Setting the Stage

Few would argue the importance of elementary school instruction for establishing the foundational knowledge and skills needed for future academic success. Students who develop strong writing skills in elementary school gain a tool that will support learning, communication, and self-expression throughout their schooling (Graham, Bollinger et al., 2012). In point of fact, learning to write is critical to students’ future success (Graham, 2019).

For students with disabilities, writing is challenging. Writing requires the coordination of multiple metacognitive and self-regulatory skills to learn and apply basic skills to produce a written product (Graham & Harris, 1996). Students with learning disabilities, for example, often have difficulties in basic transcription skills such as handwriting and spelling, in writing effective sentences, and in brainstorming ideas and organizing those ideas for written expression (Taft & Mason, 2011). Students with attention and behavioral disabilities, in addition to having the difficulties noted above, may lack goal setting and the self-monitoring skills needed to complete a writing task. Students with cognitive, memory, or language disabilities may lack the required vocabulary and grammar skills for writing. Many students with autism, who often think in literal terms, may struggle with writing creatively by using their imagination (Asaro-Saddler & Saddler, 2010). Given the potential difficulties students with disabilities may have when writing, teachers should deliver evidence-based instruction in inclusive classrooms with increasing levels of intensity and continuous progress monitoring.

All That Glitters is Not Gold

National data compels a change in how writing instruction is provided in the United States. The National Assessment of Educational Progress (NAEP) writing assessment, using the comparable scores for writing on a laptop in 2017, indicated lower results when compared to 2011 (National Center for Education Statistics, 2017). Furthermore, NAEP writing results have indicated no statistically significant improvement in closing score gaps for students with disabilities. Poor writing
outcomes for students with disabilities indicate a need for remediating basic skill deficits and for improving students’ skills and use of strategies for writing sentences and for planning, composing, revision, and editing written compositions (Graham & Harris, 2003). With intensive intervention, students have the potential to reduce the risk of academic failure (Johnson et al., 2006).

**Instructional Context**

How is writing instruction provided in the inclusive elementary school classroom? In early grades, handwriting and spelling instruction is often included in early reading instruction. Although 169 surveyed teachers reported having little training for teaching handwriting, 90% noted spending approximately 70 minutes a week on handwriting instruction (Graham et al., 2005). When looking across elementary grades, 168 surveyed teachers reported spending approximately 90 minutes a week for spelling instruction (Graham et al., 2008). The majority of these teachers note using a commercial program, 42% reported making few or no adaptations for weak spellers. In Cutler and Graham (2008), the majority of the 177 teachers surveyed noted teaching sentence construction skills several times a week.

Most teachers support some variation of instruction within the writing process (Brindle et al., 2016; Cutler & Graham, 2008) that includes four overlapping processes—planning, composing, revision, and editing. When planning, a conceptual plan is completed by generating and organizing ideas and by setting goals for the writing task. The plan is then translated into written words, phrases, clauses, and sentences. During revision, the written text is read and modifications are made to content, syntax, and vocabulary. A teacher’s use of evidence-based practices for teaching the writing process and for adapting instruction for weak writers is often determined by their beliefs and teacher training (Brindle et al., 2016).

Of the 92% of teachers survey with teacher certification through a teacher education program in Cutler and Graham (2008), only 28% noted that their preparation was either very good or outstanding; 42% noted that their preparation was adequate and 28% noted that their preparation was poor or inadequate. Furthermore, despite the importance of instructional time needed for in-school writing (Graham, Bollinger et al., 2012), teachers report spending only 15 minutes a day teaching writing, with students spending only 25 minutes a day at school writing (Brindle et al., 2016). Poor outcomes for students with disabilities are not surprising, given that teacher preparation in writing instruction and instructional time devoted to this is often insufficient (Ciullo & Mason, 2017).

**Instructional Content**

Instruction for developing writing skills should be aligned with a student’s developmental level for the given task. The relationship of oral language processing, transcription, and short- and long-term memory skills at the sentence level should be considered (Berninger & Amtmann, 2003). What Work Clearinghouse (WWC) recommendations (Teaching Elementary School Students to Be Effective Writers: A Practice Guide; Graham, Bollinger et al., 2012) and initiatives in state standards (e.g., National Governors Association Center for Best Practices & Council of Chief State School Officers: NGA & CCSSO, 2010), have provided guidelines for students’ writing across grade levels. Handwriting instruction for upper and lower case letters is specific; for example, it should begin by kindergarten and be completed by the end of first grade.

Spelling, sentence writing, and written expression, on the other hand, is graduated across the elementary years. In early elementary years, students learn how to write simple and compound sentence structures with the goal of constructing diverse sentence structures by the end of fourth grade. For written expression, across the elementary grades, students should learn how (1) write to tell a story, persuade, and inform; (2) write with clarity and cohesion, (3) write to meet the task,
purpose, and audience; (4) plan their writing; (5) revise and edit; (6) use technology for writing; (7) write short and long responses to demonstrate understanding of subject matter; (8) gather evidence and integrate multiple sources in writing; and (9) write in both short and extended time frames.

In the rest of the chapter, we examine the research base for core areas of writing instruction in the United States. We then set a course for the future by describing research and promising interventions for improving students with disabilities’ success in the general education classroom. Technology, ever more important in 2020 when this chapter was written, is also addressed. In each section, we begin by looking at basic skills, many taught at the beginning of elementary school and connect them to instruction that transitions students for middle school and beyond.

What Do We Know Based on Research? What is Past is Prologue

Historically, when compared to published empirical research in reading and mathematics instruction, research for writing instruction is negligible. This phenomenon has set the stage for writing instruction research in elementary and secondary general education classrooms (Slavin et al., 2019). However, in setting the stage for change, writing researchers have established strong lines of empirical research by focusing on improving writing outcomes for students with and at-risk for disabilities. We review this foundational research and describe the instructional approaches for teaching transcription skills, sentence construction, written expression, and writing from text sources.

