# It All Starts Here Fixing Our National Writing Crisis From the Foundation

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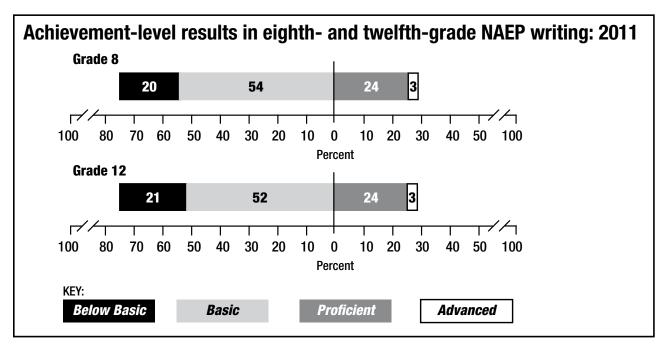


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# **Introduction: A National Writing Crisis?**

What's wrong with our young writers? The news media report that many of our students are not able to write at even the most basic level required for participation in today's economy. The class of 2012 attained an average score of 488 on the writing portion of the SAT, the lowest score since the assessment was introduced in 2006. The National Assessment of Educational Progress (NAEP) tells a similar story: In 2011, only 27% of 8th and 12th grade students scored at or above proficient on the writing portion of the NAEP. In the same assessment, 20% of 8th graders and 21% of 12th graders scored "below basic," meaning they are unable to perform at even the minimum standard for their grade level.



NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2011 Writing Assessment.

These scores tell us that many of our middle and high school students are not going to be ready for college or the demands of the workplace. The College Board's SAT exam is widely seen as a strong predictor of college and career readiness. According to the College Board, only 43% of SAT testers in the class of 2012 are ready for college-level work (College Board, 2012). And of course the SAT only measures those students who are aspiring to attend college. What can we surmise about the workforce readiness of the nearly 60% of students who did not take the SAT last year?

"The writing section [of the SAT] requires students to communicate ideas clearly and effectively; improve writing through revision and editing; recognize and identify sentencelevel errors; understand grammatical elements and structures and how they relate to each other in a sentence; and improve coherence of ideas within and among paragraphs." — The College Board Is this a writing crisis? Are today's students truly performing at the lowest level ever? It's difficult to get a true longitudinal picture of student performance over time. While SAT scores for both writing and language arts show declines in recent years, participation among high school students is also at an all-time high (College Board, 2012). This means that a larger and much more diverse selection of students are taking the test, which is a positive development. But the results show us that many of these aspiring college entrants are not prepared for the rigors they will face in the college classroom. NAEP writing scores—which look at all students, not just the collegebound—show that we have remained largely stagnant for decades (National Center for Educational Statistics, 2012). Changes in the test protocol, including a recent move to computerized testing, make it impossible to directly compare scores across time. However, it appears that writing achievement levels have been roughly the same since the 1970s.

So why is this now a crisis? The problem is that the world has not remained the same since the 1970s. We have transitioned to a knowledge economy that demands higher levels of literacy and stronger communication skills for all workers (Business Roundtable, 2009; The Conference Board, 2006). Students who cannot meet these demands are at risk of being left behind in the 21st century economy.

If we want our students to succeed in higher education and have productive careers, we must ensure that all students achieve gradelevel proficiency in writing. How? The answer starts long before students face the 8th grade NAEP or the SAT. If we are going to fix our writing problem, we have to start at the beginning: with the foundational skills in the early grades that prepare students for higher-level thinking and writing. "NAEP measures these writing abilities:

- To persuade, in order to change the reader's point of view or affect the reader's action.
- To explain, in order to expand the reader's understanding.
- To convey experience (real or imagined), in order to communicate individual and imagined experiences to others."
  - National Center for Education Statistics

