



SYNOPSIS OF WRITING TO READ: EVIDENCE FOR HOW WRITING CAN IMPROVE READING

A CARNEGIE CORPORATION TIME TO ACT REPORT

INTRODUCTION

In the Writing to Read report, Graham and Hebert examine whether various approaches to writing instruction impact students' reading skills and comprehension. The authors describe a range of instructional practices that have demonstrated a positive effect on reading outcomes. Writing to Read builds upon the findings of a previous report, Writing Next¹, which offered instructional recommendations for improving the quality of students' writing. However, Writing to Read provides guidance on how teachers can use writing instruction to strengthen students' reading performance. Recent achievement data suggest that students need stronger reading and writing instruction. The need for more attention on both skills is evident in the results of the 2009 National Assessment of Educational Progress (NAEP) reading test, which revealed that 68% of fourth-graders, 69% of eighth-graders, and 64% of twelfth-graders scored at the basic level or below in reading. Similarly, 67% of eighth-graders and 76% of high school seniors scored at the basic level or below in writing on the 2007 NAEP writing test.

Students' reading and writing skills are not keeping pace with the growing demands of colleges and employers. This has wide-reaching economic and societal costs that prompted Graham and Hebert (2009) to explore writing instruction as a vehicle for enhancing reading. The authors used a rigorous methodology known as meta-analysis to

summarize data from individual studies addressing common questions about the relationship between writing instruction and reading outcomes. By synthesizing across studies, meta-analysis allows for a more powerful estimation of the consistency and effectiveness of an approach. Such information can help guide classroom teachers in selecting instructional strategies and planning lessons.

This synopsis of Graham and Hebert's meta-analysis presents an overview of their findings and describes implications for practice. Although

Writing to Read is straightforward, its comprehensive nature may limit its use as introductory material for practitioners or professional development events. Therefore, this synopsis is intended to serve as a first step that will encourage further exploration of the Writing to Read document. It is also intended as a companion to the Center on Instruction archived webinar (located at www.centeroninstruction.org) by the Writing to Read author, Dr. Steve Graham.

METHOD & RESULTS

The studies analyzed by Graham and Hebert included students in grades 1–12 who received writing instruction that was distinct from, rather than integrated with, reading instruction. For a study to be included in the meta-analysis, students must have received instruction in written spelling or created meaningful, connected written text. The students in the treatment groups must have been compared to students who did not receive the same amount or quality of writing instruction. For example, students in the comparison condition frequently received reading instruction only. Studies were included if they were published between 1930–2008, used an experimental or quasi-experimental design, and contained a reliable outcome measure of reading comprehension, word reading, or reading fluency. Studies were excluded if the writing instruction was identical to the reading outcome measure, such as when students were taught to write summaries of text and then were administered a reading comprehension test in which they

produced a written summary of a text.

Studies were also eliminated if the data needed to calculate an effect size² were not available. In all, the authors reported 93 comparisons from studies meeting the criteria.

Each identified study was then categorized based on the research question it answered. Some categories were further separated into instructional subcategories. Within the three broad recommendations and seven more specific sub-types of writing instruction, studies were combined to produce a weighted average effect for each. The example study provided in each category or subcategory is a

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² An effect size quantifies the strength of the effectiveness of an intervention by calculating the magnitude of the difference between the intervention group and the comparison group. Generally, an effect of 0.20 is considered small, 0.50 moderate, and 0.80 large. However, it is more difficult to find an effect when using standardized tests than when using researcher-designed tests, so effect sizes must be interpreted carefully. More information on how the analysis was conducted can be found in the Writing to Read document.

¹ Writing Next is available at: <http://www.all4ed.org/files/WritingNext.pdf>. A summary of the report is available at: <http://www.centeroninstruction.org/files/COI%20SPED%20Writing%20Next%20synopsis.pdf>



resource for further information about what is involved in the particular approach to instruction. Readers are also referred to the *Writing to Read* document available at http://carnegie.org/fileadmin/Media/Publications/WritingToRead_01.pdf, which offers more information on all the studies reviewed.

It should be noted that fewer than 25% of the studies focused on students who were low-achieving or English language learners.

In addition, some subcategories contained a more narrow range of grade levels. Where possible, disaggregated results are provided. However, it is often not possible to offer guidance for the writing practices that are particularly effective with students at certain ages or ability levels, and no recommendations are based on differences in levels of language proficiency. ■

INSTRUCTIONAL ELEMENTS

1. **Have students write about the text they read** (ES=0.40 with standardized tests, n=11³; ES=0.51 with researcher-designed tests, n=50). In general, having students in grades 2–12 organize and integrate ideas from a text into a coherent whole fostered analysis of and facilitated reflection on the important information. Positive effects were realized for writing about science, social studies, and English texts. Across the four subcategories of this recommendation, instruction in writing about texts was reported as potentially more effective than only receiving instruction in reading, reading and studying, or reading and discussing the text (ES ranged from 0.35–.49). Moreover, the practices were effective for lower-achieving students who were explicitly taught how to use the writing activities (ES=0.63).