Transcription Skills

Transcription skills—handwriting, spelling, and word processing—provide a foundation for continued writing development. Research suggests that proficiency in these skills promotes both writing quantity and quality (Kim et al., 2011; Kim & Schatschneider, 2017). Some elementary students have persistent difficulty in acquiring transcription skills (Abbott et al., 2010), and students with disabilities tend to struggle the most. A recent meta-analysis (Graham et al., 2017) reported that students with disabilities significantly underperform their typically-developing peers on measures of handwriting (effect size: ES = −0.78, confidence interval: CI = −1.17, −0.38) and spelling (ES = −1.50, CI = −1.78, −1.22). Recent findings suggest a similar gap may exist for word processing (Foxworth et al., 2019).

Transcription skills of handwriting, spelling, and word processing are interrelated. Handwriting, the production of legible alphabetic letters, is used to produce correctly spelled words. Word processing is an alternative mode of transcription in which letters and words are typed and edited with word-processing tools. There are a variety of word-processing tools; for instance, the computer-administered writing subtest of the National Assessment of Education Progress (NAEP; White et al., 2015) includes tools for editing (i.e., cut/copy/paste, delete, and backspace), formatting (i.e., underline, bold, italicize, highlight, and indent), and word choice (i.e., spell/grammar checker, dictionary, and thesaurus).

Given the interrelated nature of transcription skills, elementary students are expected to make concurrent and gradual progress (Graham, Bollinger et al., 2012; NGA & CCSSO, 2010). By the end of kindergarten and first grade, it is recommended that all students, regardless of disability status, learn how to handwrite upper- and lower-case letters, spell words that follow phonetic rules as well as common irregular words (i.e., do not follow phonetic rules), and begin typing. In later elementary grades, students are expected to develop a more sophisticated knowledge of spelling (e.g., generalize spelling patterns to unknown words and learn new morphemes), to type as fast as they can handwrite, and to type and edit at least a single page of text in a single sitting by the end of fourth grade.
**Instructional Approaches for Transcription Skills**

Despite debate about the merits of directly addressing transcription skills and the suggestion that passive or incidental approaches are adequate (for a discussion, see Graham & Santangelo, 2014), there is compelling evidence that transcription skills should be explicitly taught through formal instruction and practice. Two recent meta-analyses (Graham & Santangelo, 2014; Santangelo & Graham, 2016) found formal instruction was superior to no instruction on handwriting legibility (ES = 0.59, CI = 0.33-0.85), handwriting fluency, (ES = 0.63, CI = 0.27-0.99), and spelling (ES = 0.54, CI = 0.39-0.70). Some evidence suggests word processing without formal instruction can improve the writing of students with writing difficulties; however, formal instruction is likely needed for students who lack adequate typing fluency or use a limited range of word-processing tools (Foxworth et al., 2019). Compared to their peers, low-performing writers may be less likely to use potentially helpful word-processing tools, such as spell check, or accept suggested automated corrections (White et al., 2015).

**Sentence Construction**

In addition to transcription skills, sentence construction—writing sentences of different structures, such as simple or compound—is a foundational aspect of written expression that contributes to overall writing quality (Allen et al., 2018). Some elementary students struggle to develop sentence construction, and an achievement gap exists between students with and without disabilities. Two recent meta-analyses (Graham et al., 2016, 2017) found students with high-incidence disabilities—learning disabilities (ES = −0.81, CI = −1.34, −0.29) and those with attention deficit hyperactivity disorder (ES = −0.81, CI = −0.96, −0.46)—tend to produce significantly fewer sentences than their typically-developing peers.

Sentence construction is broadly comprised of two types of skills: text writing and sentence structure. Text writing refers to the transcription of multiple words that follow conventions of semantics, spelling, syntax, and usage (Ritchey et al., 2016). Text writing is used within different sentence structures, ranging from simple sentences to more complicated sentence structures (e.g., compound or complex). Simple sentence structures are comprised of at least one subject and one verb (i.e., an independent clause). More complicated sentence structures feature additional parts of speech, such as multiple subjects or verbs, and sophisticated academic language (e.g., logical connectives, pronoun reference, and verb tense) that can improve the coherence of a text and contribute to high-quality composition (Truckenmiller & Petscher, 2020).

As recommended by state academic standards and researchers (Graham, Bollinger et al., 2012; NGA & CCSSO, 2010), the multiple skills involved in sentence construction (i.e., text writing and sentence structure) are gradually acquired across elementary grades. During kindergarten and first grade, it is expected that elementary students acquire multiple text-writing skills, such as grammar (e.g., singular and plural nouns, adjectives, and verb tense) and usage (e.g., capitalization of beginning sentences and proper nouns), and practice writing simple and compound sentence structures. These skills are further developed in later elementary grades. By the end of third and fourth grade, students are expected to be facile and fluent in constructing diverse sentence structures (i.e., simple, compound, and complex) and to use increasingly sophisticated usage (e.g., quotation marks) and academic language (e.g., pronoun reference and prepositional phrases).

**Instructional Approaches for Sentence Construction**

To help students learn how to construct different sentence structures, three complementary approaches may prove beneficial (Datchuk & Kubina, 2013; Datchuk et al., 2020): (a) explicit...
instruction with fluency practice, (b) strategy instruction, and (c) sentence combining with peer-assisted learning strategies. The first approach, explicit instruction and fluency practice, is a promising instructional procedure used to teach simple sentence structure and related text-writing skills of syntax (i.e., nouns, verbs, and subject-verb agreement) and usage (i.e., capitalization and punctuation). In prior studies, students have shown gradual increases in their number of correct writing sequences (CWS) on timed writing tasks (Datchuk, 2017; Datchuk et al., 2015)—CWS is a measure of the number of words within a sentence that correctly uses semantics, syntax, and usage. Of importance, younger, elementary-aged students have shown greater gains from explicit instruction with fluency practice compared to adolescents (Datchuk et al., 2020).

The second approach, strategy instruction or, more specifically, the strategic instructional model (SIM; Schumaker & Deshler, 2003), is used to teach both simple and more complicated sentence structures. The majority of prior research has been conducted with older adolescents (Rogers & Graham, 2008), but some research suggests SIM may be effective for younger, elementary-aged students (Bui et al., 2006). In this approach, students learn a strategy to identify the parts of a complete sentence, then use the strategy to write their own complete sentences. Strategy instruction follows several recursive steps of modeling, guided practice, and independent application.