# Why Does Writing Matter?

In our increasingly technology-mediated society, we can no longer afford to consider writing a skill for the privileged few. Writing is one of the primary ways that we persuade and inform, both socially and professionally. We interact through tweets, texts, blogs, wikis, emails, presentations, and other forms of formal and informal writing. The ability to communicate through these media has become a gatekeeper for full participation in economic and social life. Writing instruction is critical for several reasons:

• Students are facing new standards

and assessments. The growing recognition of the importance of writing for learning and college and career readiness has led to an increased emphasis on writing in state and national standards. The Common Core State Standards (CCSS) require extensive writing across the curriculum in each of the text types, including Opinion or Argument, Informative/Explanatory, and Narrative. The new standards and assessments have been developed to better prepare students for the kind of learning and thinking they will need for success in higher education and the 21st century workplace. By 2014, schools will be facing new, more rigorous assessments with a much greater emphasis on writing. The assessments developed by the Partnership for Assessment of Readiness for College and Careers (PARCC) and Smarter Balanced Assessment Consortium (SBAC)—now adopted by all but five states integrate more extensive writing in order to assess deeper levels of knowledge and understanding than traditional multiple choice

- "In today's workplace writing is a 'threshold skill' for hiring and promotion among salaried (i.e., professional) employees. Survey results indicate that writing is a ticket to professional opportunity, while poorly written job applications are a figurative kiss of death."
  - National Commission on Writing for America's Families, Schools, and Colleges, September 2004

assessments. Many of our students are not prepared for the amount and types of writing required on the new assessments, or for the higher-order thinking skills they will be expected to demonstrate.

Writing increases academic success. Writing is not just important for transactional communication.
 Writing, like reading, is a foundational skill that can boost comprehension and achievement across all subject areas (Bangert-Drowns, Hurley, & Wilkinson, 2004). Direct writing instruction and frequent practice improve

Two billion dollars is spent each year on remedial courses for postsecondary students (Fulton, 2010). overall reading proficiency (Graham & Perin, 2007b). Writing about the texts they are reading has been shown to increase comprehension for students across all grade levels (Graham & Hebert, 2010). "Writing-to-learn" activities such as summarizing, note-taking, and response writing help students solidify new concepts, make connections to what

they already know, organize their thinking, and think critically about what they are learning (Applebee, 1984; Emig, 1977; Klein, 1999). In fact, many would say that writing is thinking. Writer E. M. Forster famously said, "How do I know what I think until I see what I say?"

• The 21st century workplace demands writing competence. The students in school today will step into a workforce that is very different from the one their parents and grandparents entered (Business Roundtable, 2009; The Conference Board, 2006). Trends in technology innovation and global outsourcing have eliminated many of the low- and medium-skilled manufacturing and service jobs on which previous generations relied. Instead, today's students are entering a "knowledge-based" economy in which the majority of jobs demand extensive written communication (Trilling & Fadel, 2009). The jobs that are available now require, on average,

a higher level of literacy skill than entry-level jobs did just ten or twenty years ago—and this trend is accelerating (Gordon, 2009; Business Roundtable, 2009). In fact, a survey of employers by the College Board for the National Commission on Writing in 2004 found that two thirds of salaried employees across all industries have some level of writing responsibility (National Commission on Writing, 2004). While not all

Businesses spend 3.1 billion dollars annually to remediate workers whose writing skills are lacking (National Commission on Writing, 2004).

knowledge-based jobs require a traditional four-year college degree, the Georgetown Center on Education and the Workforce estimates that 63% of jobs will require some form of postsecondary education by 2018 (Carnevale, Smith, & Strohl, 2010). This means that we must prepare a much larger segment of our student population for college or advanced training. And we can't neglect students who will directly enter the workforce, either. More and more, experts tell us that the skills students need for success in college and the skills they need for success in the workplace are one and the same (Association for Career and Technical Education—ACTE, Partnership for 21st Century Skills, and National Association of State Directors of Career and Technical Education Consortium, 2010). Writing is one of these critical skills.

