Self-Regulated Strategy Development: Theoretical Bases, Critical Instructional Elements, and Future Research

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CHAPTER 6

Self-Regulated Strategy Development: Theoretical Bases, Critical Instructional Elements, and Future Research*

Karen R. Harris and Steve Graham

A critical purpose of this book is to present analyses of effective instructional approaches with sufficient detail to allow readers (researchers, teachers, curriculum developers, and others) to construct their own interventions, adapted to regional and local needs, which meet the main principles of the previously validated intervention programs. An additional goal is to provide reflection and discussion about theoretical background and empirical evidence which support the specific intervention programs described. In this chapter, we focus on Self-Regulated Strategy Development (SRSD). SRSD was designed as a strategies instruction model for use across learning domains when complex learning is required, but the majority of research on SRSD has been in writing.

The first section of this chapter addresses the initial and ongoing theoretical and research contributions to SRSD. SRSD was initially, and continues to be, developed by integrating research findings across theoretical and empirical approaches to teaching and learning, as we explain. In the second section of this chapter, we present a detailed analysis of SRSD instruction. Here, we discuss the characteristics, components, and stages of SRSD instruction as deeply as space permits, so others can develop a deeper understanding of SRSD and construct local applications (detailed professional learning lesson plans and materials can be found in the e-chapter accompanying this chapter). We also share SRSD instruction and results in a recent study with 9–10 year olds who participated in SRSD instruction to learn both reading and writing strategies that culminated in writing a persuasive essay based on both their own reasoning and source text. This meets an additional goal of this book, providing a teacher's eye view of SRSD.

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The third section of this chapter includes a brief summary of the evidence base for SRSD; however, over 100 studies have been reported, making it impossible to summarize the entire data base here. Rather, we summarize the results of recent meta-analyses of SRSD research. Finally, in the fourth section of this chapter, we conclude with a discussion of what we know about why SRSD works; fictions, misrepresentations, and errors about SRSD; and issues and needs for future research.

Theoretical Contributions to SRSD

Overview of SRSD Development Since 1980

In the early 1980s, Harris began the development and refinement of an approach to strategies instruction strongly influenced by the integration of affective, behavioral, and cognitive (metacognitive and self-regulation included) theories and research on learning advocated by Meichenbaum (1977), and referred to as cognitive-behavior modification (Harris, 1982, 1985, 1986). Graham was deeply immersed in the study of writing, the writing process, and writing genres; we met and decided to merge our interests, with Harris focused on further refining the strategies instruction approach and Graham focused on devising effective writing process and genre based strategies. In 1985, Harris and Graham published their first study of a strategies instruction approach to writing called "*self-control strategy training.*" While space precludes a detailed description of the evolution of this approach, in the following years Harris, Graham, and their colleagues (too many to list, but we note that early contributors to the development of SRSD include Charles MacArthur, Shirley Schwartz, Barbara Danoff Friedlander, Robert Reid, and Linda Mason) published papers demonstrating the further development of this approach to strategies instruction, referred to in 1987 as "*self-instructional strategy training*" (Graham, Harris, & Sawyer) and in 1989 as "*self-instructional strategy development*" (Graham & Harris, 1989; Harris & Pressley, 1991).

Since 1992, this approach has been referred to as "*self-regulated strategy development*," or SRSD (cf. Case, Harris, & Graham, 1992). Interestingly, Case et al. examined SRSD for problem solving in math, rather than in writing (as noted, SRSD was developed as an effective approach to complex learning and instruction across domains). The bulk of research since 1992, however, has addressed SRSD for writing (Graham & Harris, 1993). Further, while initial development of this approach to strategies instruction focused on effective instruction for students with learning disabilities or those at risk, by 1992 it was clear that SRSD was effective across the range of students typically

found in the regular classroom. While more detailed explanations can be found elsewhere (cf. Danoff, Harris, & Graham, 1993; Graham & Harris, 1989; Harris & Graham, 1992, 1999; Harris, Graham, & Pressley, 1992; MacArthur, Harris, & Graham, 1994), changes in components, stages, and expression of the major goals of this approach contributed to the changes in name over time. The term SRSD resulted from the need to more clearly express the role of multiple self-regulation strategies in SRSD instruction and, at that time, the perceived political incorrectness of the term "training" (as Harris noted, while astronauts and others do not object to the term, some in education do).