The third approach, sentence combining with peer-assisted learning strategies, is used to teach more complicated sentence structures, such as simple sentences with multiple nouns and adjectives or compound sentences. In this approach, student dyads are taught how to collaborate with each other and combine kernels (i.e., sentences, phrases, or words) into complicated sentence structures (Saddler & Graham, 2005). As a result of sentence combining, elementary-aged students have not only increased their number of taught sentence structures but also their compositional writing quality (Saddler et al., 2018). Increases in writing quality stem from the fact that students can use sentence combining to edit their compositions, and it prompts students to self-monitor their writing process.

**Written Expression**

Writing in the early grades can be used to tell a story, give an opinion, or provide information. Writing helps students to communicate their thoughts and ideas, persuade others, organize information, and express themselves creatively. WWC (Graham, Bollinger et al., 2012) provides specific recommendations to help educators teach elementary students to be effective writers. These include develop a supportive writing environment and teach strategies for the writing process.

A supportive writing environment for elementary students includes providing additional daily writing time, providing collaborative writing routines and peer assistance, and contingence praise. In a study with 90 students in fourth grade, for example, Berninger et al. (2006) compared business-as-usual classroom instruction with classroom instruction plus additional instruction through after-school writing clubs. Results (Fisher statistic = 4.436, p = .02) demonstrated a significant effect indicating that more children in the writing club group met the state standard in writing on the high stakes test in writing than those in the control group.

In collaborative writing routines, students work together to brainstorm ideas and edit each other’s work (Graham, Bollinger et al., 2012). For example, Yarrow and Topping (2001) completed a study comparing paired writing and individual writing. The paired writing group used a writing flow chart that noted the steps to generate ideas, draft, read, edit, best copy, and evaluate. The effect size of the overall writing quality of the experimental group, when compared to the control group, was 0.58. Graham, McKeown’s et al. (2012) meta-analysis identified four studies with elementary students that used peer assistance to support writing. The results indicated that students working with peers displayed an increase in writing quality (weighted ES = 0.89).
Graham et al. (2015), in a meta-analysis and a meta-synthesis of research-based writing practices, examined previous writing reviews. Findings from the synthesis noted four single-subject design writing studies that used contingent praise to support writing performance with students in the elementary grades. The researchers noted a large positive effect. The final recommendation, noted by the WWC (Graham, Bollinger et al., 2012), is to teach elementary students to understand the various processes in the writing process as well as understand how to use the strategies in a variety of ways with different genres. Students should be explicitly taught about different genres and should be taught how to write effectively to convey their intended meaning to the proposed audience. According to state academic standards (e.g., NGA & CCSSO, 2010), story writing, opinion writing, and informative writing are types of genres that students are expected to write in elementary school. A specific purpose defines genres (e.g., tell a story, persuade an audience, share information), and each has a different text structure. Students need to understand how to adapt their writing for the intended purpose and for the specific audience. Being able to include these elements requires the writer to plan the composition process effectively and use the self-regulation strategies that are described in the social-cognitive model of writing.

**Instructional Approaches for Written Expression**

The social-cognitive model of writing requires environmental, behavioral, and personal self-regulation. Self-regulatory environmental processes include manipulating and organizing the environment to create and maintain an effective writing atmosphere. Self-talk and progress monitoring are included with behavioral self-regulation processing. Personal self-regulatory processes involve cognitive processes such as planning, goal setting, outlining, and mental imagery (Mason & Reid, 2018). The social-cognitive model of writing emphasizes that writers must be aware of the readers’ expectations and be willing to devote time and energy to compose a text that communicates effectively. In the 1990s, Karen R. Harris developed the self-regulated strategy development (SRSD) instructional model for teaching students with learning disabilities strategies and self-regulation procedures for planning and organizing their writing (Graham & Harris, 1996).

A meta-analysis of writing instruction for students in elementary grades (Graham, McKeown et al., 2012) examined the effectiveness of strategy instruction across 20 studies. Findings indicated all of the strategy instruction studies enhanced the quality of students’ writing and produced a positive effect, yielding a statistically significant average weighted ES of 1.02. Fourteen of the twenty studies used SRSD. The average weighted ES for SRSD was 1.17.

**Self-Regulated Strategy Development**

SRSD (Graham & Harris, 1996) combines explicit instruction for strategy acquisition with self-regulated learning. Theoretical components in students’ cognitive development and learning, student behavior, and the role of affect are all utilized in SRSD. SRSD instruction is recursive, instructional stages and lessons can be repeated and revisited (Harris et al., 2008). In SRSD, students are taught to criterion performance, generally noted to be when students have learned to independently apply strategy steps and self-regulation to complete a written task. Six stages for strategy acquisition are included in SRSD lessons:

- **Develop background knowledge.** Prior to introducing a strategy, students’ background knowledge and pre-skills for the writing task should be evaluated. The teacher discusses vocabulary (e.g., transition words) and concepts (e.g., components in a good story) and describes how good writers support the writing process by self-regulating their writing.
Discuss it. While discussing each strategy step, the teacher describes how and when to use the strategy. Anchor or example papers are read, evaluated, and the strategy elements are related to each step and identified. During this early stage, students set goals and commit to learning and using the strategy. Students' current performance can be reviewed and charted at this time or after the next stage, Model it.

Model it. A teacher or a peer models how to apply each step of the strategy and how to use self-regulation procedures by “thinking aloud” while writing an authentic story or essay. Modeling includes specific self-instruction for setting goals, planning and organizing notes, composing the written response, evaluating and self-monitoring performance, and using self-reinforcement.

Memorize it. Students begin to memorize the strategy and how to apply it when it is introduced in Discuss it. Initially, mnemonic charts are used to support memorization, but these visual supports should be faded over time to support students' independence. Lessons can begin or end with memorization practice by asking students to recite steps.

Support it. Scaffolding students’ application of strategies and self-regulation by gradually fading teacher and/or peer support is critical. Revisiting prior lesson and instructional stages by providing booster sessions to reinforce learning is often needed during this stage.

