Chapter 1

Evidence-Based Practices in Writing

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S ince the publication of the first and second editions of *Best Practices in Writing Instruction* (Graham, MacArthur, & Fitzgerald, 2007, 2013), little has changed in how writing is taught in the majority of classrooms in the United States. Teachers report they devote little time to teaching writing beyond grade 3, and students do little writing in or out of school for academic purposes (Applebee & Langer, 2011; Brindle, Harris, Graham, & Hebert, 2016; Gillespie, Graham, Kiuhara, & Hebert, 2014; Graham, Cappizi, Harris, Hebert, & Morphy, 2014). This stands in stark contrast to the other members of the three R's—reading and mathematics—subjects in which schools and teachers have devoted considerable effort to improving students' performance.

The general lack of attention to improving writing instruction nationwide during this and the last several decades should not distract from the phenomenal job that many schools and teachers do when teaching writing (Wilcox, Jeffrey, & Gardner-Bixler, 2016). Rather, what these educators have accomplished illustrates what is possible when we squarely focus our efforts on providing effective writing instruction. In fact, it is clear that we now have the instructional "know-how" needed to ensure that students become skillful writers. Reports from the Carnegie Corporation of New York (Graham, Harris, & Hebert, 2011; Graham & Hebert, 2010; Graham & Perin, 2007c) and the Institute of Education Sciences (Graham, Bollinger, et al., 2012; Graham et al., 2016) show we possess many tools for improving the quality of students' writing.

It is especially important at this time that we focus on bringing these best practices in writing instruction more fully into all classrooms. Many students do not develop the writing skills needed to be successful in today's world (National Center for Education Statistics, 2012). This places them at a disadvantage, as writing is virtually everywhere—at school, work, and home.

While concerns about students' writing are not new (Sheils, 1975), calls to improve writing instruction were largely ignored by past educational reform efforts in the United States. This changed with the advent of the Common Core State Standards (CCSS) movement (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). These standards, which were adopted by most states in the United States, made writing and writing instruction a central element of the school reform movement (Graham, Harris, & Santangelo, 2015). Learning to write and writing to learn were strongly emphasized in the CCSS, as students were expected to learn how to write for multiple purposes (e.g., to persuade, to inform, and to narrate) and use writing to recall, organize, analyze, interpret, and build knowledge about content or materials read across discipline-specific subjects. In effect, a basic goal of the CCSS was to revolutionize how writing was taught in U.S. schools and classrooms. This is a goal that we support without reservation.

This chapter and *Best Practices in Writing Instruction* as a whole address how we can provide effective writing instruction in today's schools. We think that if teachers know *why writing is important,* they will invest the energy and time needed to develop an excellent writing program. If they understand *how writing develops,* they will approach writing instruction in a flexible and reasonable manner. If they possess *effective tools for teaching writing,* they will have the know-how to maximize their students' success as writers. We address each of these assumptions in turn in this chapter and draw attention to other chapters in this volume that address each assumption more specifically.

Is Writing Important?

The answer to this question is an unqualified YES! First, writing is an extremely versatile tool used to accomplish a variety of goals (Graham, 2006b). It provides a mechanism for maintaining personal links with family, friends, and colleagues when we are unable to be with them in person. We use writing to share information, tell stories, create imagined worlds, explore who we are, combat loneliness, and chronicle our experiences. Writing can even make us feel better, as writing about our feelings and experiences can benefit us psychologically and physiologically (Smyth, 1998).

Writing also provides a powerful tool for influencing others. Books like *Uncle Tom's Cabin* by Harriet Beecher Stowe provided a catalyst for antislavery beliefs in 19th-century America, whereas *The Jungle* by Upton Sinclair changed the way we think about food preparation. The persuasive effects of writing are so great that many governments ban "subversive" documents and jail the offending authors.

Writing is an indispensable tool for learning and communicating. We use writing as a medium to gather, preserve, and transmit information. Just as important, writing about what we are learning helps us understand and remember it better. The permanence of writing makes ideas we are studying readily available for review and evaluation, its explicitness encourages establishing connections between these ideas, and its active nature fosters the exploration of unexamined assumptions (Applebee, 1984). The impact of writing on learning was captured in two meta-analyses (Bangert-Drowns, Hurley, & Wilkinson, 2004; Graham & Perin, 2007c), which found that writing about content material enhanced students' learning in social studies, science, mathematics, and the language arts. Two examples of a writing-to-learn activity are presented in Figure 1.1 (see also Klein, Haug, & Bildfell, Chapter 7, this volume).

Grade 5: Walt Longmire, a fifth-grade teacher, began an experiment on buoyancy by directing his students to look at the objects they would test (celery stick, wood, rock, Styrofoam, rubber ball, and key). Each child partnered with another student and wrote a prediction for each item, specifying whether it would sink to the bottom in a tank of water, float on top of it, or be suspended in between. They had to explain the rationale for each prediction. After discussing these predictions as a class, students conducted the experiments and made notes about what happened to each item as it was placed in the water. Students then reexamined their predictions and explanations, and revised them in writing as necessary. The class discussed the experiment as well as the revised predictions and explanations, drawing several general observations about buoyancy. Students recorded these in in their science journal (Graham, 2013).

