement in the quality of the summaries and questions. It also led to sizable gains on criterion tests of comprehension, reliable maintenance over time, generalization to classroom comprehension tests, transfer to novel tasks that tapped the trained skills of summarizing, questioning, and clarifying, and improvement in standardized comprehension scores. Many of these results were replicated in Study 2. In contrast to Study 1, which was conducted by an experimenter, Study 2 examined group interventions conducted by volunteer teachers with their existing reading groups.

Gajria, M., Jitendra, A. K., Sood, S. (2007). Improving comprehension of expository text in students with LD: A research synthesis. *Journal of Learning Disabilities, 40*, 210-225. doi: 10.1177/00222194070400030301

**Abstract/Summary:** This article summarizes the findings of research studies designed to improve the comprehension of expository text for students with learning disabilities. Twenty-nine studies were located that met the inclusion criteria. Interventions gleaned from the review were categorized as content enhancement (i.e., advance and graphic organizers, visual displays, mnemonic illustrations, and computer-assisted instruction) or cognitive strategy instruction (i.e., text structure, main idea identification, summarization, questioning, cognitive mapping, reciprocal teaching). Treatment outcomes are discussed in relation to the various instructional approaches, student characteristics (e.g., grade, IQ), instructional features (e.g., materials, treatment length), methodological features, strategy maintenance, and generalization components. Implications for classroom practice and future research directions are provided.

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Kosanovich, M. L., Reed, D. K., & Miller, D. H. (2010). Bringing literacy strategies into content instruction: Professional learning for secondary-level teachers. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Retrieved from <http://www.centeroninstruction.org/files/Bringing%20Literacy%20Strategies%20into%20Content%20Instruction.pdf>

**Abstract/Summary:** This document provides research-based guidance on academic literacy instruction in the content areas. It is intended for use by literacy specialists and other technical assistance providers in their work with states to improve educational policy and practice in adolescent literacy. Specifically, it focuses on the effective use of text in content areas.

Rosenshine, B., & Meister, C. (1994). Reciprocal teaching: A review of the research. *Review of Educational Research*, 64(4), 479-530. doi: 10.3102/00346543064004479

**Abstract/Summary:** Reciprocal teaching is an instructional procedure designed to teach students cognitive strategies that might lead to improved reading comprehension. The learning of cognitive strategies such as summarization, question generation, clarification, and prediction is supported through dialogue between teacher and students as they attempt to gain meaning from text. This article is a review of sixteen studies on reciprocal teaching, which include published studies found in journal articles and unpublished studies indexed in Dissertation Abstracts International. All the studies included in this review were quantitative in methodology. When standardized tests were used to assess comprehension, the median effect size, favoring reciprocal teaching, was .32. When experimenter-developed comprehension tests were used, the median effect size was .88. We also discuss the role of cognitive strategies in enhancing comprehension, the strategies that were most helpful, instructional approaches for teaching cognitive strategies, the quality of the dialogue during reciprocal teaching, and suggestions for future research and practice.

Bottomley, D., & Osborn, J. (1993). Implementing reciprocal teaching with fourth- and fifth-grade students in content area reading: Technical Report No. 586. Urbana-Champaign, IL: University of Illinois. Retrieved from [https://www.ideals.illinois.edu/bitstream/handle/2142/17667/ctrstreadtechrepv01993i00586\\_opt.pdf?sequence=1](https://www.ideals.illinois.edu/bitstream/handle/2142/17667/ctrstreadtechrepv01993i00586_opt.pdf?sequence=1).

**Abstract/Summary:** A study was conducted to examine the implementation of reciprocal teaching with fourth- and fifth-grade students as they read their social studies and science textbooks. A distinctive feature of the study was that reciprocal teaching procedures were used in a whole-class, rather than a small-group instructional setting. Three teachers and 67 students participated in the study. Observations revealed that as reciprocal teaching instruction proceeded,

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more responsibility for initiating and sustaining discussion was transferred from the teachers to the students. After 20 days most of the reciprocal teaching procedures were implemented flexibly and in an appropriate manner. A variety of assessment measures were administered at intervals throughout the study to evaluate the effects of the procedure on students' comprehension.

### Mathematics

Van Garderen, D. (2004). Reciprocal teaching as a comprehension strategy for understanding mathematical word problems. *Reading & Writing Quarterly*, 20, 225–229. doi: 10.1080/10573560490272702

**Abstract/Summary:** Ms. Johnson was concerned about the inconsistent performance of several of her students in solving mathematical word problems. A number of her students were one to two grade levels below their grade placement in reading, spoke English as a second language, and had identified reading disabilities. On mathematics assignments that required minimal reading, all the students in Ms. Johnson's class performed adequately. The major state assessment in mathematics was in four months time, but Ms. Johnson was worried that these students might fail because the state assessment invariably contained a significant number of mathematical word problems. Ms. Johnson felt frustrated by her inability to help her students read and comprehend mathematical word problems.

### Referrals

#### **Organization:**

- Council of Chief State School Officers:  
[http://programs.ccsso.org/projects/adolescent\\_literacy\\_toolkit/](http://programs.ccsso.org/projects/adolescent_literacy_toolkit/)

#### **Federally Funded Resources:**

- Institute of Education Sciences (IES), public search engine available at:  
<http://ies.ed.gov/pubsearch/>
- What Works Clearinghouse: <http://ies.ed.gov/ncee/wwc/>
- Center on Instruction (<http://www.centeroninstruction.org>)

### **Disclaimer:**

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