Independent performance. The teacher should provide students with opportunities for independent practice across time and settings. Independent practice supports maintenance and generalization. To check that the student has not lapsed into ineffective writing habits, students’ application of writing strategies and self-regulation should be monitored.

Procedures for self-regulation—self-instruction, goal-setting, self-monitoring, and self-reinforcement—are embedded throughout into SRSD (Mason & Reid, 2018). Teachers assist students in setting appropriate individualized goals (i.e., specific, proximal, and appropriately challenging). Goal setting begins prior to writing and is revisited and revised as the students learn the strategy. Students are also taught to reflect on and evaluate their progress in meeting goals by self-monitoring writing performance. Graphing progress towards meeting goals provides the student and the teacher with information about specific areas in need of remediation and is especially effective for students with disabilities. An often ignored but important self-regulation procedure is self-instruction (i.e., the things said in one’s head). Students should develop personalized self-instruction for problem definition (e.g., What is the first step of the strategy?); focus of attention and planning (e.g., I need to reread the prompt if I did not understand; strategy use (e.g., The first step tells me to write a topic sentence); self-evaluation and error-correcting (e.g., The second step tells me to write three reasons. I have only two. I need to write one more.); and coping and self-control (e.g., I am tired of writing but I see that I have only two steps left to go. I can do this!). Self-reinforcement, an ongoing self-regulatory procedure, is supported by positive self-instruction (e.g., I did it!) and by graphing progress in meeting goals.

Story Writing
There are four interrelated language systems: speaking, listening, reading, and writing (Shanahan, 2006). Each supports story development. Using language to tell stories is an innate part of being human (Bruner, 1991). Initially, children begin to tell stories orally, assisting them with making sense of their lived experiences. As children are exposed to literacy, they begin to construct oral monologues that have features of storytelling such as intonation, syntax, and lexical structure appropriate for writing (Sulzby, 1996). When writing stories, the student author should include story elements such as characters, settings, problems, ordering temporal events, and solutions.

In an early study, Troia and Graham (2002) used explicit teacher-directed strategy instruction to teach story writing to 20 fourth and fifth grade students with learning disabilities (LD). Troia and Graham compared two groups: a process writing instruction group (comparison group) and an experimental treatment planning strategies group. The experimental group of students was taught...
planning strategies which included identifying the purpose of the story writing activity, setting appropriate goals, brainstorming ideas, and organizing the ideas using the acronym STOP & LIST (Stop, Think of Purposes, and List Ideas, Sequence Them). Students that were taught explicit teacher-directed strategy instruction spent more time planning and produced stories that were qualitatively better. The posttest scores for the planning strategy treatment group for story quality $[t(18) = 2.11, p = 0.05]$ demonstrated a significant difference (ES = 1.00) when compared to the process writing instruction group.

Two studies provided the foundation for SRSD story writing research (Graham et al., 2005; Harris et al., 2008). In 2009, Tracy et al. (2009) replicated SRSD strategy instruction for story writing with 127 third grade students. The researchers compared the use of SRSD ($n = 64$) with an experimental group to a control group ($n = 63$) that provided instruction in basic writing skills such as spelling, grammar, and punctuation. The groups were asked to write a story about the picture line-drawn prompts (e.g., a girl looking at a giant egg that is cracking open). The SRSD group was taught a general planning strategy using the mnemonic POW (Pick my idea, Organize my notes, and Write and say more). They were also taught a specific strategy for writing in the story genre using the WWW, What=2, How=2 mnemonic (Who are the main characters? When does the story take place? Where does the story take place? What do the main characters do or want to do? What happens next? How do the main characters feel? How does that story end?). Students generated notes to use for each question. Findings, comparing the two groups, indicated the SRSD experimental group wrote stories that were longer ($d = 0.55$), had more parts ($d = 0.71$), and of better quality than the control group ($d = 0.35$).

Opinion Writing
According to state academic standards (e.g., NGA & CCSSO, 2010), students should learn to write an opinion paper supported with reasons beginning in the primary grades. As students advance to the later elementary years, their opinion papers should also use evidence and explanations to support their reasons. WWC (Graham, Bollinger et al., 2012) recommends that educators teach student writers to expand their concept of audience. It is important to design an opinion paper with reasons that the target audience might find persuasive (Philippakos & MacArthur, 2020). Students should set writing goals and provide reasons that support their view of an argument.

SRSD instruction for the POW+TREE opinion writing strategy was first examined with 73 third-grade struggling writers (Graham et al., 2005). TREE includes eight elements or essay parts—Topic sentence, Reasons (3 or more), Explanations (1 for each reason), and Ending. Students were assigned to one of three groups—SRSD instruction, SRSD plus peer support to foster generalization and maintenance, or a writing workshop business-as-usual comparison group. Results indicated students who received SRSD or SRSD with peer support instruction spent more time writing opinion papers (ES = 1.88 and 2.34 respectively) than the comparison group; quality was also significantly better (ES = 2.80 and 2.14 respectively). The Harris et al. (2008) study with 66 second-grade struggling writers had similar results. TREE was adapted for the younger writers to five parts—Topic sentence, Reasons (3 or more), Ending, Examine parts. Students in the two SRSD groups, when compared to the comparison group, spent more time writing opinions (ES = 1.10 and 1.21 respectively) and wrote better opinions (ES = 1.31 and 1.63 respectively).

Informative Writing
Informative writing focuses on telling how or why. Informative writing may include information regarding explaining a process, developing a concept, or providing new knowledge (Mason et al., 2006). To develop skills required to compose informational text, students need to be taught about the writing process and organizational structures of informative writing (Englert et al., 1988). Knowledge about the writing process includes strategies for planning, drafting, editing, and revising.
In addition to understanding the writing process, the writer must also understand text structure. There are several types of text structures for informative text—description, sequence, problem/solution, compare/contrast, and cause/effect. Teaching students to understand different types of text structure results in higher writing composition quality. Graham, McKeown et al. (2012) found an average weighted ES = 0.59 for improving writing quality with text structure instruction in nine second through sixth grade studies. A meta-analysis and meta-synthesis (Graham et al., 2015) on research-based writing practices, and the common core, and determined students’ use of pre-writing activities (e.g., graphic organizers, brainstorming, drawing, or reading) to gain knowledge improved writing quality (average weighted ES = 0.54).