Recommendation 1: Instructional practices listed in descending order of effectiveness

Have students write about the texts they read	
Have students respond to text	ES= 0.77 with researcher-designed tests, n= 9
Have students write summaries of a text	ES= 0.52 with researcher-designed tests, n= 19
Have students write notes about a text	ES= 0.47 with researcher-designed tests, n= 23
Have students answer questions about a text in writing, or create and answer written questions about a text	ES= 0.27 with researcher-designed tests, n= 8

a. **Have students respond to a text** (ES=0.77 with researcher-designed tests, n=9). Instructional methods in this subcategory involved writing personal reactions as well as analyzing and interpreting the text. For example, students might have

produced written responses to open-ended questions about the text (Wong, Kuperis, Jamieson, Keller, & Cull-Hewitt, 2002)⁴. Interestingly, students experienced positive effects on their reading comprehension from writing extended responses without having been explicitly taught how to do so, though, in these studies students often practiced applying the procedures for writing personal responses over a three- to four-month period.

b. **Have students write summaries of a text** (ES=0.52 with researcher-designed tests, n=19). Activities in this subcategory included writing synopses as short as one sentence to longer paragraphs created by following a series of steps. For example, Rinehart, Stahl, and Erickson (1986) taught the following rules for writing a summary: 1) identify or select the main information; 2) delete trivial information; 3) delete redundant information; and 4) write a short synopsis of the main and supporting information for each paragraph. Other practices involved completing outlines or graphic organizers that were subsequently converted to summaries. Students in grades 3–12 have benefited from this type of writing instruction, but the effect on reading comprehension was stronger for elementary students (ES=0.79) than for middle and high school students (ES=0.33).

c. **Have students write notes about a text** (ES=0.47 with researcher-designed tests, n=23). Note-taking involved a range of activities from unstructured directives from the teacher to take notes to more formal outlining or recording specific information in columns. In another practice, students

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³ ES refers to the average effect size for that particular comparison, and n is the number of studies on which the effect size is based. Using the first ES and n as an example, students who wrote about the texts they read outperformed students who did not by about .40 of a standard deviation on reading tests. This effect size was based on an average of the results of 11 studies.

⁴ For each of the subcategories in recommendations 1 and 2 as well as for recommendation 3, one study included in the *Writing to Read* document is referenced as an example of the types of studies included. These examples simply provide a starting point for readers who wish to learn more. See *Writing to Read* for a complete list of the studies included under each recommendation.



were explicitly taught to create concept maps that depicted the relationships among important textual ideas using circles linked with words or lines (Chang, Chen, & Sung, 2002). The approaches may have improved the reading comprehension of students in grades 3–12 because they required students to condense important information and to organize it so that it can be related to other information (including prior knowledge). This process helped students generate new understandings of text.

- d. **Have students answer questions about a text in writing, or create and answer written questions about a text** (ES=0.27 with researcher-designed tests, n=8). Writing the answers to a teacher's or a student's own questions about a text was a means of rehearsing information and making text information available for further study and transformation. Practices, such as having students respond to questions embedded throughout a text and verify their answers (Peverly & Wood, 2001), had positive effects on reading comprehension for students in grades 6–12.
2. **Teach students the writing skills and processes that go into creating text.** Evidence supports the notion that the types of writing instruction described in the subcategories of this recommendation strengthened a variety of reading skills.

Recommendation 2: Instructional practices listed in descending order of effectiveness

Teach students the writing skills and processes that go into creating text	
Teach spelling and sentence construction skills	ES= 0.79 with standardized tests and research-designed tests combined, n= 4
Teach spelling skills	ES= 0.68 with standardized tests and research-designed tests combined, n= 5
Teach the process of writing, text structures for writing, paragraph or sentence construction skills	ES= 0.18 with standardized tests, n= 12; ES= 0.27 with researcher-designed tests, n= 5

- a. **Teach the process of writing, text structures for writing, paragraph or sentence construction skills** (ES=0.27 with researcher-designed tests, n=5; ES=0.18 with standardized tests, n=12). Teaching students how to put smaller units of writing together to form longer or more complex sentences and paragraphs facilitated reading comprehension. A wide variety of instructional practices was included in this subcategory and might have involved

collaborative writing activities and/or the use of text structure, such as the elements of persuasion, to construct particular types of compositions (Crowhurst, 1991). The process approach to writing (engaging students in cycles of planning, drafting, revising, and publishing) was effective with students in grades 1–4. Whereas, explicit instruction in spelling, sentence combining, and multi-paragraph composition was beneficial for students in grades 4–12. When the various types of writing instruction were compared to reading or reading instruction alone, effect sizes were slightly improved (ES=0.23 with standardized tests, n=9; ES=0.30 with researcher-designed tests, n=4).