Selected Enduring Theoretical and Empirical Influences

Several things have not changed regarding the approach to strategies instruction initially developed by Harris, however. Three of the critical aspects of SRSD that have endured are discussed here: theoretical integration; scaffolded, explicit instruction; and criterion-based learning.

Theoretical integration. First, thoughtful, effective integration of diverse, validated approaches to learning, regardless of whether or not the theories and disciplines from which they originated are viewed by some as discordant (such as affective, behavioral, cognitive, constructivist, socio-cultural, and other approaches to teaching and learning), has been and continues to be key to the development of SRSD. Harris, Graham, and their colleagues argue that good instruction does not require a forced choice between competing theories, but rather a *triangulation across and integration of the evidence from various theories, perspectives and lines of research* (Harris, 2016; Harris & Alexander, 1998; Harris & Pressley, 1991; Pressley, Graham, & Harris, 2006; Pressley & Harris, 2006). The SRSD approach to strategies instruction views learning as a complex process that relies on changes across diverse learners in multiple areas, including learners' skills, abilities, self-regulation, strategic knowledge, domain-specific knowledge and abilities, affect, metacognition, and motivation. Skillful and enthusiastic teaching is also critical, as we address further later. Harris and her colleagues continue to argue that there exists to date no single theory of teaching or learning that addresses all of the challenges faced by learners, their teachers, and their schools. Single theories, in fact, may never fully capture complex phenomena such as learning (Harris, 1982, 2016; Pressley, Graham, & Harris, 2006; Harris & Graham, 2009).

Initial foundations. Four theoretical and empirical sources provided the foundation for Harris' initial model of strategies instruction in the early 1980s (Harris, 1982, 1986: Harris & Graham, 2009; Harris, Graham, Brindle, & Sandmel, 2009): 1) Meichenbaum's (1977) cognitive-behavioral intervention model (particularly his emphasis on Socratic dialogue; proposed stages of interven-

tion that involved interactive learning, modeling, and scaffolding; and self-regulation components—he noted the importance of Vygotsky and others' work in this area as well); 2) the work of Soviet theorists and researchers (including Vygotsky, Luria, and Sokolov; cf. Vygotsky, 1962; Wertsch, 1979) on the social origins of self-control, the development of the mind, and the zone of proximal development (this work contributed further to the self-regulation, scaffolding, and modeling components of the SRSD model), 3) the work of Brown, Campione, and their colleagues on development of self-control, metacognition, and strategies instruction (cf. Brown, Campione, & Day, 1981; one critical aspect emphasized by Brown and her colleagues was "informed instruction;" meaning that students should clearly understand what they are doing and why they are doing it, a second was the importance of metacognition), and 4) the work of Deshler, Schumaker, and their colleagues on the validation of acquisition steps for strategies among adolescents with learning disabilities (cf. Schumaker, Deshler, Alley, Warner, & Denton, 1982; their steps were also influenced by the work of Meichenbaum). Each of these sources provided additional insights and influences as well.

Continuing influences. Space does not allow a thorough discussion of the many theoretical and empirical influences on SRSD since this beginning, but further discussion can be found in previous works (cf. Case, Mamlin, Harris, & Graham, 1995; Graham & Harris, 1989, 1993, 1997, 2009; Graham, Harris, & Olinghouse, 2007; Graham, Harris, & MacArthur, 1993; Harris, 1985, 1990; Harris & Graham, 1992, 1999; Harris, Graham, Brindle, & Sandmel, 2009; Harris, Graham, & Mason, 2003; Harris, Graham, & Pressley, 1992; Harris, Graham, & Santangelo, 2013; Harris & Pressley, 1991; MacArthur, Harris, & Graham, 1994; Sexton, Harris, & Graham, 1998; Zito, Adkins, Gavins, Harris, & Graham, 2007). Across these papers, discussion can be found regarding the continuing influence of multiple theories on SRSD, including affective, behavioral, cognitive, constructivist, information processing, social cognitive, sociocultural, and sociocognitive theories, as we all as theory and research on strategies instruction, memory, motivation, self-efficacy, generalization/transfer and maintenance of learning, good learners and good information processors, expertise, and other areas. The works of numerous researchers in multiple disciplines have impacted our development in SRSD; too many to try and list them all here. We are deeply grateful for all of these perspectives and lines of research, however, without which SRSD could not exist. Table 6.1 presents selected characteristics and components of SRSD and the multiple theories that provide triangulation for each.