# The Importance of Foundational Writing Skills

If we want to set our students up for success on the new assessments and Common Core State Standards, not to mention for success beyond the classroom, we can't afford to skimp on writing instruction. Students need to have ample time and explicit instruction in writing across all grade levels. Nowhere is this more important than in the early grades, where the foundation for future achievement is established.

Over 90% of white-collar workers and 80% of blue-collar workers identify writing as an important skill for success on the job (National Commission on Writing, 2006). While learning to speak comes naturally to nearly all of us, writing is a largely unnatural skill that must be explicitly taught and learned (Wolf, 2007). A child learning to write is actually developing the knowledge, skills, and processes that lay the foundation for skilled writing: how to recognize letters and how to shape them, how letters go together to form words, and how those words are put together to form sentences. These processes are developed concurrently, alongside reading comprehension skills and an awareness of genre and narrative structure. As writing proficiency grows, students learn more complex skills like how to develop a compelling narrative or an effective argument. Students who fail to develop some or all of the basic skills and processes in the early years will have a much harder time keeping up with their peers in more complex writing tasks. It is much more effective to address literacy problems in the early grades than it is to try and fix them later in a student's academic career (Slavin, Madden, & Karweit, 1989). Let's take a closer look at these foundational skills and how they set the stage for writing achievement in the higher grades.

• **Handwriting:** It may seem less relevant in a world dominated by technology, but handwriting instruction and practice has been linked to better letter perception, reading fluency, and writing fluency—and ultimately to better writing proficiency (Berninger, 2012). Automaticity is the ability to perform a task or recall information from memory "quickly, accurately and effortlessly" (Christensen, 2009). When students struggle with basic skills like letter formation, there is less working memory left over for higher-order tasks such as developing a

logical argument (Galbraith & Torrence, 2006; Beringer, Vaughan, Graham, Abbott, Abbott, Rogan, et al, 1997). When students achieve automaticity in handwriting, it reduces the cognitive load and allows them to concentrate on ideation, genre, and creative expression. This may explain why students who received explicit instruction in handwriting have demonstrated greater gains in compositional fluency than peers who received instruction in phonological awareness (Graham, Harris, & Fink, 2000). As students begin composing using computers, automaticity in

"Automaticity in handwriting is an essential prerequisite to the creation of high quality, creative and well-structured text." — Carol A. Christensen

keyboarding becomes equally important (Shorter, 2001). However, technology does not reduce the need for explicit handwriting instruction and practice in the early grades, especially since students in most schools do most of their writing at school by hand (Cutler & Graham, 2008; Gilbert & Graham, 2010).

- **Spelling:** In addition to mastering the skill of letter creation, students must learn how letters work together to form words. Poor spelling, in addition to negatively impacting the reader's perception of writing quality (Graham, Harris, & Hebert, 2011b), can interfere with other writing processes. Automaticity in spelling is a second important component of writing fluency (Galbraith & Torrence, 2006). Studies show that explicit spelling instruction in the early grades is linked to better composition in later grades (Berninger & Fayol, 2008). Evidence also links explicit spelling instruction to greater phonological awareness and reading proficiency (Graham & Santangelo, 2011).
- Vocabulary Development: A strong vocabulary is critical for both reading comprehension and effective writing. An extensive meaning vocabulary (the words a student can understand and use) is necessary for effective communication and expression. Writers must be able to choose the right word to convey their meaning and intention, and to capture the reader's interest (Olinghouse & Wilson, 2012). While readers can rely on context cues and other clues when encountering unfamiliar words,

in order to write students must be able to spontaneously recall words and have a clear understanding of their meaning and usage (Corona, Spangenberger, & Venet, 1998). Developing the vocabulary necessary to be a skilled and flexible writer requires direct and explicit teaching of appropriate grade-level and subject-area vocabulary (Laflamme, 1997).

 Sentence Construction: Learning how to effectively use a variety of sentences to convey intended meaning and emphasis helps writers to keep readers engaged and ensure that readers

understand their message. Students who struggle with sentence construction have trouble effectively translating their ideas into text. Sentence-combining practice, in which students are taught different kinds of sentence constructions and practice combining short, simple sentences into more complex sentences, has been shown to improve the quality of writing for students (Saddler & Graham, 2005). Students in these studies used more complex and varied syntax to express themselves (Andrews, et al, 2006).