In order for students to compose informative text, they need to be familiar with their subject. Importantly in inclusive classroom instruction, prior to writing about text, students must be able to read a text and determine the important information from that text (Graham & Hebert, 2011; Graham et al., 2018). Given this, it is critical that students are explicitly taught how to write from the text.

**Writing from Text Sources**

The relationship between reading and writing and the literacy challenges between the two domains are well documented (Graham & Hebert, 2011; Kang et al., 2016). In actuality, state academic standards (NGA & CCSSO, 2010) for informational text reading and informational/explanatory writing in elementary school are closely aligned. In reading, for example, students are expected to (a) refer to details and examples in a text when explaining what has been read, (b) identify the main idea of a text, (c) determine the overall text structure (e.g., classification, temporal sequence of events), and (d) explain how the author uses reasons and evidence. Informative/explanatory writing addresses standards such as (a) introduce a topic clearly and group related information in paragraphs and sections; (b) develop the topic with details, facts, information, and examples; (c) link ideas and information categories using words and phrases (e.g., for example, because); and (d) use precise language and domain-specific vocabulary to explain the topic. Graham and Hebert’s (2011) meta-analytic findings indicated multi-component interventions that target both domains (e.g., reading text plus summary writing or written recall) improve students’ comprehension on standardized tests (ES = 0.40) and researcher-developed (ES = 0.51) assessments.

Students with disabilities who already experience difficulties in comprehending text may also struggle with the processes needed for writing about the content learned through reading (Toste et al., 2020). Intensive interventions focused on remediated reading and writing deficits have the potential to reduce the risk of academic failure across the curriculum (Clemens et al., 2020).

**Instructional Approaches for Writing from Text**

By improving students’ ability to write effectively about a text that has been read, learning is facilitated by improving understanding of complex texts, by helping students relate topics to personal experiences, and by supporting the reformulation and extension of ideas (Afflerbach et al., 2020). One instructional approach is SRSD for TWA (+PLANS (Pick goals, List ways to meet goals, And make Notes, Sequence: Graham et al., 1992). In SRSD for TWA+PLANS, students are taught to self-regulate their use of reading strategies throughout all reading phases, self-regulate writing notes from text, and then taught to set goals to self-regulated writing an informative essay. Two SRSD for TWA+PLANS instructional studies with fourth grade students (Mason et al., 2006, 2013) were evaluated and noted to have met expected design standards (Kang et al., 2016). In both studies, TWA was taught first, followed by instruction in writing notes on a TWA graphic organizer, and ending with informative writing instruction with PLANS.
In the first TWA phase, Think before reading, students are taught to think about the author’s reasons for writing and the structure of the text “think about the author’s purpose.” The next two steps—“think about what you know” and “think about what you want to know”—are adapted from Ogle’s (1989) What I Know, What Do I Want to Learn, What I Learned (KWL) strategy. Three steps are taught in the think While reading phase: “think about reading speed,” “think about linking knowledge,” and “think about rereading parts.” The linking knowledge step, an extension of KWL, prompts students to make connections between what they know and what is being read. In the think After reading phase, students are asked to think about the information in the passage and apply research-based strategies for main idea development (Graves & Levin, 1989), summarization (Brown & Day, 1983), and then retell what was learned.

SRSD for PLANS informative writing provides students with steps for developing personal writing goals (Pick goals) and structure for monitoring and evaluating (List ways to meet goals) their own performance (Graham et al., 1992). Goal setting is a critical component of the writing process. Goals that are specific, proximal, and challenging help writers understand the specific tasks to be completed and foster effort and motivation (Harris et al., 2011). Goals in PLANS instruction are individualized with student involvement and commitment, and when needed, can be revised. In addition, students are encouraged to attribute improvement in writing to achieving goals.

The first TWA+PLANS study, a multiple baseline single case study, included nine low-achieving fourth-grade students with and without disabilities (Mason et al., 2006). Results indicated that students’ reading comprehension, measured through oral retelling and informative writing, improved to criterion (i.e., main idea and evidence for each text paragraph orally stated and written) after instruction. Findings from the second study, a randomized controlled trial study with 72 low-achieving fourth-grade students (Mason et al., 2013), indicated that students in TWA+PLANS treatment, compared to a business-as-usual control, had positive large effect differences in oral retell (main ideas + evidence: Posttest ES =.61–.93, Maintenance ES =.93–1.17), writing measures (main ideas + evidence: Posttest ES =.73–1.37, Maintenance ES =.93–1.55), and a vocabulary measure (number of different words written: Posttest ES =1.29, Maintenance ES =1.37). Importantly, in both studies, students reported that instruction helped them write about what they learned.

Setting the Course for Effective Inclusion

If students are to succeed in school, they must learn to write (Graham, 2019). The poor writing instruction in inclusive classrooms noted earlier in this chapter has done little to address the increasing accountability for positive outcomes and the increasing expectations for all learners, including those with disabilities, for success in middle school and beyond. Highlights of research that can bridge the gap between elementary and middle school grades are presented next.

Transcription Skills

Transcription skills include handwriting alphabetic letters and spelling complete words. In addition, alphabetic letters and words can be typed and edited with keyboarding tools for additional practice and engagement.

Handwriting

There are several recommendations to improve the handwriting of elementary students with and without disabilities, including content, instructional practices, and curriculum (Datchuk & Kubina, 2013; Santangelo & Graham, 2016). Regarding content, early-elementary students should be taught the shape, name, and order of all upper- and lower-case letters. All three of these aspects are involved
in how handwriting is measured across time, and it highlights the fact that handwriting is not simply a physical action but it involves cognitive processes and language (Berninger & Amtmann, 2003). In fact, intervening on motor processes alone (i.e., in isolation from handwriting letters and alphabetic knowledge) has produced mixed results (Santangelo & Graham, 2016). It is recommended that all aspects of handwriting content are taught through explicit, scaffolded instruction.

