
Writing Research, Writing Instruction and Educational Research

Frontiers and Methodology: An Interview with Steve Graham

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Abstract

In this interview, Steve Graham talks about his research interests, the importance of writing and his work in developing writing strategies. He responds to critical questions about the writing struggle currently faced by many students in the U.S. and elsewhere and offers possible solutions. He outlines a general picture of writing instruction at the elementary and secondary levels in the U.S. and comments on the impact of Common Core State Standards on writing instruction and research. He further shares his life-long experience in conducting high quality educational intervention research and meta-analyses.

Key Words: writing research; writing instruction at K-12; Common Core State Standards; educational intervention; meta-analysis

Introduction

Steve Graham, EdD, is the Mary Emily Warner Professor in the Mary Lou Fulton Teachers College at Arizona State University, United States. Former editor of *Exceptional Children*, *Contemporary Educational Psychology*, *Journal of Writing Research*, *Focus on Exceptional Children*, Prof. Graham is the current editor of the *Journal of Educational Psychology*. He is the co-author of the *Handbook of Writing Research*, *Handbook of Learning Disabilities*, *APA Handbook of Educational Psychology*, *Writing Better*, *Powerful Writing Strategies for All Students*, and *Making the Writing Process Work*. He serves on the editorial boards of dozens of journals in educational psychology and special education. Steve is a Fellow of the American Educational Research Association, and Division 15 (Educational Psychology) of the American Psychological Association, and the International Academy for Research in Learning Disabilities. He is the 2005 recipient of the Career Research Award from the

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International Council for Exceptional Children. For over 30 years he has studied how writing develops, how to teach it effectively, and how writing can be used to support reading and learning. In recent years, he has been involved in developing and testing digital tools for supporting writing and reading through a series of grants from the Institute of Educational Sciences and the Office of Special Education Programs in the U.S. Department of Education. His research involves typically developing writers and students with special needs in both elementary and secondary schools, with much of this occurring in urban schools in the U.S. In this interview, he talks about writing research, writing instruction and issues involving research methods.

Theories and Research in Writing

Why do you think writing is important?

There are a number of reasons why I think writing is important. The primary one is that writing is thinking. When we write about something, we engage in a process of thinking, handling ideas in new ways and connecting it with other information that we already know. It allows us to transform our previous knowledge and acquire new information.

Writing is also useful in functional ways as well. We write to share information with others, and to communicate with our family, our loved ones and our friends. It is a very powerful tool for persuasion; it can be used to create imaginary worlds; and it provides a means for entertaining ourselves and others.

Finally, writing gives us a way of exploring who we are as well as thinking about our emotions and the trials we face in life. Writing about these emotions and trials provides us with a tool for coping with them. This can help us psychologically and physiologically.

Does the importance of writing strengthen your interest in writing research?

Absolutely. It is obvious that if you cannot write well, you will find life more challenging at school and in the world of work in the U.S. and elsewhere. Writing has become ubiquitous in American society and many countries across the world. About 85% of people in the world now write. Writing is not only an important skill for white collar workers, about 85% of blue collar workers in the U.S. say that writing is a regular part of their job now. Additionally, if you look at young people today, they are writing all the time. They are tweeting, blogging, emailing and texting all day long. Writing has become a common element in their social lives, educational lives, and

occupational lives. There is virtually no way to avoid writing in today's world in many countries.

how do we presently conceptualize writing?

This is really an interesting question, and it depends on who you are. The two most common views about writing come from either a cognitive or social cultural perspective, although these are not the only views that influence the study of writing. Within the field of English Studies, a social cultural view of writing development dominates. In educational psychology, a cognitive and cognitive motivational viewpoint is in ascendance. The difference between these two views is that the cognitive motivational perspective focuses on what happens inside the head, including the strategies, motivation, knowledge and skills that writers possess and apply when writing. The social contextual viewpoint puts a strong emphasis on context, culture, history and institution in terms of how each individually and collectively shapes writing and its development. In the U.S. and much of the world, these two basic viewpoints dominate our thinking about writing and our academic discussions of it. From my viewpoint, both are necessary if we are to adequately understand writing. Writing is not just about what goes on in the head, and it cannot be just about what goes on outside of it. An adequate understanding of writing requires bringing both views together. What we need most now is a unified theory of writing that takes into account not just the cognitive motivational aspects of writing, but the contextual, cultural, and social aspects of writing too.