Scaffolded and explicit instruction. A second aspect regarding our approach to strategies instruction that has not changed over time is our belief

TABLE 6.1 *Selected characteristics or components of SRSD and triangulation across selected theories supporting them**

1. Criterion Based Learning:
   - Carroll's model of learning
   - behavioral theory
   - cognitive-behavioral theory
2. Active/Engaged Learning:
   - motivation theory
   - behavioral theory
   - social-cognitive theory
   - constructivism
   - sociocultural theory
   - cognitive-behavioral theory
3. Scaffolding:
   - behavioral theory
   - motivation theory
   - cognitive-behavioral theory
   - constructivism
   - social-cognitive theory
   - social-cultural theory
4. Focus on Attitudes Toward Writing, Self-Efficacy, and Attributions:
   - attribution theory
   - self-efficacy theory
   - expertise theory
   - motivation theory
   - cognitive-behavioral theory
5. Explicit Development of Self-Regulation (over 8 distinct theoretical groups exist here):
   - behavioral theory
   - cognitive-behavioral theory
   - social-cognitive theory

*This list is representative rather than exhaustive and is based on our study and evaluation of theories (cf. Harris, 1982; Harris & Alexander, 1998; Harris & Graham, 1985, 1992, 1994, 1996, 1999, 2009; Harris, Graham, Brindle, & Sandmel, 2009; Harris, Graham, & Mason, 2003; Harris, Graham, & Pressley, 1992; Harris, Graham, & Santangelo, 2013; Harris & Pressley, 1991)

(based on multiple theories and evidence bases), that scaffolded, explicit instruction is one (although not the only) important approach to learning, and is particularly necessary when students struggle with learning or face complex, challenging academic tasks. Harris (1982) argued that students who struggle with learning or who face challenging academic tasks often require more structured and explicit instruction to develop skills, strategies (including academic, social, and self-regulation strategies), and understandings. Thus, explicit development of both writing and self-regulation strategies continues to be a critical feature of SRSD. The level of structure and explicitness of instruction, however, should be adjusted to meet student needs (Harris, 1982; Harris & Graham, 1996). This perspective requires that the same academic and self-regulation strategies are not necessarily targeted for all students, and that instructional components and processes need to be individualized (as Meichenbaum emphasized in 1977). Central to effective SRSD are thorough learner, task, and situational analyses (Harris, 1982; Harris, Graham, & Mason, 2003). As academic challenges and/or students' learning challenges become more significant, strategy and self-regulation development becomes more complex and explicit, involving multiple learning tasks, components, and stages (cf. Carroll, 1963; Harris, 1982; Sawyer, Graham, & Harris, 1992; Sexton, Harris, & Graham, 1998).

As Harris and Pressley (1991) argued, inclusion of supported, explicit aspects of instruction is not incompatible with constructivist and other views of learning that emphasize active learning and construction of knowledge. Knowledge transformation and construction occur across approaches to teaching and learning, making choices between false dichotomies, including constructed and instructed learning, unnecessary (cf. Resnick, 1987). Explicitness and support do not necessarily equate with isolated skills training, decontextualized learning of subskills, passive learning, or gradual accruing of basic skills (Harris & Alexander, 1998; Harris & Graham, 1994, Harris & Pressley, 1991; Pressley, Graham, & Harris, 2006; Pressley & Harris, 2006). As theoretical and empirical integrationists, we argue that the critical attributes of effective teachers and characteristics of effective instruction (cf. Brophy, 1979; Good & Brophy, 1997) belong to no single theory, but rather are supported by many. Harris, Graham, and Mason (2003), discussing this theoretically and empirically integrated approach to instruction that rejects false dichotomies, stated:

> Ideally, such coherent, integrated instruction is based in learning communities that are educationally purposeful, open, just, caring, and celebrative. Teacher goals and actions in these learning communities are based on ongoing assessment that includes students' cognitive and metacognitive abilities, skills, knowledge, and prior experience, as well as their affec-

> tive and behavioral strengths, needs, and characteristics. Students are provided the level of support needed (from explicit instruction through guided discovery) to acquire skills, abilities, and strategies and to develop and enhance important affective and behavioral targets, such as motivation, adaptive attributions, and engagement. Teachers are responsive to and plan for individual needs and differences, and students are given the time they need to attain valued outcomes of education.
>
> pp. 4–5

Criterion-based learning. Another critical influence on SRSD since the beginning, and that has not changed, is our insistence based on both research and theory that SRSD instruction be criterion-based as opposed to time-based (Harris, 1982; Harris & Graham, 1992). When SRSD is implemented as intended, students move through the instructional process at their own pace and do not proceed to later stages of instruction until they have met at least initial criteria for doing so. Just as important, instruction does not end until the student can use the strategy and self-regulation procedures efficiently, independently, and effectively. Criterion-based instruction is strongly supported by behavioral research and theory (cf. Worell & Stilwell, 1981) and by models of school learning (Carroll, 1963). Students who have been unsuccessful due at least partly to pace of instruction now have a greater chance of success. While current, whole classroom research on SRSD indicates challenges in adhering to this criterion-based approach, it also indicates that SRSD can be successfully implemented at the whole class level, not only in small groups or individually (Festas et al., 2015; Harris, Graham, & Adkins, 2015; Harris, Lane, Driscoll et al., 2012; Harris, Lane, Graham, et al., 2012; Torgerson et al., 2014).

Having provided a summary as detailed as space allows here regarding the initial theoretical and empirical foundations of SRSD and its further development over time, next we present and analyze the characteristics, components, and stages of SRSD instruction. A teacher's eye view of recent SRSD instruction follows. In these sections, the multiple components and characteristics of SRSD today are evident.

Stages, Components, and Characteristics of SRSD Instruction

Key Characteristics and Components of SRSD Instruction

Our research and work with teachers and students indicate that six characteristics are essential to optimizing outcomes with SRSD. Teachers and students

both play critical roles in establishing each of these characteristics; ignoring these critical characteristics can undermine SRSD instruction (cf. Harris & Graham, 1996; Harris, Graham, Mason, & Friedlander, 2008).

First, SRSD provides *supported, explicit instruction* targeting: (1) writing strategies for specific genres (e.g., persuasive essays); (2) general writing strategies (e.g., using powerful vocabulary, crafting engaging opening and closing sections); (3) self-regulation strategies that help manage the writing process and use of writing strategies (four self-regulation strategies are developed: goal setting, self-monitoring, self-instructions, and self-reinforcement); and (4) relevant declarative, conditional, and procedural knowledge (knowing what to do; how to do it; and when, where, and why to do it, respectively).

Second, affective and behavioral challenges in writing are common among developing writers, and especially damaging for those who experience difficulty learning to write. Thus, a critical component of SRSD is *deliberately and repeatedly supporting students in development of motivation, positive attitudes towards writing, and belief in themselves as capable writers (self-efficacy for writing)*. Numerous components of SRSD address these goals. SRSD involves an interactive, engaging, and collaborative learning process among teachers and students. Teachers initially provide the necessary level of scaffolding and support to ensure that students learn the targeted knowledge and strategies, but then gradually and purposefully release control for applying what is learned to the students. To further help students overcome negative perceptions and attitudes towards writing, SRSD is embedded in an affirming and supportive instructional environment where writing is valued and prioritized. In addition, we work with teachers to establish all of the following as part of SRSD instruction: projecting 'contagious enthusiasm' during SRSD instruction; establishing a low-risk environment during writing time; making it clear to students how their effort and strategy use contribute to their writing development; providing frequent, constructive feedback; and creating multiple opportunities for positive peer interactions and support (cf. Harris et al., 2008).