Grade 11: Beatrice Linwood, an eleventh-grade social studies teacher in Montana, had her class watch two films: one about the response of Dutch citizens to the Nazis' practice of making Jewish people wear a red star, another about the reaction of people in Germany to the same practice. As they watched the film, students were asked to take notes on how people in each country reacted to this practice, and why they thought they reacted in their respective manners. After viewing each film, the class discussed their notes and their reactions to the films. They were then asked to write a two-page paper about what would happen in present-day Montana if illegal immigrants were forced to wear a similar star. They shared and discussed their conclusions from their paper the next day.

FIGURE 1.1. Examples of writing-to-learn activities.

Furthermore, students understand material they read better if they write about it. As with writing about concepts presented in science or other content classes, writing about material read provides students with a tool for visibly and permanently recording, analyzing, connecting, personalizing, and manipulating key ideas from text. This has a strong impact on making text read more memorable and understandable (Graham & Hebert, 2010, 2011). This is the case for students in general, and those who are weaker readers and/or writers in particular. It is also the case for narrative and expository text and materials students read for language arts, science, and social studies. Two examples of writing activities that improve students' comprehension of text in scientific studies are presented in Figure 1.2 (see also Shanahan, Chapter 13, this volume).

Finally, teaching students to write improves their reading skills. While reading and writing are not identical skills, they both rely on a common fund of knowledge, processes, and skills (Shanahan, 2016). Consequently,

Grade 3: Alfredo Coda taught his third-grade students how to write questions about the stories they were reading in language arts. He started by having them read a short story, and then modeled how to generate and answer who, what, when, where, and why questions about the material read. As he modeled how to write each question he explained why each was important. Next, students read several additional stories and helped Mr. Coda generate and answer these same kinds of questions. Each student paired with another student and did the same thing. Each student shared his or her favorite question with the class. The final activity involved having students write their own questions and give them to a peer to answer after they read the text for which the questions were developed. The student who answered the questions gave the other student feedback on the quality of each question, indicating what he or she liked or how the question could be changed to make it better. This exercise was repeated several times until students had mastered this skill.

Grade 10: Sancho Saizarbitoria, a tenth-grade social studies teacher, asked his students to read and take notes on two-page descriptions of governments in four countries (two were republics and two were representative democracies). He then defined with the students each of these two forms of government, and the class identified which of the four countries were republics and which were representative democracies. He then asked them to write a two-page paper comparing and contrasting the two forms of government, indicating what they thought was best about each and why. He read their papers that evening, and after returning them the next day, they discussed misperceptions about what was evident in the papers and further explored the advantages and disadvantages of the two forms of government.

FIGURE 1.2. Examples of writing-to-read activities.

instruction that improves writing skills and processes improves reading skills and processes. Reading is also improved by having students engage in the process of composing text. Writers gain insights about reading by creating text for an audience to read. When they write, students must make their assumptions and premises explicit as well as observe the rules of logic, making them more aware of these same issues in the material they read. Support for both of these premises was obtained in meta-analyses by Graham and colleagues (Graham & Hebert, 2010, 2011; Graham & Santangelo, 2014), who found that:

- Teaching spelling improved students' word-reading and comprehension skills.
- Teaching sentence constructions skills increased students' reading fluency.
- Implementing multicomponent writing instructional programs, such as the process writing approach or skills-based writing instructions, increased how well students comprehended text read.
- Increasing how much students write led to better reading comprehension.

As this brief discussion shows, writing is a flexible, versatile, and powerful tool. Writing helps students learn and it can help them become better readers (though research clearly indicates that both writing and reading competence requires substantial instruction in each separately, as well as in combination). Students can use writing to help them better understand themselves. Writing also allows them to communicate with, entertain, and persuade others.

How Does Writing Develop?

While our understanding of how writing develops is not complete, we know enough to be certain that the road from novice to competent writer is strongly influenced by the context in which writing takes place and changes in students' writing skills, strategies, knowledge, and motivation (Graham, 2006b). First, writing is a social activity involving an implicit or explicit dialogue between writer(s) and reader(s). It also takes place in a broader context where the purposes and meaning of writing are shaped by cultural, societal, and historical factors. For instance, written discourse differs considerably among a group of friends tweeting to one another versus the types of academic text students are expected to write at school (Nystrand, 2006).

Writing is more than a social activity, however, as it requires the application of a variety of cognitive and affective processes. It is a goal-directed

and self-sustained cognitive activity requiring the skillful management of the writing environment; the constraints imposed by the writing topic; the intentions of the writer(s); and the processes, knowledge, and skills involved in composing (Zimmerman & Reisemberg, 1997). Writers must juggle and master a commanding array of skills, knowledge, and processes, including knowledge about topic and genre; strategies for planning, drafting, revising, editing, and publishing text; and the skills needed to craft and transcribe ideas into sentences that convey the author's intended meaning. With the ongoing development of new ways of composing that can include visual and auditory information, this process has become even more demanding. Consistent with the conceptualizations above, two basic approaches have dominated much of the discussion about how writing develops. One viewpoint focuses on how context shapes writing development (Russell, 1997), whereas the other concentrates mostly on the role of cognition and motivation in writing (Hayes, 2012). Scholars of writing generally align themselves with one conceptualization or the other. We believe this is a mistake, as writing development (or instruction for that matter) cannot be adequately understood without considering both points of view (see also Bazerman et al., 2017). When we ask teachers about their writing practices, we find that they also think both points of view are essential, as evidenced by how they teach writing and what they believe about it (Cutler & Graham, 2008; Graham, Harris, Fink, & MacArthur, 2002).