Why do we have these different theories?

In many ways, writing research and theory emulate trends in Education and Psychology in general. For many years behaviorism dominated thinking in these two areas, and its dominance was reflected in how writing was conceptualized and studied. As new theories, driven by the study of cognition, became more prominent in the 1950s, 60s, and 70s, writing saw a shift to a cognitive lens when conceptualizing it as well as explaining it and its development. While both behavioral and cognitive views of writing are still in play, and cognitive views are quite robust, others started examining the social/cultural roots of writing in the 1980s, leading to other ways of explaining and understanding writing and its development. Today, we are seeing other ideas take the stage, as the digital and multi-modal revolution has inspired even more ways of thinking about writing. So we have a very rich field of study in terms of how

we think about writing, and there are some scholars who are multi-theoretical. Unfortunately, the various groups that align with each of these theoretical perspectives rarely communicate with each other. This diminishes efforts to expand and more fully understand writing and how it develops.

Why do you think text transcription skills, such as spelling and handwriting are important and how do you see their role in composing in the digital age?

I initially started to realize that these skills were important as I conducted studies with students who found writing challenging. About two-thirds of these students experience difficulties with spelling and handwriting. These problems drive how they view writing. They do not like to write, avoid writing when they can, and invest little effort in it. I saw the same thing happen with my daughter who found spelling and handwriting very challenging. Even today, almost 25 years later, she does not like to write, even though she has become a very skilled writer. I can trace her negative view of writing all the way back to her early difficulties with text transcription skills. For students who do not master these basic writing skills, they interfere with other writing processes. For example, if you have to think about how to spell a word, you may forget other writing ideas you are trying to hold in working memory.

New writing tools and modes of composing are very exciting when we think about students who experience difficulty with handwriting and spelling as well as other writing processes. For instance, we can now go directly from speech to text when we write. We have software programs that predict the next word we plan to write. New tools allow us to blend written text with visual images and recorded messages. Word processors include tools like spell checkers, grammar checkers, advanced planning worksheets, and so on. These new tools change how we write, support us as we write, and may make handwriting and spelling less important depending on the tool.

However, most writing at school and some outside it still involves writing by hand, and writing by hand is not likely to disappear any time soon. Given the impact of handwriting and spelling on other writing processes, we cannot ignore or abandon the development and mastering of these skills until writing with paper and pencil (or pen) becomes much less common at school and home. Even so, we need to make sure students become adept at using these new writing tools that are now available.

It is important to realize that these new writing tools create both affordances and challenges. One of the challenges with speech synthesis, for example, is that a

writer may view the use of this tool as an invitation to compose extemporaneously, saying whatever comes to mind. This is not necessarily a good thing, as speech is not always a good model for writing. Many things that we write should and do differ from the way we speak, so our speaking skills may not provide a good model for certain kinds of writing. Writing is often planful, thoughtful, and precise. This presents a challenge when a writer composes as he or she speaks. This does not mean we should put speech synthesis or other new writing tools aside. Rather, each new tool will come with its own set of issues, and those interested in writing and writing development will need to develop solutions for addressing these issues.

To illustrate, planning in advance of writing via composing by speech synthesis may provide a potential solution to the speaking as a writing problem. This allows the writer to be planful, consider how text is organized in advance of speaking it, and make decisions in advance of speaking text as to how to convey an idea precisely.

Despite all of my clarifications above, new writing tools that allow students to circumvent or minimize transcription skill difficulties can level the playing field for those who struggle to master handwriting, spelling or even keyboarding. Think about a child who misspells one out of every four words, and what that means in terms of the writing process. He has to constantly interrupt the composing process to figure out how to spell words. Tools that allow students to avoid such difficulties and processes have the potential to reduce interference and allow more cognitive resources to be devoted to other writing processes. This is a potential game change for some young writers, and even older ones who never fully master basic text transcription skills.

What should future research on text transcription skills involve?