Instructional practices for handwriting include scaffolded instruction, visual cues, activities for memory retrieval and orthographic coding, fluency practice, and technology integration (Datchuk & Kubina, 2013; Santangelo & Graham, 2016). Scaffolded instruction involves teacher-led modeling, followed by guided practice with frequent opportunities for students to respond and receive feedback, and independent practice without additional assistance. Visual cues of (a) arrows to show direction and (b) numbers to show the order of letter strokes are used to assist students in handwriting letters. Initially, students trace over faintly written examples (i.e., letters written with dashed lines or dots), using visual cues for order and direction, then they write their own letters from memory.

Activities for memory retrieval and orthographic coding are done to commit letter shape, letter name, and alphabetic order to memory. These activities include cover–copy–compare steps: Students view a letter, cover it, copy it from memory, then uncover it and compare their response. In addition, students can write and say letters presented in order (e.g., d e f g), then letters are gradually removed (e.g., d _ f _ ) and students write and say the missing letters from memory. Fluency practice is done to help students build upon legible letter formation with increased speed. During fluency practice, students quickly copy letters or handwrite them from memory within a specified time (e.g., 2 minutes). Following practice, students receive feedback on their performance. In addition to practice, preliminary research has found possible benefits from integrating technology into handwriting instruction by having students handwrite with their fingers or a stylus on a tablet device (Berninger et al., 2015).

Many of these instructional practices are found in the CASL Handwriting Program (Graham & Harris, 1999). It is a supplemental, paper-based curriculum that includes teacher and student materials for 27 lessons. Prior studies have found that as little as 15 minutes of instruction per day can improve student handwriting (Graham et al., 2000).

**Spelling**

Even though spelling describes the production of whole words, there are multiple sub-linguistic aspects that need to be addressed (Graham, Bollinger et al., 2012; Squires & Wolter, 2016; Williams et al., 2017). These aspects include phonological awareness, phonics, morphemes, and orthography. Phonological awareness is the detection and manipulation of speech sounds, and phonics is the relation of these sounds to printed letters. Morphemes are the smallest units of words with meaning (e.g., prefixes and suffixes). Orthography refers to the rules and conventions governing written language, such as spelling rules (e.g., i before e except after c) and whole-word spelling of irregular words that do not follow phonetic rules. Given its overlap with early reading skills, it is no surprise that spelling instruction can also improve student reading (Graham & Santangelo, 2014).

Research suggests that multiple aspects of spelling should be addressed with a combination of teacher-led explicit instruction and student-led word study (Wanzek et al., 2006; Williams et al., 2017). For teacher-led explicit instruction, students receive scaffolded assistance (i.e., modeling, guided practice, and independent practice), multiple practice opportunities, and immediate feedback and error correction. **Spelling Mastery** (Dixon, 2007) is one commercially available curriculum with evidence that it improves student spelling performance. It uses an explicit, direct instruction approach to teach multiple aspects of spelling, including phonological awareness, phonics, morphemes, spelling rules, and whole-word memorization of irregular (i.e., non-phonetic) words.
For student-led word study, students are taught a procedure to memorize whole-word spelling: They self-monitor their use of procedure steps as well as their performance. A common word study procedure is cover, copy and compare. Students first view a word, then cover it up. After a time delay, they attempt to copy the word from memory. Then, the original word is uncovered, and students compare their responses to it. If the word is misspelled, students repeat the cover, copy, and compare steps.

**Word Processing**

Compared to the other two transcription skills of handwriting and spelling, less is known about effective instructional approaches to teach typing and word-processing tools. Touch typing is the skill of producing text via a keyboard without having to locate individual letters visually. Preliminary evidence suggests that touch-typing instruction may improve student typing fluency and writing quantity (Donica et al., 2018; Weerdenburg et al., 2018); however, more research is needed to determine the benefits of specific curriculum materials or online software and other applications.

Besides touch typing, brief, explicit instruction on word-processing tools may prove beneficial. In several studies, students were taught how to use word-processing tools (e.g., cut/copy/paste, delete, and use of backspace) prior to learning strategies to plan, compose, and revise extended composition (Evmenova et al., 2016; Regan et al., 2017). More research is needed on how to efficiently teach a variety of word-processing tools (e.g., font selection and formatting), but these results suggest that students can be briefly taught word-processing skills that are relevant to a specific writing task. For instance, in one study, students were taught how to cut/copy/paste text when using a computer-based graphic organizer to plan their writing (Evmenova et al., 2016).

**Sentence Construction**

Students develop complementary sentence structures across elementary grades. Sentence structures include simple sentences and more complicated structures, such as compound or complex sentences.

**Simple Sentence Structure**

Explicit instruction with fluency practice is a promising approach to teach simple sentence structure and related text-writing skills (Datchuk et al., 2020). During instruction and practice, simple sentences are defined in student-friendly terms. Specifically, simple sentences are defined as having two parts: a part that names someone/something or something and a part that tells more. Text-writing skills related to syntax (i.e., nouns, verbs, and subject-verb agreement) and usage (i.e., capitalization and punctuation) are taught using this student-friendly definition. For example, to teach subject-verb agreement (e.g., was for singular nouns or were for plural nouns), students are told that when a sentence names more than one someone/something (e.g., Bob and Daveed), then were is used to tell more (e.g., Bob and Daveed were at their school).

Explicit instruction is delivered first to establish sentence writing accuracy, then fluency practice is delivered to increase sentence writing speed. During explicit instruction, the multiple skills addressed (i.e., sentence structure and text writing) are segmented into small instructional units to control for task difficulty, and scaffolded support (i.e., modeling, guided practice, and independent practice) is provided. Students follow a standard sequence of activities: They identify correct and incorrect instances of simple sentence structure and text-writing skills, complete fill-in-the-blank items, and generate their own responses. In addition, picture-word prompts are used to reduce cognitive demands (e.g., idea generation) associated with sentence writing. As an example, a picture-word prompt may depict a small child building a sandcastle with the words child and castle.
Following explicit instruction, students engage in fluency practice writing simple sentences. During fluency practice, students complete multiple practice timings (e.g., three, 1-minute practice timings), writing simple sentences to a variety of picture-word prompts. Following each practice timing, students are provided performance feedback (i.e., number of CWS), praise for complete sentences and text writing skills, and error correction. At the end of each fluency practice session, students record their best performance on a table or graph and are encouraged to increase their performance.