"The difference between the almost right word and the right word is really a large matter it's the difference between the lightning bug and the lightning." — Mark Twain

- Writing Process: Multiple studies have demonstrated the importance of explicit instruction in the writing process (Graham & Perin, 2007a). In the process-writing instructional model, students systematically plan (or prewrite), draft, revise, edit, and publish their writing. With this approach, teachers model each step in the process for students. Teaching the writing process has been shown to have a positive impact on NAEP writing scores (Goldstein & Carr, 1996). Students whose teachers have been trained through the National Writing Project (NWP), which supports this approach, demonstrated higher achievement in writing (Pritchard & Honeycutt, 2006; Graham & Perin, 2007b).
- Writing Strategies: In addition to understanding the writing process, students also need specific strategies to employ at each stage of the process, such as brainstorming, outlining, goal setting, or self-evaluation. Strategy instruction has been shown to be effective in increasing the overall quality of students' writing (Graham, 2006). Effective strategy instruction incorporates both task-specific strategies, such as using a graphic organizer to plan your writing, and metacognitive strategies, such as evaluating the effectiveness of your draft using a rubric (Luke, 2006; Guzel-Ozmen, 2009; Jacobs, 2004). Robust strategy instruction has been linked to gains in writing quality that can be measured at least two years later, suggesting that students continue to use and benefit from the tools they have mastered long after instruction has taken place (Fidalgo, Torrance, & Garcia, 2008).
- Genre Knowledge: Students must be able to apply writing skills across a variety of genres and be able to write for a variety of purposes. The Common Core State Standards (CCSS) require students to be proficient in multiple text types, including Opinion or Argument, Informative/Explanatory, and Narrative. Each of these text types has its own structure, conventions, and purpose. While even young students demonstrate an awareness of genre when communicating orally, learning how to use the different text types effectively in writing is a slow and gradual process (Beers & Nagy, 2011). This is especially true of academic and expository writing (Snow & Uccelli, 2009; Berman & Ni-Sagiv, 2007). Explicitly teaching students about the basic elements and characteristics of different types of text results in improved narrative and expository text (Graham, Kiuhara, McKeown, & Harris, in press).

## Fixing the Foundation: A Prescription for Future Writing Success

Preparing students for the writing they will face on high-stakes assessments in the postsecondary classroom and on the job requires a strong commitment to writing instruction across all grade levels. This commitment must start at the earliest grades and with the most fundamental writing skills. If we do not fix emerging literacy problems at the foundation, students will not have the building-block skills that they need to successfully master more complex writing processes (Slavin, Madden, & Karweit, 1989). As students grow and develop as writers, there are some recommendations that are critical at all grade levels:

- Provide ample time for writing. Perhaps no other recommendation is more important than this—we must
  provide students with lots of opportunities to practice and apply writing skills. Students should be writing for
  multiple purposes across all grade levels and content areas (Graham, Bollinger, Olson, D'Aoust, MacArthur,
  McCutchen, & Olinghouse, 2012). The more time students spend writing, the more they develop confidence and
  fluency (Graham, Kiuhara, McKeown, & Harris, in press). There is also a corresponding improvement in children's
  reading comprehension skills as they write more (Graham & Hebert, 2010). Writing should not just be limited to
  the language arts, but should be used to stimulate thinking about science, social studies, math, and other subjects
  (Bangert-Drowns, Hurley, & Wilkinson, 2004).
- Use frequent assessment to inform instruction. Students improve their writing abilities when they receive frequent feedback and learn how to assess their own writing (Graham, Harris, & Hebert, 2011a). Ongoing assessment allows teachers to evaluate the student's strengths and weaknesses and provide specific strategies for improvement. The use of rubrics, such as the 6+1 Trait® Writing Model, can also improve writing performance by training students to self assess their writing during and after the writing process (Andrade, Du, & Wang, 2008).