Writing Development and Context

The contextual view of writing development in the classroom is aptly illustrated in a model developed by Russell (1997). A basic structure in this model is the activity system, which includes how actors (a student, pair of students, student and teacher, or class—perceived in social terms and taking into account the history of their involvement in the activity system) use concrete tools, such as paper and pencil or word processing, to accomplish an action leading to an outcome, such as writing a story or explaining how to apply a scientific principle. The outcome is accomplished in a problem space where the actors use writing tools in an ongoing interaction with others (peers and teachers) to shape the paper that is being produced over time in a shared direction.

A second basic structure in this model is the concept of genre. These are "typified ways of purposefully interacting in and among some activity system(s)" (Russell, 1997, p. 513). These typified ways of interacting become stabilized via regularized use of writing by and among students, creating a generally predictable approach for writing within a classroom (e.g., in some classes this takes the form of selecting a topic, planning, drafting, revising, editing, and publishing). These are conceived as only

temporarily stabilized structures, however, because they are subject to change depending upon the context. For example, a new student entering a classroom with an established activity system for writing may appropriate some of the routinized tools used by his or her classmates, such as creating a semantic web for organizing writing ideas before drafting a paper. In turn, the new student may change typified ways of writing in a classroom, as other students in the class adapt unfamiliar routines applied by their new classmate, such as "freewriting" ideas about the topic before creating a first draft of the paper.

A more recent model of writing (Graham, 2018), drawing on both activity systems and the concept of genre, places writing and writing instruction within the context of specific writing communities. There are many possible writing communities a student can belong to, including writing communities in and outside of school. A writing community is defined as a group of people who share a basic set of goals and assumptions and use writing to achieve their purpose. In school, a writing community can involve a fourth-grade class whose primary purpose is to learn to write and write for various purposes. It can also involve a tenth-grade science class that uses writing as a tool for understanding material read and results of experiments undertaken.

In addition to having specific purposes, writing communities such as the classrooms described above develop identities, values, norms, and preferred audiences. Within a writing community, members (e.g., teacher and students) assume different roles, responsibilities, identities, and levels of commitment. Members of a community use writing tools and resources along with typified patterns of action to accomplish their writing objectives and task. This work occurs in specific physical and social environments (e.g., brick-and-mortar classroom, digital classroom), and is shaped by a collective history. While the actions and behaviors of a writing community (e.g., teacher and students) become codified with time, they are open to change. In addition, a writing community, such as the fourth- or tenth-grade classes referred to earlier, is likely to contain considerable variability due to the existence of contradictions, conflict, multiple voices, disparate elements, and heterogeneity.

This contextual description of writing (Graham, 2018) suggests that while writing classrooms are likely to share many similarities (e.g., common purposes), no two classes are exactly alike. Even more importantly, writing and learning to write is shaped and constrained by the community in which they take place. The purposes, norms, values, forms, audiences, tools, sanctioned approaches, collaborators, environment, and collective history determine, at least in part, what is written as well as what is learned. As a result, we must carefully consider how we construct our classroom writing community.

Of course, what happens in our classroom is not completely up to each of us, as it is also shaped and constrained by larger forces involving culture, society, family, institution, politics, and history (Bazerman et al., 2017; Graham, 2018). An easy way to illustrate this is through the consequences of high-stakes testing for writing. Most states require annual high-stakes writing tests with students in specific grades. This institutional action increases the amount of time devoted to teaching writing, at least during the years when it is tested (Graham et al., 2011). Not all of the effects of such testing are positive, however. Hillocks (2002) reported that it restricted writing instruction to what is measured. For instance, if narrative writing is tested in fourth grade, writing instruction may well be limited to this genre. Our experiences in schools substantiate this concern.

Writing Development and Cognitive/Motivational Capabilities

While writing development is undoubtedly influenced by the communities in which it occurs (Graham, 2018), it is also shaped and constrained by the cognitive capabilities and resources that members of said community bring to the act of writing and learning. For instance, what students learn about writing will be influenced by their teachers' experience teaching writing, knowledge about how to teach it, attitudes about writing, and confidence as a writer and writing teacher. Likewise, students are not passive and inert figures in the classroom. They make many decisions that drive and shape what they write and what they learn. In effect, they exert some degree of agency over writing and learning to write that extends beyond the influence of the teacher or the context. For example, even when a teacher assigns a writing task, the student must still decide to do the task, determine how much effort to commit, formulate intentions and goals, and decide how to accomplish it.

It is important to realize that a student's volition and actions as a writer and learner are in turn shaped and constrained by limitations in human cognitive architecture and the writing knowledge, skills, strategies, and beliefs readily available to the student. Writing is a very complex skill involving the execution and coordination of attention, motor, visual, executive functioning, memory, and language, as well as writing knowledge, processes, and skills (Hayes, 2012). There are many competing actions that writers must attend to while writing, and if these actions require too much attention or cognitive resources, the cognitive system becomes overloaded, resulting in less than optimal writing (McCutchen, 1988). This is particularly problematic for developing writers who are still mastering the basic knowledge, processes, skills, and beliefs needed to be a successful and

skilled writer. Thus, an important goal in writing development is to help them acquire these resources.

The cognitive/motivational view of writing development described above can be aptly illustrated through a model of skilled writing developed by Hayes (2012). His model identifies the mental moves and motivational resources writers draw on as they compose text. These include the mental processes of text interpretation, reflection, and text production. Writers draw on these cognitive processes to create a representation of the writing task, develop a plan to complete it, draw conclusions about the audience and possible writing content, use cues from the writing plan or text produced so far to retrieve needed information from memory, turn these ideas and information into written sentences, and evaluate plans and text and modify them as needed. It also includes long-term memory (knowledge of the writing topic and audience as well vocabulary and linguistic, morphological, and genre knowledge, including schemas for carrying carry out particular writing tasks), working memory (which serves as an interface among cognitive processes, motivation, and memory, providing a mental place for holding information and ideas for writing as well as carrying out mental operations that require the writer's conscious attention), and motivation (the goals, predispositions, beliefs, and attitudes that influence the writer and the writing process).