Third, SRSD instruction is *individualized to optimize each student's writing development*. Teachers use their knowledge of students' strengths and needs to differentiate both what and how they teach. For example, a teacher might modify a strategy to make it more complex for some students while initially simplifying it for others. Instruction is further individualized by having students establish personalized goals. The nature and frequency of support and feedback provided to students is also adjusted in response to their individual needs. When SRSD is used with an entire class, there are times when it is appropriate and beneficial for students to work together as a large group. At other times, teachers employ flexible grouping and have students work inde-

pendently or with them in small groups, pairs, or individually (Harris, Graham, & Adkins, 2015; Harris et al., 2012; Sandmel et al., 2009).

Fourth, *students move through SRSD instruction at their own pace.* As noted previously, there is no standardized time-table for moving through the SRSD instructional stages (although ranges of typical times needed are available, cf. Graham et al., 2013). Each student advances from one stage to the next when she/he is ready. Students are also provided with opportunities to re-visit an earlier stage of instruction as needed. SRSD instruction ends for each student when he or she can independently apply and manage the targeted writing and self-regulation strategies successfully.

SRSD lessons typically last 20–45 minutes and occur three to five days a week, depending on the students and time available for instruction. The total time required for students to learn and independently use targeted writing and self-regulation strategies will, of course, vary; however, it often takes less time than teachers anticipate. With elementary-aged students, 8–15 lessons conducted over 4–8 weeks are often sufficient to reach independent performance when initially addressing a writing genre.

Fifth, multiple procedures that promote long-term maintenance and generalization are integrated throughout the stages of instruction (Harris et al., 2008). Examples of how *teachers facilitate maintenance and generalization* include: helping students understand the purpose and benefits of using a strategy; providing booster sessions to review, discuss, and support strategy use as needed; facilitating students' critical consideration of when and how they should use a newly-learned strategy and then evaluating these experiences; exploring how to adapt a strategy for different writing tasks and settings; creating a variety of peer support opportunities that target generalization and maintenance; and bolstering strategy use through collaboration with other school professionals (e.g., other teachers and specialists).

Finally, while research has not yet been funded to study this, ultimately *SRSD instruction should occur across genres and grade levels*, allowing students to continue developing their use of writing and self-regulation strategies. Thus, students are provided with opportunities to refine and expand previously learned strategies, as well as learn new strategies that are aligned with evolving writing goals and tasks.

SRSD Stages of Instruction

The framework for SRSD instruction consists of six recursive instructional stages; students' affective, behavioral, and cognitive strengths and needs are addressed in each stage: (1) *Develop Background Knowledge*, (2) *Discuss It*, (3) *Model It*, (4) *Memorize It*, (5) *Support It* (gradual release of control), and (6)

Independent Performance. The six stages of SRSD instruction are a flexible set of guidelines intended to be thoughtfully combined, modified, and revisited in response to students' and teachers' needs. For example, Stages 1 and 2 typically are integrated together in the early lessons rather than being taught as distinctly different stages. Advanced writers at any grade level may need individualized instruction and more challenging goals and strategies. On the other hand, we have learned that struggling writers need to be able to write a complete sentence (even if it is a simple sentence, such as "The dog ran.") in order for SRSD to be appropriate for them. The critical components and activities typical in each stage are summarized in Table 6.2.

TABLE 6.2 *SRSD instruction**

1. *Develop and Activate Knowledge Needed for Writing and Self-Regulation*
   - read and discuss works in the genre being addressed (persuasive essays, reports, etc.), to develop declarative, procedural, and conditional knowledge (e.g., *What is an opinion?, What does it mean to persuade?, Why is it important to think about your readers? What are the parts of a persuasive essay, are they all here?; How do you think the author came up with this idea, what would you do?; What might the author have done to organize the ideas?; What might the author done when he/she got tired or frustrated?*, and so on), appreciation of characteristics of effective writing (e.g., *How did the writer grab your interest?*), and other knowledge and understandings targeted for instruction. Continue development through the Model It stage as needed until all key knowledge and understandings are clear.
   - explore and discuss students' current beliefs, attitudes, and feelings/emotions about writing/when they write. Discuss what helps them, what gets in their way, and how.
   - discuss and explore both writing and self-regulation strategies to be learned (we typically begin development of self-regulation, introducing goal setting and the goals we will be working on).