- Explicitly teach writing skills as well as writing processes and strategies. Students must master the knowledge, skills, and processes of effective writers. Teachers should provide direct instruction and modeling for specific writing strategies and processes, and then scaffold learning until students master each strategy on their own (Graham & Perin, 2007b). For example, teachers might expose students to examples of effective expository text, model strategies for planning and organizing this text type, and then allow students to apply these strategies to their own writing. Models and templates can help provide scaffolding until students become proficient with each strategy (Fisher & Frey, 2007; Graham & Harris, 2007). This approach arms young writers with a variety of different tools that they can use as they become independent writers (Luke, 2006).
- **Teach multiple text types.** Students should be exposed to models of writing in different genres from the early elementary years, and should have instruction specific to each genre (Beers & Nagy, 2011). Students should have opportunities to apply writing skills across all of the text types required by the Common Core State Standards (Opinion or Argument, Informative/Explanatory, and Narrative). As students advance into higher grade levels, the standards include heavier emphasis on Opinion or Argument and Informative/Explanatory writing with less focus on pure Narrative. This mirrors the increased emphasis on content-area nonfiction reading. Helping students to master multiple text types will prepare them for the kinds of writing they will need to do in college and in the workforce.
- Write across the curriculum. Writing instruction should not be limited to English or language arts. Students should write for different purposes across all subject areas, from science and math to social studies and humanities. Writing across different subject areas helps to develop an understanding of genre and purpose in writing (Beers & Nagy, 2011). In addition, writing reinforces learning across all subject areas (Bangert-Drowns,

et al, 2004; Graham & Hebert, 2010). Integrating writing into subject-area instruction develops deeper comprehension and higher-order thinking processes (Applebee, 1984; Emig, 1977; Klein, 1999).

- Integrate appropriate technology. Word processing programs and other technologies can have a positive impact on students' writing (Goldberg, Russell, & Cook, 2003). Word processing technology makes editing and revising less arduous, and allows students to focus on higher-order skills such as planning, organizing, and evaluating (Coppola, 2004). As PARCC and SBAC gear up for next-generation computerized writing assessments, it is also critical that students become proficient in the technology that they will face in the testing environment. Keyboarding automaticity, just like handwriting, is important to free up working memory and processing power for more complex tasks (Shorter, 2001).
- Establish a positive environment for writing. Developing writers need to have a safe and supportive learning environment where they can apply newly developed writing skills, knowledge, and strategies and confidently share their ideas and text with others (Graham, 2010). Scaffolding instruction to provide appropriate support as students move towards independence helps build confidence as students work to master new techniques and strategies (Fisher and Frey, 2007; Graham & Perin, 2007b).

#### Establishing a Positive Environment for Writing

Teachers can:

- Be enthusiastic about writing and sharing their own writing with students.
- Create a positive writing environment, where students are encouraged to try hard and attribute success to effort and the tactics they are learning.
- Set high expectations for students, encouraging them to surpass their previous writing accomplishments.
- Provide just enough support so that students can carry out writing tasks and processes, while encouraging development of self-sufficiency.
- Adapt writing assignments and instruction to the needs of individual students.

# **Conclusion: From Writing Crisis to Writing Revolution**

If we want our students to succeed in the world beyond the classroom, we must recognize that writing is a critical skill for all children. The shift to a knowledge-based economy is expected to continue and perhaps even accelerate, requiring an increasing level of writing proficiency for workers across all industries and job levels. The recent NAEP and SAT scores make it all too clear that many of our students are not prepared for the writing requirements they will face in college-level coursework or in the workplace. For many of these students, poor writing skills will be a barrier to entry into the 21st century economy.

We cannot afford to let that happen. It is wonderful that more students are aspiring to higher education and taking the SAT. We need every one of these aspiring scholars to have the skills necessary for success in college-level work if we are going to meet the projected workplace demands over the next decade. We also need to make sure that students who enter the workforce right after high school have the necessary literacy and communication skills to navigate our text-rich world.