As Hayes's (2012) model shows, skilled writers are strategic, motivated, and knowledgeable about the craft of writing. Not as explicitly identified in Hayes's model are the skills and abilities writers use to transform ideas into sentences that are then translated into text through handwriting, typing, and spelling. The goal of writing instruction should be for students to be facile at developing sentences and extended text that clearly convey meaning and reflect the writer's intentions, as well as to automatize the transcription skills of handwriting, typing, and spelling so that they require little conscious attention on the part of the developing writer.

The contextual and cognitive/motivational models described in this chapter provide a good roadmap for what should be attended to when designing effective writing programs for K–12 students. It is important to create a writing context in which students can flourish. This goal includes developing typified routines that facilitate writing development as well as addressing motivation and affect related to the writing process. It is also important to make sure students acquire the skills, strategies, knowledge, and will needed to become skilled writers. In the next section, we identify best practices for achieving these goals, and make connections to other chapters in this volume where specific best practices are described in greater detail.

What Are Best Practices in Writing Instruction?

Daniel Walker, the 1999 Alaska Teacher of the Year, rightly noted, "Teaching is brain surgery without breaking the skin. It should not be entered into lightly" (Sennett, 2003). This is especially true for the teaching of writing, as it is a very complex and demanding activity. How, then, can we identify best practices in the teaching of writing?

- *The wisdom of professional writers*. One possible source for identifying best practices in writing is to draw on the wisdom of professional writers. These highly skilled writers have offered many suggestions about how to teach writing over the centuries, ranging from Mark Twain's famous advice "When you catch an adjective, kill it"; to Winston Churchill's admonishment "Short words are the best, and old words short are the best of all." While professional writers surely possess considerable wisdom about writing, their advice is most often aimed at other skilled writers who seek to make writing their profession, too. Consequently, we did not draw on this advice as a source for best practices for teaching developing writers in this chapter.

- *The wisdom of teachers*. Another possible source for best practices comes from those who teach developing writers. Throughout their careers, teachers acquire incredible insights into how to teach students to write (see, e.g., Atwell, 1987; Graves, 1983). The drawback to this approach to identifying best practices is that it is difficult to separate the "wheat from the chaff," to use a colloquial expression (Graham, 2010). There is usually no direct evidence showing which of the many methods a teacher uses is responsible for changes in students' writing. When evidence is provided for a specific method, it commonly takes the form of a testimonial, as the writing of selected students is presented to show that a method works. This makes it difficult to determine whether the evidence provides a typical or an atypical picture of the method's impact. Moreover, if a method is drawn from the experiences of a single teacher (regardless of how effective that teacher is), there is no way to predict whether it will be effective with other teachers.

To address this specific limitation, we identified best practices in writing in this chapter by examining the methods that exceptional teachers of literacy commonly apply when teaching writing (Graham & Perin, 2007b). This decision addressed the evidence issue above (at least in part), as students of these teachers made exceptional gains in their writing development. It also addressed the single teacher issue, as we considered an instructional method a best practice only if it was applied across most of the available

studies of exceptional teachers. While our approach cannot establish that a particular method is solely responsible for improvements in students' writing, it is reasonable to assume that practices that are commonly applied by exceptional writing teachers are potentially more important than those applied idiosyncratically.

This teacher-based approach to identifying best practices should not distract or take away from the potential power or effectiveness of methods that you have established as effective in your own classroom. In fact, what we hope you do is combine these methods with the best practices identified in this chapter and throughout this volume.

- *The scientific study of writing interventions.* A third source for best practices can be drawn from scientific studies testing the effectiveness of specific writing practices. This provides a relatively trustworthy approach for identifying best practices, as such testing provides evidence on whether a procedure enhanced students' writing. It further makes it possible to determine how much confidence can be placed in the findings. As a result, the best practices identified in this chapter are also based on methods shown to be effective in scientific studies where writing outcomes were reliably assessed.

It must be noted that the scientific testing of instructional practices is not without its own problems. A scientifically validated practice is only as good as the evidence supporting it, and just because an instructional method was effective in multiple research studies does not guarantee that it will be effective in all other situations. There is hardly ever a perfect match between the conditions under which a writing method was implemented in a scientific study and the conditions in which it will subsequently be applied in your classroom (Graham, McKeown, Kiuhara, & Harris, 2012). The safest course of action is to monitor the effects of any best practice from this chapter you implement in your classroom to be sure it works with your students.

In the next sections, we identify teacher-based and scientifically based best practices that can be used to create an effective writing program. We structure the presentation of these practices so that they are responsive to what we know about writing development from a contextual as well as a cognitive/affective/motivational viewpoint. This includes creating a writing environment in which students can flourish and making sure they develop the skills, strategies, knowledge, and motivation needed to become skilled writers. We address each of these topics separately, with the exception of motivation, which is primarily addressed in the section on creating a supportive classroom environment.