First, we need to devote more attention to identifying additional methods for circumventing and minimizing the role of text transcription in writing. This includes considering the challenges any new tools create for writers and how we can minimize these challenges. For instance, creating text via word processors, where handwriting is circumvented, still requires a reasonable proficiency in terms of typing skills. In addition, readers are more critical of typed text with spelling or grammar errors in them, as they expect such text to be almost error free. As a result, we need to get a better handle on how to confront such issues.

Second, we need to devise more effective ways of teaching transcription skills to students. While we have been involved in investigating how to best teach

handwriting and spelling for over 100 years, our knowledge is relatively thin in number of studies and not very deep in how to teach these skills to those who most need such instruction. As I noted earlier, the need for good spelling, legible and fluent handwriting, and fast and correct keyboarding are not going away any time soon.

I would like to note that many experts in the field of education believe that we do not need to teach handwriting or spelling because they are no longer important. They believe this for two reasons. First, new tools make these transcription skills superfluous. Second, these skills develop naturally. They contend that all we need to do is have students write often and for real purposes, and these skills will be mastered. It is important to make it clear that handwriting and spelling skills are still important in today's world, and that they still need to be taught. In other words, teaching is important and there is a place for transcription skills in the writing curriculum.

Writing Crisis, Writing Instruction and Common Core State Standards

Please tell us about your work with writing strategies and writing strategies instruction.

A lot of my research has focused on self-regulation. Self-regulation includes planning, evaluating, monitoring, goal-setting, and revision. I am especially interested in how one regulates their learning, and I think that this is critical to being a successful learner. Because of my interest in writing, I started to think about how self-regulation impacts writing.

When I met my wife, Karen Harris, she was interested in Don Meichenbaum's early work on cognitive behavior modification. This work focused on how we regulate our actions, and how what we say to ourselves influences this. We combined my interest in writing with her knowledge of self-regulation and cognitive behavior modification to embark on a three-decade long research enterprise designed to help developing writers become more self-regulated writers. To do this, Karen developed the instructional routines for Self-regulated Strategy Development (SRSD) model. This model mostly involves teaching task specific strategies for planning, evaluation and/or revision in particular writing genres, while at the same time teaching students self-regulation strategies, such as goal-setting, self-monitoring, self-evaluation, self-instruction, and self-reinforcement. These self-regulation procedures are designed to help students regulate the use of the task specific writing strategies they are learning as well as the writing process and their writing behavior.

My role in this work mostly centered around developing the writing strategies students would use to plan, revise, and edit text. Over time these included strategies for narrative as well as persuasive and explanatory texts. I also conducted a variety of studies with Karen Harris and with others that tested the effectiveness of SRSD in general as well as the strategies for planning, revising, and editing we designed. This has been a very productive line of research, as over 100 studies worldwide have been conducted to date, making SRSD the most tested writing intervention. These studies have shown that this approach is quite powerful, and only one study has failed to produce positive effects. I should note that I have not been involved in conducting many of these studies, but I have been influential in what has been undertaken, as many of our initial studies have been replicated and extended.

Why do you think writing instruction is not what it should be?

There are a number of reasons why this is the case. First, writing is a very complex skill. It is not an easy skill to master, and it does not develop naturally. If it did, virtually everyone would be a good writer simply by asking them write frequently and for real purposes. While I wish writing was easier to learn, this is not a reason for lament, as we now have a variety of evidence-based practices for teaching writing effectively.

The second reason why typical writing instruction is not better is that we just haven't devoted much attention to it, at least not in American schools. Up until the Common Core State Standards (CCSS) were enacted, writing was not a major part of the reform effort to make American schools better. We concentrated our efforts on reading, math, science, and technology, but writing was left out of earlier reform movement efforts. As a result, there has been much less emphasis on having children write or on teaching this complex skill.

A third reason for our current state-of-affairs is that we have a capacity problem. In national surveys that we have conducted, a surprisingly large number of teachers say that U.S. Colleges and Schools of Education are failing them. At the high school level, up to 70% of teachers say that the preparation they receive to teach writing while at college is inadequate. Fifty percent of teachers say that their in-service preparation through their place of employment is also inadequate. Frankly put, many teachers indicate they do not have the skills and knowledge they need to be effective teachers of writing. Believe me, teachers want to do a good job of teaching writing. We are just not giving them the preparation they need to teach this critical skill.