2. *Discuss It—Discourse is Critical!*
   - further discuss students' current writing and self-regulation abilities, their attitudes and beliefs about writing, what they are saying to themselves as they write, and how these factors might help or hinder them as writers; emphasize role of both effort and powerful strategies in becoming a better writer (begin development of attributions to knowing the "tricks" of writing and to effort in order to strengthen motivation and self-efficacy for writing).

- graph number of genre specific essay elements and other goals targeted included in pretest or prior essays; this assists with goal setting and tracking progress in writing (graphing prior writing can be skipped if students are likely to react negatively).
- further discuss writing and self-regulation strategies to be learned: purpose, benefits, how and when they can be used or might be inappropriate (this assists with generalization as well as initial learning).
- introduce graphic organizer for the writing genre and task being addressed.
- analyze good, grade appropriate model papers (we often have to write these essays ourselves or collect them from peers, as text found in the classroom is typically above many or most students' writing levels).
- take notes from these papers on a graphic organizer to assist students in learning to make notes (we find that many students need practice and support in learning to make notes rather than writing full sentences on graphic organizers).
- with the teacher, analyze poor essay(s), make notes for a better essay on a graphic organizer, and write this essay collaboratively.
- establish students' commitment to learn strategies and act as collaborative partners; further establish role of student effort and strategy use in becoming an effective writer.
- give students copies of the appropriate mnemonic chart and graphic organizer when appropriate in Stages 1 and 2 for their writing files (these are used throughout stages 3–5 as supports for memory and performance and are gradually faded; see following stages).

3. *Model It*
   - teacher modeling and/or interactive, collaborative modeling of writing and self-regulation strategies, including self-statements, goal-setting, self-assessment, and self-reinforcement; teacher refers to the mnemonic chart and graphic organizer during the writing process (it is not necessary for teachers to model alone while students watch and listen, many teachers prefer interactive, collaborative modeling while maintaining control of the writing process and modeled elements).
   - peers may act as models if appropriate, in small groups or for the class; teachers have videotaped former/current students modeling and explaining their use of the writing and self-regulation strategies and used these videos in SRSD instruction as helpful.

TABLE 6.2 *SRSD instruction** (cont.)

- analyze and discuss strategies and model's performance; make changes as needed; discuss how students will use or modify aspects of the model's performance.
- students develop and record personal self-statements to assist them throughout the writing process and use of the writing and self-regulation strategies (these are now kept in students' writing files and used as another support through Stage 5).
- model self-assessment and self-recording through graphing of collaboratively written compositions.
- promote student development of self-regulation and writing strategies across other tasks and situations; discuss use in other settings (continue generalization support).

4. *Memorize It*
   - although begun in earlier stages, require and confirm memorization of strategies, meaning and importance of each step in each strategy, mnemonic(s), and self-instructions as appropriate.
   - continue to confirm and support memorization in following stages, make sure students have memorized the mnemonics, what they mean, and the importance of each step before Independent Performance (as one student told us, "Of course you can't use it if you can't remember it!").

5. *Support It*
   - teachers and students use writing and self-regulation strategies collaboratively as needed to meet all of the goals identified for composing in this genre while using the visual supports in students' writing folders (the mnemonic strategy chart, graphic organizer, personal self-statements sheets, and targeted words lists such as linking words or "million dollar words"/effective vocabulary).
   - challenging initial goals for genre elements and characteristics of writing established collaboratively with students and individualized as needed; criterion levels increased gradually until final goals met.
   - peers can collaborate in planning, composing, and revising/editing as appropriate; peer support strategies may need to be taught.
   - graphic organizer replaced with student creating mnemonic based organizer on scratch paper (this makes use of the strategy "portable" and not reliant on the physical graphic organizer).
   - prompts, guidance, and collaboration faded individually until the student can compose successfully alone.

- self-regulation components (goal setting, self-instructions, self-monitoring and self-reinforcement) are all being used by this stage; additional forms of self-regulation, such as managing the writing environment, use of imagery, and so on may be introduced.
- discuss plans for maintenance, continue support of generalization.