Create a Supportive Classroom
Where Writing Development Can Flourish

Writing is hard work and learning to write well is even harder. Students are less likely to put forth their best efforts when writing or learning to write if they view the classroom as an unfriendly, chaotic, high-risk, or punitive place. Many students evidence mental withdrawal or evasion of productive work in such situations (Hansen, 1989). This makes it especially important to develop a classroom writing environment that is interesting, pleasant, and nonthreatening, where the teacher supports students and students support one another. This viewpoint is also evident in the classrooms of highly effective literacy teachers (Graham, Harris, et al., 2015; Graham & Perin, 2007b), where they:

- Are enthusiastic about writing and the teaching of writing, establishing a stimulating mood during writing time.
- Make students' writing visible by encouraging them to share it with others; displaying it on the wall; and publishing it in anthologies, books, or other classroom collections.
- Create a positive environment in which students are encouraged to try hard, to believe that the writing skills and strategies they are learning will permit them to write well, and to attribute success to effort and the tactics they are learning (see also Boscolo & Gelati, Chapter 3, this volume).
- Set high but realistic expectations for students, encouraging them to surpass previous efforts or accomplishments.
- Provide just enough support to students so they can make progress or carry out writing tasks, but encourage them to act in a self-regulated fashion, doing as much as they can on their own.
- Adapt writing assignments and instruction so that they are appropriate to the interests and needs of their students (see also Rouse, Chapter 15, and Pasquarella, Chapter 16, this volume).
- Keep students engaged by involving them in thoughtful activities (such as gathering information for their composition) versus activities requiring less thoughtfulness (such as completing a workbook page that can be finished quickly, leaving many students disengaged).
- Create classroom routines that promote positive interactions among students.

Many of these same teacher-based best practices are also evident in the process approach to writing. This includes the following motivating and supportive practices: writing for real audiences; encouraging personal responsibility and ownership of writing projects; promoting high levels of

student interactions, creating a pleasant and positive writing environment; and encouraging self-reflection and evaluation. It is important to keep in mind that this approach to teaching writing involves other instructional components such as creating routines in which students are asked to plan, draft, revise, and edit their text. While scientific studies testing the process approach do not provide evidence on the effectiveness of specific aspects of this method, such as the motivational and supportive practices identified above, the available research demonstrates that this overall approach does improve how well students in grades 1–12 write (see Graham & Sandmel, 2011, for a review of scientific studies).

Three specific writing practices that are supported by scientific testing are praise, goal setting, and creating instructional arrangements where students write together (see Graham et al., 2011, 2017; Graham & Perin, 2007a; Rogers & Graham, 2008, for reviews). When teachers reinforce a positive feature of students' writing, such as good word choice, students are more likely to make such choices in future papers. When providing such praise, it is important to be specific about what you like.

Providing students with clear, specific, and reasonably challenging goals improves the quality of what they write. Examples of such goals include:

- Asking elementary grade students to add three new ideas to their paper when revising it.
- Asking middle school students to address both sides of an argument when writing, providing three or more reasons to support their point of view and countering at least two reasons supporting the opposing view.

For both elementary and secondary students, creating arrangements where students work together to plan, draft, revise, or edit a composition improves the quality of what they write (see also Friedrich, Chapter 2; McKeown & FitzPatrick, Chapter 11; and MacArthur, Chapter 12, this volume). The key to creating such routines is to provide students with specific directions and guidelines for what they will do when working together and to directly teach them how to apply these procedures. An example of peers working together to compose a composition is provided in Figure 1.3.

We believe the most critical element in creating an environment where students can prosper and grow as writers is for them to write. The basic premise underlying this assumption is that students need to write frequently and regularly to become comfortable with writing, develop their ideas as they write, and further hone their skills as writers. Surprisingly, students spend very little time writing in school. When they do write, their writing is rarely longer than a single paragraph (Applebee & Langer, 2011). Highly

Lonnie Bird taught his third-grade students how to work with another peer to plan, draft, revise, and edit their papers. Students were taught to work together as partners as they composed. He modeled and they practiced how to help each other with a variety of basic writing tasks including generating ideas, creating a draft, rereading essays, editing essays, choosing the best copy, and evaluating the final product. As they jointly composed papers, he monitored, prompted, and praised students and addressed their concerns.

FIGURE 1.3. Example of students working together to compose a composition. Based on Yarrow and Topping (2001).

effective literacy teachers, however, recognize that writing is essential, as youngsters in their classrooms (Graham & Perin, 2007a):

- Write often and for many different purposes, including to inform, persuade, and entertain (see also Olson & Godfrey, Chapter 4; Hebert, Chapter 5; Ferretti & Lewis, Chapter 6; and Karchmer-Klein, Chapter 8, this volume).
- Write frequently across the curriculum (see also Klein, Haug, & Bildfell, Chapter 7, this volume).

These teacher-based best practices are supported by scientific experiments showing that increasing the frequency of elementary grade students' writing improves how well they write (Graham et al., 2017) and writing about material read or presented in content classes improves learning (Bangert-Drowns et al., 2004; Graham & Hebert, 2010, 2011; Graham & Perin, 2007c). We also think it is important for students to:

- Write for real audiences and purposes (see Figure 1.4 for an example).
- Make personal choices about what they write, including encouraging them to develop unique interpretations of assigned writing topics.
- Write for extended periods of time about single topics.