I must further point out that the capacity problem I am talking about includes the need to increase the number of people who are aware of evidence-based writing practices and can teach others how to apply them effectively. It will be hard to make major inroads to improving writing instruction without such personnel.

How can we improve classroom writing instruction?

I want to be very clear that we can improve classroom writing instruction, but there are many roadblocks that make this more difficult. A particularly challenging roadblock is poverty. We often talk about fixing schools so that schools do a better job of teaching skills like writing. The assumption is that if we provide good instruction, children will become good readers, good writers, and good mathematician. The issue is more challenging and complex than this. We have a large percentage of children living in poverty in the United States. Poverty in and of itself does not mean that a child will not succeed educationally, but poverty does stack-the-cards against you (to use a term popular in the U.S.). If you live in a poor household, there may be fewer reading and writing materials in your home. Both of your parents may work, and both of them may work two jobs. This often leaves them with little time to support their children's academic development. Some parents who live in poverty may not read or write or do so infrequently. As a result a child in a poor household does not have the same literary affordance as a child from a more affluent home. So when we talk about fixing schools, it should actually start with how we deal with the difference that exists between the "haves" and "have nots". The "have nots" do not get adequate opportunity to develop their language, reading, and writing skills. This can make a huge difference.

While poverty can tilt the scales against literary learning for many children, we cannot bury our heads in the sand and say schools cannot be successful until we make society more equitable. In fact, there are many schools and teachers who beat the odds by making sure virtually all of their students become skilled readers and writers. For instance, there is a wonderful school in Philadelphia, the Benchmark School, that serves students with learning disabilities, and virtually all of the kids go on to colleges and become good readers and writers. This is not an isolated case, as good writing instruction occurs in many schools — just not enough of them.

So what can we do to make writing instruction more effective? First, we have to believe that writing is important. We are unlikely to devote enough time to writing if we do not view its development as critical. We want to promote the message that

writing is every teacher's responsibility and that writing is critical for every child's success. If this message becomes our mantra, we have taken an essential step in enhancing writing instruction in most schools.

There are many good reasons why we should promote this message. Writing about course content or materials read enhances learning. Writing is a powerful tool for persuading, entertaining, and communicating with others. It also provides a useful tool for exploring who we are and how we feel.

It is not enough to believe in the power of writing. We must ensure that teachers know how to teach writing effectively, and how to do so with a wide range of students. We have the teaching tools to make this happen, as researchers have identified a broad range of effective instructional writing practices. The question that must be answered is whether we have the will and endurance to make this happen. I sure hope so.

Would you please give us an overview of how writing is taught in K-12 schools in U.S.?

I would like to start by saying that many teachers do a phenomenal job of teaching writing. Unfortunately, this does not appear to be the general rule. Probably the best writing instruction, in a broad sense, takes place in grades 1 to 3. Teachers typically spend about sixty minutes a day on writing, with students writing for about twenty minutes and teachers spending about forty minutes teaching writing. When we move to fourth to sixth grade, the amount of time students spend writing rises slightly to 25 minutes a day, but instruction drops to 15 minutes a day. It appears that we assume students have acquired most of the skills they need to write well. This is clearly not the case.

When we look at middle and high school in the United States, students spend very little time writing, and most of the writing that occurs is less than a paragraph in length. It often involves filling in blanks on worksheets, one sentence written responses to questions, making lists, and short summaries of materials read. Very little of the writing students do involves analysis and interpretations, which is so important for success in college and beyond. While middle and high school teachers apply evidence-based teaching practices, these are used infrequently. Thus, after grade three, writing instruction is not what it should or could be. We are not devoting enough attention or time to it.

The same basic generalization applies to adapting writing instruction to meet individual students' needs. While teachers make a variety of different adaptations, they do so relatively infrequently. Moreover, students do not write enough; they do not write enough extended texts; and they do not use writing as a tool for learning nearly enough. This may change with implementation of Common Core State Standards in the United States, as writing receives more emphasis now. But of course the proof of this remains to be seen.

You have conducted national surveys examining how writing is taught. What did these studies reveal? What are the implications for policy-makers?