**Simple and Complicated Sentence Structures**

Strategy instruction or SIM is another approach to teach simple and more complicated sentence structures (Schumaker & Deshler, 2003; Schumaker & Sheldon, 1998). Like explicit instruction, SIM involves segmenting multiple skills into small instructional units and providing scaffolded instruction. Sentence structures are segmented into two broad categories: (a) parts of a complete sentence and (b) sentence formulas. Students are taught there are five parts to a complete sentence: a capital letter at the beginning, end punctuation, a subject, a verb, and it makes sense. Sentence formulas are shorthand for a variety of simple and complicated sentence structures, such as SV (subject and verb), SSV (subject, subject, and verb), and SVV (subject, verb, and verb). Both of these broad categories—parts of a complete sentence and sentence formulas—are then taught in a highly structured, scaffolded manner: Students identify examples and non-examples (e.g., beginning capitalization of a sentence), complete fill-in-the-blank sentence frames (e.g., write a verb for an SV formula), and generate their own sentences.

As part of SIM, several strategy instruction steps are used in a recursive process. Prior to formal instruction, students make a commitment to learn the PENS MARK strategy. The first word, PENS, stands for Pick a formula, Explore words to fit the formula, Note the word, and Search and check. The second word, MARK, further explains the search and check steps: Mark out the infinitives, Ask is there a verb, Root out the subject, and Key in on the beginning (i.e., capitalization), ending (i.e., punctuation), and meaning. During strategy instruction, the PENS MARK strategy is modeled. Then, students engage in the controlled practice of identifying or completing sentences in isolation and advanced practice generating their own sentences that follow a sentence formula. Towards the end of strategy instruction, students make a commitment to generalize the use of PENS MARK to other classes and writing tasks and practice applying it to new writing tasks.

In addition to SIM, sentence combining is another approach to teach more complicated sentence structures, such as simple sentences with adjectives or compound sentences (Saddler & Graham, 2005; Saddler et al., 2018). With sentence combining, students are taught how to combine sentence kernels and cues into a single sentence. Sentence kernels are words, phrases, or sentences. Cues are underlined words, punctuation marks, or conjunctions. As an example, two sentence kernels with an underlined cue can be combined into a simple sentence with an adjective: *Lanqi went to the store + The store was large = Lanqi went to the large store.* As another example, two sentence kernels with a conjunction cue can be combined into a compound sentence: *Jamil closed the jar lid slowly + The fireflies flew away + and = Jamil closed the jar lid slowly, and the fireflies flew away.* Students are taught how to use sentence combining to construct and edit their own sentences, paragraphs, and extended compositions.

Sentence combining has typically been taught through a combination of teacher-led instruction and peer-assisted learning strategy (Saddler et al., 2008). Teachers model how to construct sentences through sentence combining, then lead students through guided and independent practice. Students are paired into dyads, and they engage in oral and written practice. Specifically, one student reads aloud sentence combinations while the other student provides feedback regarding the structure and overall quality. Following oral practice, students collaborate on writing sentence combinations, editing paragraphs, and composing and editing extended compositions.
**Written Expression**

Writing expression instruction provided to elementary students has received considerable research, including multiple meta-analyses and synthesis, establishing the quality of the research and the strong effects of the intervention. (e.g., Graham, Bollinger et al., 2012). The acquisition of effective writing skills in the early years is crucial to achieving the literacy demands of the middle and high school years. In order to prepare students to meet the rigorous writing standards in later grades, educators should use evidence-based writing strategies and instructional approaches. Standards, such as state academic standards (e.g., NGA & CCSSO, 2010), require that upper elementary school students be able to use writing for a variety of purposes, revise and edit, and acquire note-taking skills (Ciullo & Mason, 2017). Acquisition of these skills is often challenging for students with disabilities. To support students with diverse writing needs in the inclusion classroom and to prepare these students for successful writing in middle school and beyond, strategies for writing in content classrooms, for increasing expectations, for improving writing quality through revision and editing, and for note-taking should be part of their instruction.

**Writing in the Content Classroom**

Students often demonstrate their understanding of content in social studies and science through writing. Quick writes (short extended written responses), for example, are often used to support students in synthesizing content learned (Frey & Fisher, 2008). The POW (Pick my idea, Organize my notes, Write and say more) + TIDE (Topic, Important Evidence, Details to Support Evidence, and Ending) strategy (Mason et al., 2012) can be used to support an informative writing task in content (e.g., for science, Select one simple machine and clearly explain how it works; for social studies, Describe the process for becoming a Supreme Court judge). Students respond to the prompt by writing for 10 minutes using the mnemonic POW+TIDE to plan and write. When teaching quick writing, students are introduced to transitional words, a graphic organizer, and a mnemonic chart to support strategy use during writing. Gradually, the supports are removed to demonstrate independent use of the POW+TIDE strategy (Mason et al., 2009). Benedek-Wood et al. (2014) demonstrated that SRSD for informative, quick writes in four inclusive sixth-grade science classrooms improved writing quality and quantity for both students with and without disabilities. Using an evidence-based teaching approach, such as SRSD, is most effective in supporting students with disabilities’ quick writing performance in the inclusive classroom.