Developing a supportive writing environment also requires some consideration of the tools students use when writing. Many schools still use 19th-century writing tools such as pencil and paper, even though scientific studies demonstrate that students in grades 1–12 show greater improvement in their writing over time when they use word processing to write at school versus writing by hand (Goldberg, Russell, & Cook, 2003; Morphy

Victoria Moretti and her class of fourth-grade students in Virginia planned a project to help save the Chesapeake Bay (Graham, 2013). They set out to clean a stream that ran behind their school and whose water eventually fed the bay. The class carried out a variety of writing tasks to help them meet their objective, including:

- Writing letters to the mayor and town council indicating why it was important that the bay become cleaner, how they were helping to make this a reality, and what the mayor and town council could do.
- Writing letters to two local newspapers indicating why local streams, rivers, and estuaries must be kept clean.
- Writing and performing a play for younger students at the school, showing what happens to fish and other wildlife when streams are polluted.
- Writing key messages on placards for a "Save-the-Bay" rally held at a local mall.
- Creating a list of activities for creating a cleaner bay (after interviewing parents, accessing online resources, and contacting environmental experts).

FIGURE 1.4. Example of writing for a real purpose.

& Graham, 2012). Word processors have a number of advantages over writing by hand, as electronic text is legible; electronic text can easily be deleted, added to, rewritten, or moved; word processors are bundled with other software such as spell checkers or speech synthesis that can support the writer; and word processors can be connected to the web and other programs in which students can gather material for what they write as well as share their text with others. Despite these advantages, students still do most of their writing for school by hand. We obviously need to move writing instruction more squarely into the 21st century, making it possible for our students to take advantage of word processing and other electronic methods for composing (see Karchmer-Klein, Chapter 8, this volume).

Finally, teacher assessment is essential to creating a supportive writing environment. When teachers monitor their students' progress as writers, they can adjust classroom practices to meet the collective as well as the individual needs of their students. When they provide students with feedback, they facilitate the learning of writing skills, strategies, or knowledge by helping students evaluate their progress and determine whether they need to exert more effort to be successful (Paas, Van Merrienboer, & Van Gog, 2012). Scientific studies have demonstrated that both of these assessment activities enhance students' writing performance (Graham et al., 2011; Graham, Hebert, & Harris, 2015; see Wilson, Chapter 14, this volume, for additional information on best practices in writing assessment).

Teach Writing Strategies

Writers employ a variety of strategies to help them manage the writing process and to create as well as improve what they write (Zimmerman & Riesemberg, 1997). These strategies include:

- Goal setting and planning (e.g., establishing rhetorical goals and tactics to achieve them).
- Seeking information (e.g., gathering information for writing).
- Record keeping (e.g., making notes).
- Organizing (e.g., ordering notes or text).
- Transforming (e.g., visualizing a character to facilitate written description).
- Self-monitoring (e.g., checking to see that writing goals are met).
- Reviewing records (e.g., reading notes or the text produced so far).
- Self-evaluating (e.g., assessing the quality of text or proposed plans).
- Revising (e.g., modifying text or plans for writing).
- Self-verbalizing (e.g., saying dialogue aloud or personal articulations about what needs to be done).
- Rehearsing (e.g., trying out a scene before writing it).
- Environmental structuring (e.g., finding a quiet place to write).
- Time planning (e.g., estimating and budgeting time for writing).
- Self-consequating (e.g., going to a movie as a reward for completing a writing task).

Highly effective teachers emphasize the use and teaching of such strategies (Graham, Harris, et al., 2015; Graham & Perin, 2007b), as they:

- Encourage students to treat writing as a process.
- Teach students strategies for planning, drafting, revising, and editing text.

The practice of explicitly teaching students strategies for planning, drafting, evaluating, and revising text is supported by scientific experiments showing that such instruction strongly improves the quality of writing produced by students in grades 1–12 (see Graham, 2006a; Graham & Harris, 2003; Graham et al., 2011; Graham, Harris, & McKeown, 2013, for reviews). Strategies that improve students' writing performance range from more general processes, such as brainstorming or semantic webbing (which can be applied across genres), to planning and revising strategies designed for specific types of writing, such as writing an explanation or writing to persuade (see also McKeown & FitzPatrick, Chapter 11, and MacArthur, Chapter 12, this volume).

At the most basic level, writing strategies instruction involves the teacher explaining the purpose and rationale of the strategy (as well as when and where to use it); modeling how to use the strategy (often multiple times); providing students with assistance in applying the strategy until they can apply it independently and effectively; and facilitating continued and adaptive use of the strategy (again through explanation, modeling, and guided practice). This basic routine for teaching writing strategies is enhanced when students are shown how to regulate the planning, drafting, revising, or editing strategies taught (see Graham, Harris, et al., 2015). This includes teaching them how to set goals for learning and using the strategies as well as monitoring the impact the strategy use has on their writing. The advantage of making such gains visible to students is that it is motivating and increases the likelihood they will use the strategy in the future. Figure 1.5 presents an example of a strategy for planning and drafting an essay and provides a brief description of the basic procedures

Henry Bear taught his tenth-grade class the following strategies for planning and drafting an essay (based on De La Paz & Graham, 2002):

- PLAN (*P*ay attention to the prompt, *L*ist the main idea, *A*dd supporting ideas, *N*umber your ideas).
- WRITE (*W*ork from your plan to develop your thesis statement, *R*emember your goals, *I*nclude transition words for each paragraph, *T*ry to use different kinds of sentences, and *E*xciting, interesting, $10,000 words).