As noted earlier, these studies show that students in the U.S. do not write very much, there is very little writing instruction taking place, and writing is infrequently used as a tool for learning. Of course some schools and teachers are doing a great job, but that is not common. Teachers also indicate that their preparation to teach writing is inadequate, and they are especially negative about their university preparation. This is also the case in other countries too.

If we consider writing as a 21st century tool that is critical to success in life, education, and commerce, the obvious implication from these surveys is that we need to do a better job of teaching students to write. We need to devote the necessary resources and time to make this happen. This includes reforming what universities do as they prepare new teachers. In the U.S., most pre-service teachers do not take a single course on how to teach writing. This and more has to happen if we are going to make a significant improvement in writing and writing instruction. School systems and individual teachers must also make a concerted effort to make sure all teachers can teach writing effectively. Perhaps just as importantly, policy makers must make writing a priority. If our students are to be the best writers they can be, we will need everyone on board.

Could you comment on the impact of Common Core State Standards (CCSS) on classroom writing instruction, teacher preparation, and writing research?

It is still a little early to say exactly what the impact of CCSS will be, but I am hopeful that it will have a major impact. CCSS is the first reform movement in the United States to make writing a central part of improving schools. It emphasizes that writing is an important skill that all students must master. It has standards specifically for

writing at each and every grade level. These standards are generally more challenging than most of the standards that existed more locally at each state in the U.S..

CCSS also makes writing central to learning, both in learning to read and learning in the disciplines. Starting in about grade four, when students are ten years of age, students are expected to use writing to help them learn. They are further expected to write using source material. This makes writing integral to school success. If the corresponding assessments for CCSS also place a strong emphasis on writing, then writing will become as important in American schools as reading and math.

If we turn our focus to teacher preparation, however, I am less certain CCSS will change how teacher education programs teach writing pedagogy. Teachers indicate that universities do not do a good job of preparing them to teach writing. If CCSS is to impact teacher preparation programs, university professors will need to show greater willingness to change what they currently do. In my experience, college faculties are resistant to change. In other words, it is hard to get university faculty to engage in new tricks.

It is important to note though that CCSS has impacted schools. They now offer more in-service preparation to their teachers, but it is difficult to tell if it will be enough. CCSS is designed to make multiple reforms, with writing being just one area in need of additional work, so this affects how much in-service preparation teachers receive in the area of writing. Time will tell if school efforts to improve their teachers' instructional capacities in writing have legs, so to speak.

In terms of the impact of CCSS on writing research, it is important to keep in mind that writing research in the United States is not a large enterprise compared with research in reading and math. While there are hundreds of thousands of studies in reading, the pool of studies in writing is quite limited. Unfortunately, CCSS did not arrive with money for studying and conducting research on it, and despite claims to the contrary, CCSS is not based on research except in a very loose way. So while some researchers in the U.S. will devote some of their attention to studying CCSS, this will likely be sporadic and not very extensive. In fact, I must say that very little money has been devoted to writing research by U.S. research agencies, like IES (Institute of Education Science) or NIH (National Institute of Health). Given the importance of writing today, this is unfortunate.

Educational Research frontiers and Methodology

What do you see as the most important developments in teaching and learning research over the past decade?

One of the most important developments is that we have different theoretical lens for approaching teaching and learning. We have a rich set of motivational theories; we have multiple theories about cognition and learning; and there are a variety of theories about context, culture, and social aspects of learning. This development of different theories and variations of specific viewpoints has opened the door to looking at teaching and learning in new and interesting ways.

Another important development is that we now have more tools for studying and promoting teaching and learning. In an area like writing, for example, software can keep track of where I pause when writing on a computer. Eye tracking software can pinpoint where I am focusing my attention as I write. Think aloud protocols can capture my thinking processes as I compose. Even the activity going on inside my brain can be tracked through via an expanding array of tools.

Perhaps, the most important development in teaching and learning research is that governments are now supporting it, at least to a limited degree (see my earlier comments). This is not the case in all countries, but it is the case in an increasing number of them. This has made it possible to conduct more and more sophisticated research on teaching and learning.