- Give young students a solid foundation. If we want to see NAEP and SAT scores improve for tomorrow's 8th and I2th graders, we need to start now to ensure that our youngest scholars are building a solid foundation in building-block skills like handwriting, keyboarding, spelling, vocabulary, and sentence construction. We also need to explicitly teach knowledge of different types of writing and their purposes and strategies for planning or prewriting, drafting, revising, editing, and publishing text to students at all grade levels. And we need to show students how to use writing to enhance their understanding of the texts they are reading and material presented in class. We cannot skip some of these fundamentals and expect students to leapfrog into higher-order thinking and writing achievement. This means that we must make writing instruction a priority from the very earliest levels, and invest the time, resources, and teacher training to make it effective.
- Address older students' struggles with intervention. Making writing instruction a priority for young students does not mean that we should give up on older struggling and emerging writers currently in our middle and high school classrooms. These students preparing for the next rounds of NAEP and SAT testing should be given every chance of success, including intensive intervention for students who are not meeting grade-level expectations. In many cases, we will find that these students need to go back and revisit foundational skills that they missed in their elementary years. But we must recognize that after-the-fact intervention to fix fundamental skills is crisis management. It is both more expensive and less effective than addressing the problems in the early grades where they arise. Many of these students will never catch up if we miss these early windows of opportunity.
- Share responsibility across the education community. We need all members of the education community to work together to prepare students for the demands of the knowledge economy. Writing is not just the responsibility of language arts and English teachers. Teachers across the curriculum, along with their partners in the wider education community, must all take responsibility. Already, we are moving towards more effective and rigorous standards and assessments that provide a better measure of the skills necessary for higher education. Assessment designers need to continue to evolve these tests to make sure that they accurately measure career and college readiness and provide teachers with useful information. Publishers need to develop writing programs that are informed by solid research into writing development and effective instructional practices. Educators and administrators need to make a commitment to implementing effective, research-based programs and supporting them with time and resources in the classroom. If we all work together, we can eliminate our writing crisis by strengthening writing instruction at the foundation.

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## **Bibliography**

- Andrade, H. L., Y. Du, and X. Wang, X. (2008). Putting rubrics to the test: The effect of a model, criteria generation, and rubric-referenced self-assessment on elementary school students' writing. *Educational Measurement: Issues and Practice*, 27, 3–13
- Andrews, R., C. Torgerson, S. Beverton, A. Freeman, T. Locke, G. Low, A. Robinson, and D. Zhu. (2006). The effects of grammar teaching on writing development. British Educational Research Journal, 32, 39–55.
- Applebee, A. (1984). Writing and reasoning. Review of Educational Research, 54, 577-596.
- Bangert-Drowns, R. L., M. M. Hurley, and B. Wilkinson. (2004). The effects of school-based Writing-to-Learn interventions on academic achievement: A meta-analysis. *Review of Educational Research*, 74, 29–58.
- Beers, S. F., and W. E. Nagy. (2011). Writing development in four genres from grades three to seven: Syntactic complexity and genre differentiation. *Reading and Writing*, 24, 183–202.
- Berman, R. A., and B. Nir-Sagiv. (2007). Comparing narrative and expository text construction across adolescence: A developmental paradox. *Discourse Processes*, 43, 79–120.
- Berninger, V. W. (2012). Strengthening the mind's eye: The case for continued handwriting instruction in the 21st century. *Principal*, May/June 2012.
- Berninger, V. W., K. R. Vaughan, S. Graham, R. D. Abbott, S. P. Abbott, L. W. Rogan, et al. (1997). Treatment of handwriting problems in beginning writers: Transfer from handwriting to composition. *Journal of Educational Psychology*. 89(4), 652–666
- Berninger, V. W., and M. Fayol. (2008). Why spelling is important and how to teach it effectively. In D. G. Jamieson and J. Balayeva (Eds.) *Encyclopedia of language and literacy development*. London, ON: Canadian Language and Literacy Research Network.
- Business Roundtable. (2009). Getting ahead—staying ahead: Helping America's workforce succeed in the 21st century. Retrieved October 2012 from businessroundtable.org/.../BRT\_Getting\_Ahead\_online\_version\_l.pdf.
- College Board. (2012). Report on College and Career Readiness 2012. Retrieved October 2012 from http://research.collegeboard. org/programs/sat/data/cb-seniors-2012.
- The Conference Board. (2006). Are they really ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st Century workforce. Prepared with The Partnership for 21st Century Skills, Corporate Voices for Working Families, and the Society for Human Resources Management. Retrieved October 2012 from http://www.p21.org/index. php?option=com\_content&task=view&id=250&Itemid=64.