6. *Independent Performance*
   - students able to use writing and self-regulation strategies independently; teachers monitor and support/enhance as needed.
   - fading of overt self-regulation may begin or continue (graphing may be discontinued, self-statements sheets may not be out during writing, and so on).
   - plans for maintenance and generalization continue to be discussed and implemented.

**Aspects of affect, cognition, and behavior are addressed in each stage; a "stage" of instruction is not equivalent to a single lesson; Stages 1 and 2 are often combined in instruction; a stage or combination of stages may take several lessons to complete; Stages 3 and 5 typically take the most time in instruction; instruction is often recursive across stages; students should progress across stages as they meet criteria for doing so. This table was adapted from Harris, Graham, Chambers, & Houston, 2014.*

A Teachers' Eye View of SRSD: "POW + TREE + TWA"

Here, we present a brief description of how we and our colleagues recently taught small groups of 4th and 5th grade struggling writers to write persuasive essays using informational source text, as required by the new Common Core State Standards in the US. This description is adapted from Harris, Graham, Chambers, and Houston (2014). A complete set of materials for practice-based professional development for teachers to prepare to teach these strategies, as well as all of the professional learning lesson plans and all materials needed for classroom instruction, is available in the e-chapter accompanying this print chapter (add link here*). Each group consisted of three students; each student scored below the 25th percentile on a normed writing test but was able to write complete sentences when given a pretest. Since this initial study, two randomized controlled trials have further validated this set of reading/writing strategies (Harris et al., 2016; Houston et al., 2016)

It is unusual in the US to ask 4th and 5th grade students to write persuasive essays using source text; typically students at this age write opinion essays

* **https://figshare.com/articles/pow_tree_twa_for_Writing_Persuasively_from_Source_Text_Lesson_Plans_Materials_and_Tips/5217226/2 Download of all SRSD lesson materials.**

based on their own reasoning. Research indicates that using SRSD to teach the strategies represented by POW + TREE has been very successful for teaching second through fifth graders to write such opinion essays. POW (Pick my idea; what is the writing task, who is my reader, what are my goals, etc.), Organize notes (using a graphic organizer or scratch paper with a graphic organizer reminder), Write and say more (continue to evolve ideas while writing) applies to most writing tasks, guides students through the writing process, and makes them a POWerful writer. TREE [Topic sentence (tell what I believe), Reasons (3 or more; Why do I believe this? Will my readers believe this?), Explain reasons (say more about each reason to convince your reader), and Ending (wrap it up right!)] assists students in making and organizing notes for persuasive writing. Because POW+TREE does not involve use of source text, we modified another validated strategy for close reading of text referred to as TWA (Think before reading, While reading, and After reading; Mason et al., 2012) to work for 4th and 5th graders in conjunction with POW+TREE. SRSD instruction for POW+TREE+TWA (see Figure 6.1, each component of TWA is described further there) is described next.

Prior to instruction, we read an informational text on being fit aloud with the students (who had their own copies to refer to as they wrote) and then asked them to write an essay, taking as much time as they liked, responding to the following prompt: Write an essay to your classmates persuading them to be fit kids. This pretest essay was written by a 9-year-old 4th grader named Avery (spelling is corrected):

> *You should get fit because you will be fat unless you eat healthy foods. If you are not fit you might not be able to play sports. If you don't like sports, it is OK, you don't have to play sports. People play sports to get fit. It helps them lose weight faster. You should work out for 1 hour because you will be in shape. If you don't have money to go the gym, it is OK just run around the block or walk your dog. When you're done doing all of that go outside and just sit in the front of your house for now. If you have any questions for me, just ask me. Thank you for reading my story. Hope you enjoyed. Go outside. Don't play games all the time. Get outside. Play football, any sports. Have fun being a fit kid. Hope you like being fit.*

Stages 1 & 2: Develop Background Knowledge and Discuss It, POW+TREE

After the pretest, the first lessons combined developing background knowledge and discussing it (see Table 6.2). The initial focus was on POW+TREE for opinion essays on topics such as "Should children your age get an allowance?" Using

TWA with informational text was not introduced until later in instruction. We believed it was important for these struggling writers to first understand and write opinion essays, providing a foundation for moving to persuasive writing using source text. Instruction included discussion of what students knew about opinion essay writing and foundational knowledge and concepts such as: What is an opinion?; What does it mean to persuade someone?; and What are the differences between facts and opinions? Students learned about a "trick" that all good writers use whenever they write, POW, and about a trick for remembering the critical parts of a good persuasive essay, represented by TREE (see Figure 6.1).