Another exciting development is that we have identified additional means for promoting learning. One example is problem-based learning. With this approach, learning centers around an important problem. We have new formats in which learning can take place, such as gaming. While the effects of gaming are not clear, it is certain that this new avenue of learning will become more common. We also have a host of digital learning tools that can provide help and feedback to students when they are needed. We still have a long way to go to perfect science of teaching and learning, but the horizon is broad and bright.

You have been involved in a number of meta-analyses. What do you see as the role of meta-analysis method in educational research?

The basic role is to answer questions, pulling together the pertinent literature about a query posed by the author. In the process, a meta-analysis provides a summary of research about the topic of interest, and in the best situation provides information that informs theory. For instance, we conducted a meta-analysis that examined if writing

and writing instruction enhanced reading. This review not only answered the proposed questions, but it provided a summary of the research in this area and tested several theoretical propositions.

Meta-analyses also provide information on the quality of research in a given area and the confidence that can be placed in the findings of the accumulated studies. A good meta-analysis systematically evaluates the quality of each study and allows the author to examine if study quality is related to variability in study effects. This provides future researchers with a road map of the strengths and weaknesses of available studies, allowing them to identify how to better conduct future research.

I would further like to point out that meta-analyses provide structure to a body of literature. Those who conduct such analyses must construct frameworks for how studies will be grouped together for analysis. This includes establishing how a particular area of research has evolved and how studies are related to each other and key concepts in a domain. In essence, a central task of a meta-analysis is to bring order to what can sometimes be or seems to be an unruly set of investigations.

What are key elements of doing a good meta-analysis then?

That is a complex question to be honest. First, a meta-analysis should start with a good question. This should be a question which can be answered empirically. It is even better if the question addresses a theoretical issue. Even better is when the question that is to be answered addresses not only a theoretical issue but has real-world or practical implications (this latter point is more a personal bias on my part).

Once you have a good question, that is theoretically grounded and addresses an important topic, the next basic step is to decide what type of evidence best answers the question and to conduct a comprehensive search to identify relevant studies. Of course, it is important to set inclusion and exclusion criteria for the studies which are to be included. For instance, less confidence can be placed in studies with high attrition or unreliable measures, while greater confidence can be placed in studies that provide adequate control for internal and external reliability issues. In obtaining relevant studies, great care must be taken to identify and obtain all possible studies. This includes both published and unpublished ones. It is never possible to obtain every possible study, but the meta-analysts must be thorough in his or her search so that the findings of the review are not biased. As you know, studies that do not obtain statistically significant results are harder to find as they are often not published. It is also important to eliminate from the review any studies with serious confounds.

All obtained studies need to be carefully coded in terms of the characteristics of the study, methodological features, and quality of the study. The latter is especially critical, as the confidence that can be placed in the overall analysis, depends on quality features, such as reliability of measures, degree of attrition, floor and ceiling effects. Of course, care must further be taken in computing effect sizes and average effects across studies.

Just as important as all of the steps just described are, ultimately the success of a meta-analysis depends on how well the data is interpreted. The findings must be placed within the context of the question(s) posed and the previous literature. The meta-analyst must also be circumspect in not overstating the outcomes and providing clear guidelines for research and implications for practice where appropriate.

How is high quality educational intervention research carried out?

As with meta-analysis, high quality intervention research begins with a good question. It is best if the question addresses a theoretical issue. Even if this is not the case, it is important to situate the study theoretically. Just as importantly, the researcher needs to apply a design that allows the question to be answered as unequivocally as possible. Hopefully this will involve conducting a true-experiment. If this is not possible, and a quasi-experimental design is used instead, then it is critical that study participants are equated on variables most central to the purpose of the study.

It is also important to develop an intervention that is well thought out and theoretically sound. Moreover, modern treatment studies should demonstrate that the treatment was delivered as intended; the control condition should be well described so that it is clear what is being compared, and measures must be reliable and valid, including assessments of what was taught and more generally assessments of what might be impacted by the designed treatment.

By the way, good intervention research is not limited to a single study, but involves a series of investigations. This can include studies that set the groundwork for an intervention as well as studies that replicate and extend initial efforts.

So, these are some of the basic things, but not all of them that make intervention research successful. I would like to say as an editor who has edited five journals in my career, the basic things I described above are now common in educational intervention research. Sadly, this is not the case, but we are getting better at this.

About the Author

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