He taught these strategies using the self-regulated strategy development model (based on Harris, Graham, Mason, & Friedlander, 2008). It includes the following six stages of instruction:

1. *Develop background knowledge*. Students were taught background knowledge needed to use the strategy successfully.
2. *Describe it*. The strategy as well as its purpose and benefits was described and discussed.
3. *Model it*. Mr. Bear modeled how to use the strategy.
4. *Memorize it*. The students memorized the steps of the strategy and the accompanying mnemonics.
5. *Support it*. Mr. Bear supported students' use of the strategy, providing assistance as needed.
6. *Independent use*. Students used the strategy with few or no supports.

Students were also taught a number of self-regulation skills (including goal setting, self-monitoring, self-instruction, and self-reinforcement) to help them manage the writing strategies, the writing process, and their behavior.
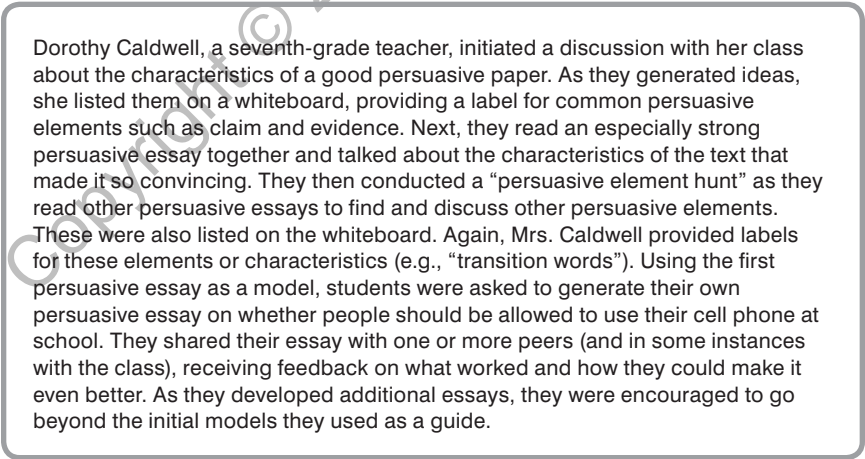
FIGURE 1.5. Strategy for planning and drafting an essay.

used to teach it. (We refer readers to Graham & Harris, 2005; Harris, Graham, Mason, & Freidlander, 2008, for other scientifically validated writing strategies and a more complete description of the self-regulated strategy development model used to develop these strategies.)

Help Students Acquire the Knowledge Needed to Write Effectively

Two types of knowledge that are especially important to writers are knowledge about the writing topic and knowledge about the genre(s) in which the writer will present this topic information. In a recent study (Olinghouse, Graham, & Gillespie, 2015), we found that both types of knowledge made a unique and significant contribution to predicting the quality of students' writing across different genres. This observation is buttressed by scientific intervention studies showing that methods used to help students access or organize topic knowledge in advance of writing improves the quality of what they write, whereas methods used to enhance students' knowledge of genres and the characteristics of good writing result in better text (see Graham, Harris, et al., 2015; Graham & Perin, 2007a).

One scientifically based best practice for helping students acquire information to write about is prewriting activities. With these types of activities, students locate information through brainstorming, reading, or other informational-gathering procedures. They may also use a graphic organizer to help them structure this information. Another means for

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Dorothy Caldwell, a seventh-grade teacher, initiated a discussion with her class about the characteristics of a good persuasive paper. As they generated ideas, she listed them on a whiteboard, providing a label for common persuasive elements such as claim and evidence. Next, they read an especially strong persuasive essay together and talked about the characteristics of the text that made it so convincing. They then conducted a "persuasive element hunt" as they read other persuasive essays to find and discuss other persuasive elements. These were also listed on the whiteboard. Again, Mrs. Caldwell provided labels for these elements or characteristics (e.g., "transition words"). Using the first persuasive essay as a model, students were asked to generate their own persuasive essay on whether people should be allowed to use their cell phone at school. They shared their essay with one or more peers (and in some instances with the class), receiving feedback on what worked and how they could make it even better. As they developed additional essays, they were encouraged to go beyond the initial models they used as a guide.

FIGURE 1.6. Teaching students about the characteristics of a good persuasive paper.

acquiring possible writing content is through inquiry. This is character-ized by setting a clearly specified goal for the writing task (e.g., describe the actions of people), analyzing concrete and immediate data to obtain information needed to complete the task (e.g., observe one or more peers during specific activities), using specific strategies to conduct the analysis (e.g., retrospectively ask the person being observed the reason for his or her action), and applying what was learned (e.g., write a story where the insights from the inquiry are incorporated into the composition).

Two scientifically based best practices for acquiring information about specific genres or the characteristics of good writing include (1) teaching students about the characteristics of specific types of text (e.g., stories have a setting, starting event, characters, actions, resolution) and (2) providing them with good models for the types of writing they are expected to cre-ate (see Figure 1.6). Both activities have a positive impact on the quality of what students write (Graham, Harris, et al., 2015; Graham et al., 2018; Graham & Perin, 2007a).

Teach Foundational Writing Skills

Skilled writers rarely think about handwriting, typing, or spelling. They execute these skills correctly and with little to no conscious attention. Until they are mastered, these skills create several undesirable consequences for developing writing. First, misspellings and difficult-to-read handwriting makes text more difficult to read, and readers are more negative about the ideas in such text (Graham et al., 2011). Second, having to devote conscious attention to handwriting, typing, and spelling interferes with other writing processes (Scardamalia & Bereiter, 1986). For instance, having to switch attention to think about how to spell a word can lead the writer to forget ideas or plans held in working memory.