- b. **Teach spelling and sentence construction skills** (ES=0.79 with standardized tests and researcher-designed tests combined, n=4). Activities in this subcategory focused on the spelling patterns of letters and sounds in words or the formation of complex sentences from smaller units of writing (e.g., Neville & Searles, 1991) as a means to improving the fluency with which students were able to read texts. This type of writing instruction improved reading fluency for students in grades 1–7. When compared to reading instruction alone, the effect was slightly stronger (ES=0.87, n=3).
- c. **Teach spelling skills** (ES=0.68 with standardized tests and researcher-designed tests combined, n=5). Spelling instruction focused on the patterns of letters and sounds in words was effective at improving students' word reading skills, (e.g., Conrad, 2008). Students in grades 1–5 were able to better identify and remember words when they received spelling instruction. When compared to reading instruction alone, the effect was slightly stronger (ES=0.77, n=4).
3. **Increase how much students write** (ES=0.30 with standardized tests, n=6). Effective instructional practices that involved increasing the amount of writing students completed included: writing about individually-selected or group-selected topics, sustained writing for 15 minutes, emailing pen pals, making journal entries, and using dialogue journals to interact with others. Students in grades 1–6 benefited from writing more and from cross-age written communication such as writing to an older or younger student pen pal (Dana, Scheffler, Richmond, Smith, & Draper, 1991). ■



As with the recommendations made in *Writing Next*⁵, Graham and Hebert caution that the practices described in *Writing to Read* do not constitute a full writing curriculum. The authors further caution that writing practices should not supplant critical instruction in reading skills but should be implemented in conjunction with the latter. Reading and writing are complementary processes that can be used to strengthen each other in reciprocal fashion. Moreover, instruction needs to be ongoing. Brief or infrequent opportunities to write and apply developing writing skills will not result in the kinds of effects demonstrated in the studies reviewed. Students, particularly those who are low achieving, are likely to need explicit instruction in how to write different types of texts of different complexities and to need feedback that guides them in becoming more proficient readers and writers.

It is encouraging that writing activities were effective when applied with a variety of reading material and in different subject areas. However, researchers have not yet identified what combination of the writing practices is best or how much instruction is necessary. In addition, most research on reading comprehension outcomes (81% of the studies included in the meta-analysis) has been conducted with students in grades 6 and above; whereas, research on fluency and word identification outcomes was almost exclusively conducted in the lower grade levels. Given these limitations and the fact that very little is known about the effects for students who are low achieving or English language learners, Graham and Hebert note that the writing practices recommended here should be “used and combined flexibly and thoughtfully” (p. 26) to more appropriately meet the

Reading and writing are complementary processes that can be used to strengthen each other in reciprocal fashion.

needs of different students in different contexts. Clearly, more research is needed to determine whether there is a relationship between student characteristics and the effectiveness of different writing practices.

Additional research is needed on implementing the writing process to improve students’ reading performance. No studies were identified that examined the effect on reading when process

writing was combined with skills instruction. Nor were there studies focusing on the effects of process writing with older students. And although the approach has been studied in grades 1–4, it typically has not included explicit instruction in planning and revising.

It should also be noted that the writing instruction described in the document may require ongoing professional development designed to build and support the pedagogical

skills necessary to impact student learning. For many teachers, these kinds of practices will be unfamiliar. However, a quality professional development plan that includes opportunities for collegial interaction will make it more likely that teachers and their students benefit from the information to the fullest extent.

If students receive the kinds of instruction that enable them to develop strong writing skills, the evidence rather consistently indicates that writing can be used to bolster reading achievement. *Writing to Read* includes a full description of the recommendations, effect sizes for each intervention included in the meta-analysis, and additional technical information on how the meta-analysis was conducted. Readers interested in learning more are encouraged to read the full document available at: http://carnegie.org/fileadmin/Media/Publications/WritingToRead_01.pdf. ■

⁵ *Writing Next* is available at: <http://www.all4ed.org/files/WritingNext.pdf>. A summary of the report is available at: <http://www.centeroninstruction.org/files/COI%20SPED%20Writing%20Next%20synopsis.pdf>

This publication was created for the Center on Instruction by The Florida Center for Reading Research at Florida State University. The Center on Instruction is operated by RMC Research Corporation in partnership with the Florida Center for Reading Research at Florida State University; Instructional Research Group; the Texas Institute for Measurement, Evaluation, and Statistics at the University of Houston; and The Meadows Center for Preventing Educational Risk at The University of Texas at Austin. The contents of this document were developed under cooperative agreement S283B050034 with the U.S. Department of Education. However, these contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government. Editorial, design, and production services provided by RMC Research Corporation.

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Preferred citation: Center on Instruction. (2011). *Synopsis of “Writing to read: Evidence for how writing can improve reading. A Carnegie Corporation Time to Act Report.”* RMC Research Corporation, Portsmouth, NH.

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