Coppola, E. M. (2004). Powering up: Learning to teach with technology. New York: Teachers College Press.

- Corona, C., S. Spangenberger, and I. Venet. (1998). Improving student writing through a language rich environment. M.A. Action Research Project, St. Xavier University and IRI/Skylight
- Christensen, C. A. (2009). The critical role handwriting plays in the ability to produce high quality written text. In R. Beard, D. Myhill, J. Riley, and M. Nystrand (Eds) *The SAGE handbook of writing*. Thousand Oaks: SAGE Publications.
- Crystal, D. (1987). How many words? English Today, 3(4), 11-14.
- Cutler, L., and S. Graham. (2008). Primary grade writing instruction: A national survey. Journal of Educational Psychology, 100, 907–919.
- Emig, J. (1977). Writing as a mode of learning. College Composition and Communication, 28, 122–128.
- Fidalgo, R., M. Torrance, and J. N. Garcia. (2008). The long-term effect of strategy-focused writing instruction for grade six students. Contemporary Educational Psychology, 33, 672–693.
- Fisher, D., and N. Frey. (2007). Scaffolded writing instruction: Teaching with a gradual-release framework. New York: Scholastic.
- Fulton, M. (2010). State reports on the cost of remedial education. Denver, CO: Education Commission of the States. Retrieved October 2012 from http://www.gettingpastgo.org/docs/CostofRemedialEducation-StateReports.pdf.
- Gilbert, J., and S. Graham. (2010). Teaching writing to elementary students in grades 4 to 6: A national survey. *Elementary School Journal*, 110, 494–518.
- Goldstein, A. A. and P. G. Carr. (1996). Can students benefit from process writing? DC: National Center for Educational Statistics. Retrieved October 2012 from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=96845.
- Graham, S. (2006). Strategy instruction and the teaching of writing. *Handbook of writing research*, pp. 187–207. New York: Guildford Press.
- Graham, S. (2010). Teaching writing. In P. Hogan (Ed.), Cambridge Encyclopedia of Language Sciences (pp. 848–851). Cambridge University Press, Cambridge, UK.
- Graham, S., A. Bollinger, C. Booth Olson, C. D'Aoust, D. MacArthur, D. McCutchen, and N. Olinghouse. (2012). Teaching elementary school students to be effective writers: A practice guide. Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sci¬ences, U.S. Department of Education. Retrieved October 2012 from the NCEE website: http://ies.ed.gov/ncee/wwc/publications/practiceguides/.
- Graham, S., K. Harris, and M. Hebert. (2011a). Informing writing: The benefits of formative assessment—A Carnegie Corporation time to act report. Washington, DC: Alliance for Excellent Education.
- Graham, S., K. Harris, and M. Hebert. (2011b). It is more than just the message: Analysis of presentation effects in scoring writing. Focus on Exceptional Children, 44(4), I–12.Graham, S., K. Harris, and B. Fink. (2000). Is handwriting casually related to learning to write? The treatment of handwriting problems in beginning writers. Journal of Educational Psychology, 92(4), 620–633.
- Graham, S., and M. Hebert. (2010). Writing to read: Evidence for how writing can improve reading. New York: Carnegie Corporation of New York.
- Graham, S., and M. Hebert. (2011). Writing-to-read: A meta-analysis of the impact of writing and writing instruction on reading. Harvard Educational Review, 81, 710–744.
- Graham, S., S. Kiuhara, D. McKeown, and K. R. Harris. (in press). A meta-analysis of writing instruction for students in the elementary grades. *Journal of Educational Psychology*.
- Graham, S., and D. Perin. (2007a). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology*, 99(3), 445–476.