It is best to teach these transcription skills early, as children who expe-rience difficulties with them may avoid writing and develop a mind-set that they cannot write (Berninger, Mizokawa, & Bragg, 1991). Scientific stud-ies show that teaching handwriting, spelling, and typing to children in the primary grades has a positive impact on their writing (Graham, Harris, et al., 2015; Graham & Santangelo, 2014; Santangelo & Graham, 2016). In effect, interference from these skills is lessened, as children become increas-ingly fluent and correct in executing them. Figure 1.7 presents an example of best practices for spelling (see also Alves, Limpo, Salas, & Joshi, Chapter 9, this volume).

A major part of a writer's effort when drafting text is involved in transforming ideas into the words and syntactic structures that convey the author's intended meanings. These goals include constructing sentences as well as using appropriate grammar, punctuation, capitalization, and

Every 2 weeks, Cady Longmire introduces her second-grade class to two contrasting spelling patterns (e.g., short vowels /a/ and /o/; short and long /a/; or long vowels /ay/ and /ai/). These patterns are introduced through a word-sorting activity, in which she sorts words involving the two patterns into different piles. She provides students with hints on why each card is placed in a particular pile (e.g., emphasizing a specific sound in a word), leading students to discover and specifically state (with her help) the rule underlying the spelling patterns. During the next 2 weeks, students:

- Search for words in their reading and writing that fit the patterns.
- Learn to spell common words that fit the patterns by playing games (e.g., Tic-Tac-Toe spelling).
- Build words with the patterns by adding consonants, blends, or diagraphs to rimes representing the pattern (e.g., the rime *at* for short /a/).

FIGURE 1.7. Teaching spelling skills.

so forth. Scientific studies show that teaching such sentence constructions skills not only improves the sentences students write (Andrews et al., 2006) but the quality of the text they produce (Graham, Harris, et al., 2015; Graham & Perin, 2007a). Such instruction typically involves teaching students how to combine simpler sentences into more sophisticated ones. With this approach, the teacher models how to combine two or more sentences into a more complex one. Students practice combining similar sentences to produce the same type of sentence the teacher did. Students then apply the sentence-combining skill in text they produce (see also Saddler, Chapter 10, this volume).

It is also helpful to teach students strategies for writing different types of paragraphs, as this improves their ability to create such constructions (Rogers & Graham, 2008). An example of such a strategy involves procedures for developing a paragraph with an opening sentence, sentences that provide details related to the opening sentence, and a closing or passing sentence (to the next paragraph).

An Added Boost

Reading and reading instruction also has a positive impact on students' development as writers (Shanahan, 2016). Students draw on overlapping pools of knowledge when reading and writing text. Engaging in reading can inform writing, as writers may be more likely to think about their own audiences and how authors achieve their rhetorical purposes. Reading can be used as a source of information for writing. Reading practices that directly improve writing include (Graham et al., 2018):

- Teaching phonological awareness, phonics, and reading comprehension.
- Increasing how often students read.
- Designing opportunities for students to observe readers carry out a reading activity.
- Having students reading and analyze another person's text.
- Asking students to read text and emulate it.
- Encouraging students to obtain information for writing by reading text.

Teaching reading and writing together can also enhance students' writing (Graham et al., 2017). We think this is likely to be most successful when reading and writing instruction are purposefully integrated so that they are designed to improve both skills at the same time. For instance, the letter–sound associations taught in a phonics lesson correspond to the sound–letter association taught in a spelling lesson delivered on the same day. Even better is when the corresponding letter–sound and sound–letter combinations are taught in the same lesson.

It is important to remember, however, that reading and reading instruction are not powerful enough to ensure that students acquire all the writing skills, strategies, and knowledge need to be a skilled writer (Graham et al., 2018). This requires dedicated time to teach writing.

Bringing It All Together

As this chapter shows, the teaching of writing is not a simple task, nor should it be the province of amateurs. A good starting point in designing an effective writing program is to determine how you will create a supportive writing environment. This task includes thinking about how to create a pleasant and supportive writing environment; what needs to be done to enhance students' motivation to write; how students will support one another in a positive manner; and how assessment, evaluation, and feedback will be used in your classroom.

One critical issue to consider is what genres students need to develop competence in across the elementary, middle, and high school grades. At the end of elementary school, students should be well prepared for the demands of middle school, and similarly, at the end of middle school, students should be well prepared for the demands of high school. Then, it is important to determine what types of writing you want students to engage in during the course of the school year and exactly how writing will be used to support reading and learning and how reading and learning will be used to support writing. We then suggest that you think about what students

need to learn about each of these forms or genres of writing. Consideration must also be given to the types of writing strategies (planning, drafting, revising, and editing) your students should master to use these genres or forms of writing effectively as well as the foundational skills (handwriting, typing, spelling, sentence construction, paragraph construction) that still require instruction.

Once you know what types of writing you plan to emphasize, how students will use writing to support reading and learning (and vice versa), and what you will teach, preliminary plans must be made as to how much time will be allotted to each aspect of the writing program (balancing the amount of time devoted to writing and instruction); how all of this will be sequenced; and how specific strategies, knowledge, and skills will be taught.

We further encourage you to think about the role of word processing and other 21st-century writing tools in your program, the types of adaptations that you might need to make for students in your classroom, and how your writing program will connect to what other teachers in the school are doing and in the community at large. Like writing, planning a writing program is a recursive and messy process that changes and must be at times reconceptualized as it unfolds. While there is no perfect writing program, this chapter and this volume provide you with a wide variety of best practices for helping all students become skilled writers.

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