**Argumentative Writing**

Scaffolding students writing from persuasive writing (i.e., writing that includes emotions and personal opinions) to writing arguments (i.e., writing that includes logic and reasoning) is critical in upper grades. Writing arguments helps students interpret and organize historical and scientific information (De La Paz, 2005). One evidence-based argumentative writing strategy, STOP (Suspend judgment, Take a side, Organize ideas, and Plan) and DARE (Develop a topic sentence, Add supporting ideas, Reject an argument for the other side, End with a conclusion), can be used assist students in organizing reasons for supporting an argument. Prior to composing, students list all the argumentative reasons/ideas for the topic (e.g., reasons for eating snacks in column one and reasons for not eating snacks in column two). The mnemonic STOP reminds students to consider one side of the argument to support their essay. The second mnemonic, DARE, is used to add essay elements and consider the reader’s perspective (Harris et al., 2008). In 2005, De La Paz tested the effects of SRSD for STOP and DARE with 70 eighth grade students with varying abilities, including students with disabilities. Students in the experimental group used the STOP and DARE strategy to plan argumentative essays and wrote historically more accurate essays (ES ranged from 1.17 to 1.23 for essay length, persuasiveness, and number of arguments). In two studies, Ennis et al. (2013) and Ennis...
and Jolivette (2014) evaluated the effects of SRSD for STOP and DARE with elementary students with emotional and behavioral disabilities in residential settings. After instruction, students’ writing improved in quality, number of essay elements, and written words, supporting the premise that this strategy can be effective for elementary-aged students.

Revising and Editing

Students are required to plan, compose, revise, and edit during the writing process. Teaching upper elementary students to understand this writing process prepares them for writing in the middle grades (Ciullo & Mason, 2017). And, the WWC recommends that students learn and use the writing process, including revising and editing (Graham, Bollinger et al., 2012). Most low-achieving writers recognize the need for good handwriting and spelling in writing; however, they are less aware of the importance of revising for content (Harris et al., 2011; Zimmerman & Risemberg, 1997). It is important that revision, specifically for addressing the content and meaning of what has been written, be taught and implemented prior to focusing on editing for mechanical errors.

In 1988, Graham and MacArthur taught fifth and sixth grade students the six-step SCAN revising and editing strategy for improving composition clarity and cohesiveness and for detecting and correcting mechanics. The SCAN strategy prompts students to: “(a) Read your essay; (b) Find the sentence that tells what you believe—is it clear?; (c) Add two reasons why you believe it; (d) SCAN each sentence (Does it make sense? Is it connected to my belief? Can I add more? Note errors.); (e) Make changes on the computer; (f) Re-read the essay and make final changes” (p.138). Using the SCAN strategy, students in the Graham and MacArthur study made more revisions following instruction as well as increased the quantity of words written.

One WWC (Graham, Bollinger et al., 2012) recommended strategy students can use to edit an essay is COPS (Capitalization, Organization, Punctuation, and Spelling). It is critical that students’ authentic writing is used when learning to edit and for COPS to be explicitly taught (Ciullo & Mason, 2017). During instruction, for example, teachers should model editing questions such as, Have I capitalized? or Is my punctuation correct? Students can ask themselves editing questions such as, Did I spell words correctly? or How is the overall appearance of my paper?

Note-Taking

Note-taking is considered a writing standard (NGA & CCSSO, 2010) that needs to be addressed in elementary classrooms to prepare students for middle school. Students are required to listen and take notes on the critical content information. Students with diverse writing needs may require scaffolding to support the complex and cognitively demanding task of notetaking in the classroom (Ciullo & Mason, 2017). Ciullo and Mason recommend the use of guided notes to scaffold notetaking, especially for writing in content area classrooms such as science and social studies. A basic template can be used for creating guided notes by leaving blank lines and spaces in text for students to write in the missing information (e.g., A _________ is a type of simple machine.). In Patterson’s (2005) study with eight students with disabilities in a fourth-grade inclusion classroom, students used teacher-created guided notes to record information presented during a lesson. Overall, the mean scores of the students’ quizzes increased from 33% to 91% when using guided notes to study.

Alternative Modes of Composing

State academic standards (e.g., NGA & CCSSO, 2010) recommend that writing digital text should be a priority for middle school students. Being competent in digital writing prepares students to complete academic, personal, and career-related skills (Martin & Lambert, 2015). Williams and
Beam’s (2019) research review of 29 technology and writing studies found that students using technology for writing demonstrated improvements in the composition process, motivation, and collaboration with peers. Technology was particularly supportive for reluctant writers, with demonstrated improved enthusiasm and increased writing time. Martin and Lambert (2015) determined that students using technology have different digital writing levels and suggested that instruction should be differentiated depending on the level of technology experiences and exposure. Many students with disabilities benefit from additional instruction, guidance, and exposure in using digital tools and features.

The WEGO (Writing Efficiently with Graphic Organizer) is a digital graphic organizing tool that students can use to support writing persuasive, argumentative and narrative essays. The self-regulation strategies in WEGO assist students with goal-setting, self-monitoring, and self-evaluation (Evmenova et al., 2020). Students are asked to (a) pick a goal for their writing, (b) complete an organizing table, (c) edit and revise their work, and (e) evaluate their writing and receive feedback. Results in Evmenova and colleagues’ (2016) study found the use of the digital organizer increased students with disabilities writing quality as well as improved perceptions and attitudes.

Speech-to-text dictation tools have also demonstrated writing improvements for students with disabilities. When students with learning disabilities, for example, wrote without the demands of transcription skills (e.g., handwriting, spelling), the quality of writing improved (Gillespie & Graham, 2014). Speech-to-text technology can remove transcription barriers and allow the writer to focus on content development. Gillespie and Graham found that dictation resulted in statistically significant improvements in writing quality (average weighted ES = 0.55, p<.01).

We Know What We Are, But Know Not What We May Be And When I Am Forgotten…Say, I Taught Thee

As substantiated by national writing assessment data, a significant number of students with disabilities are failing to meet standards in transcription skills, sentence writing, and written expression. Although benchmarks have been established to address this problem (e.g., NGA & CCSSO, 2010), teachers have noted being ill-prepared in using evidence-based practices for writing (e.g., Graham et al., 2007; 2008). Teachers note-making few or little adaptations to their writing instruction for low-achieving writers (e.g., Cutler & Graham, 2008), directly impacting students with disabilities who may have writing deficits. As noted throughout this chapter, a number of interventions have been evaluated and found effective for students with disabilities; however, writing instruction is often neglected (Graham, 2019). Graham notes four factors that need attention for change—increase teachers’ classroom time for teaching writing; improve teachers’ preparation, training, and beliefs about writing; include writing instruction in national, state, district, and school policies. And, most importantly for the inclusive classroom, address the historical, social, cultural, and political influences that place writing as less important when compared to other academic domains.

References