- Graham, S., and D. Perin. (2007b). Writing next: Effective strategies to improve writing of adolescent in middle and high schools—A report to the Carnegie Corporation of New York. Washington, D.C.: Alliance for Excellent Education.
- Graham, S., and T. Santangelo. (2011). Does spelling instruction make students better spellers, readers and writers? Submitted for publication.
- Guzel-Ozmen, R. (2009). Modified cognitive strategy instruction. Intervention in School and Clinic. 44(4), 216–222.
- Honeycutt, R., and R. Pritchard. (2006). The process approach to writing instruction: Examining its effectiveness. In C. MacArthur, S. Graham, and J. Fitzgerald. (Eds) Handbook of Writing Research (275–290). New York: Guilford.
- Jacobs, G. M. (2004). A classroom investigation of the growth of metacognitive awareness in kindergarten children through the writing process. *Early Childhood Education Journal*, 32(I), 17–23.
- Klein, P. (1999). Reopening inquiry into cognitive processes in writing-to-learn. Educational Psychology Review, II, 203–270.
- Laflamme, John G. (1997). The Effect of Multiple Exposure Vocabulary Method and the Target Reading/Writing Strategy on Test Scores. Journal of Adolescent & Adult Literacy, 40(5), 372–384.
- Luke, S. D. (2006). The power of strategy instruction. Evidence for Education, I(I) I-II.
- National Center for Education Statistics. (2012). The Nation's Report Card: Writing 2011. Institute of Education Sciences, U.S. Department of Education, Washington, D.C. Retrieved October 2012 from: http://nationsreportcard.gov/writing\_2011/ summary.asp.
- National Commission on Writing in America's Schools. (2004). Writing: A ticket to work. . . Or a ticket out. New York: College Board.
- National Commission on Writing in America's Schools. (2005). Writing: A powerful message from state government. New York: College Board.
- National Commission on Writing in America's Schools. (2006). Writing and school reform. New York: College Board.
- Olinghouse, N., and J. Wilson. (2012). The relationship between vocabulary and writing quality in three genres. *Reading and Writing*, June 2012.
- Saddler, B., and S. Graham. (2005). The effects of peer assisted sentence-combining instruction on the writing performance of more and less skilled young writers. *Journal of Educational Psychology*, 97, 43–54.
- Shorter, L. L. (2001). Keyboarding versus handwriting: Effects on the composition fluency and composition quality of third grade students. Unpublished doctoral dissertation, University of South Alabama, Mobile, AL.
- Slavin, R., N. Madden, and N. Karweit. (1989). Effective programs for students at-risk: Conclusions for practice and policy. In R. Slavin, N. Karweit, and N. Madden (Eds.), Effective programs for students at-risk (pp. 21–54). Boston: Allyn & Bacon.
- Snow, C. E., and P. Uccelli. (2009). The challenge of academic language. In D.R. Olson and N. Torrance, (Eds.), The Cambridge handbook of literacy (pp. II2–I33). Cambridge: Cambridge University Press.
- Torrance, M., and D. Galbraith. (2006). The processing demands of writing. In C. MacArthur, S. Graham, and J. Fitzgerald. (Eds.) Handbook of writing research. New York: Guilford.
- Trilling, B., and C. Fadel. (2009). 21st Century Skills: Learning for life in our times. San Francisco, CA: John Wiley and Sons.

Wolf, M. (2007). Proust and the squid: The story and science of the reading brain. New York: Harper.