Students discussed that good persuasive essays are fun for you to write and fun for others to read, make sense, consider what matters to the reader, and can convince your reader to agree with you. They found the parts of TREE in model opinion essays (1–2 paragraphs in length and with 3 or more reasons) and discovered the linking words that told the reader another reason was coming. Each student started a record of good linking words and added to it throughout instruction. A graphic organizer for TREE was introduced and used to take notes from the sample essays with teacher guidance. Students also read poor essays, discussed what was wrong with them, and made notes on a graphic organizer for better parts. They then wrote new essays with their teacher that had all the necessary parts and were persuasive. Throughout these lessons and Stage 3, memorization of the strategy mnemonics POW+TREE and the meaning and importance of each step was emphasized. It is common in SRSD for students to learn to evaluate and graph their performance on a pretest at this time. We delayed this until after students learned TWA, however, given that the pretest involved reading source text.

Stage 3: Model It, POW+TREE

Next, the teacher modeled using POW+TREE to write a good opinion essay, with the students helping her as she decided on each element, made notes on the graphic organizer, and then wrote the essay, adding more ideas as she wrote. She set goals to include all the parts of a good opinion essay, write an essay that was fun to read and fun to write, and to try hard to persuade the reader. While modeling, she offered a running "think aloud." For example, she used self-statements to help *focus her attention and use the strategy steps* ("What is the first thing I need to do?"), *stay on task* ("Don't think about other stuff—stay focused!"), *monitor performance* ("Will this introduction catch my reader's attention?"), *cope with frustration* ("I can do this. Take a deep breath and try again."), and *reinforce effort* ("I knew I could think of a better explanation for that reason.").

Self-monitoring of writing performance was introduced by having students evaluate each essay written together, count the number of parts included, and record this number on a graph consisting of rockets broken into 8 parts (cf. Harris et al., 2008). A basic essay should have 8 parts: the topic sentence, 3 reasons, an explanation for each reason, and an ending. When essays included more than 1 explanation for a reason or more than 3 reasons (and corresponding explanations), students "busted the rocket" and wrote the total number of parts at the top. Finally, a star by the rocket was colored in for each linking word used in the essay.

Stage 4: Memorize It, POW+TREE

Students had worked to memorize the strategy steps, their meaning and importance, and the corresponding mnemonics POW+TREE throughout the previous lessons, using peer practice, rapid fire games, and so on. At this point, the teacher simply made sure that each student had these down or provided further practice if needed.

Stages 5 and 6: Support It and Independent Performance, POW+TREE

The teacher wrote collaboratively with students in response to prompts, providing as much guidance and support as needed. As students became more confident and capable, the teacher gradually released control to them, until students were able to write opinion essays with 8 parts or more on their own. Students used scratch paper to note the parts of TREE and make notes, rather than a graphic organizer. Once each student was capable of writing simple opinion essays, we moved into incorporating TWA for use with POW+TREE as described next.

Stages 1 and 2: Develop Background Knowledge and Discuss It; Add TWA and Making Notes

Students were introduced to the TWA strategy for close reading (see Figure 6.1). We developed the texts used with these struggling writers to control for length, reading level and complexity, as recommended by Mason et al. (2012) for initial development of the TWA strategy with students. The teacher guided discussion of the characteristics and purpose of informational text; helped students understand that informational text includes main ideas, details, and facts; and discussed how the TWA strategy would help them identify information from text that can be used in writing to persuade. The importance of also using your own ideas for reasons and explanations was emphasized strongly, as good writers do both. The teacher and students read several informational texts together until students were comfortable marking texts for ideas for reasons and explanation.

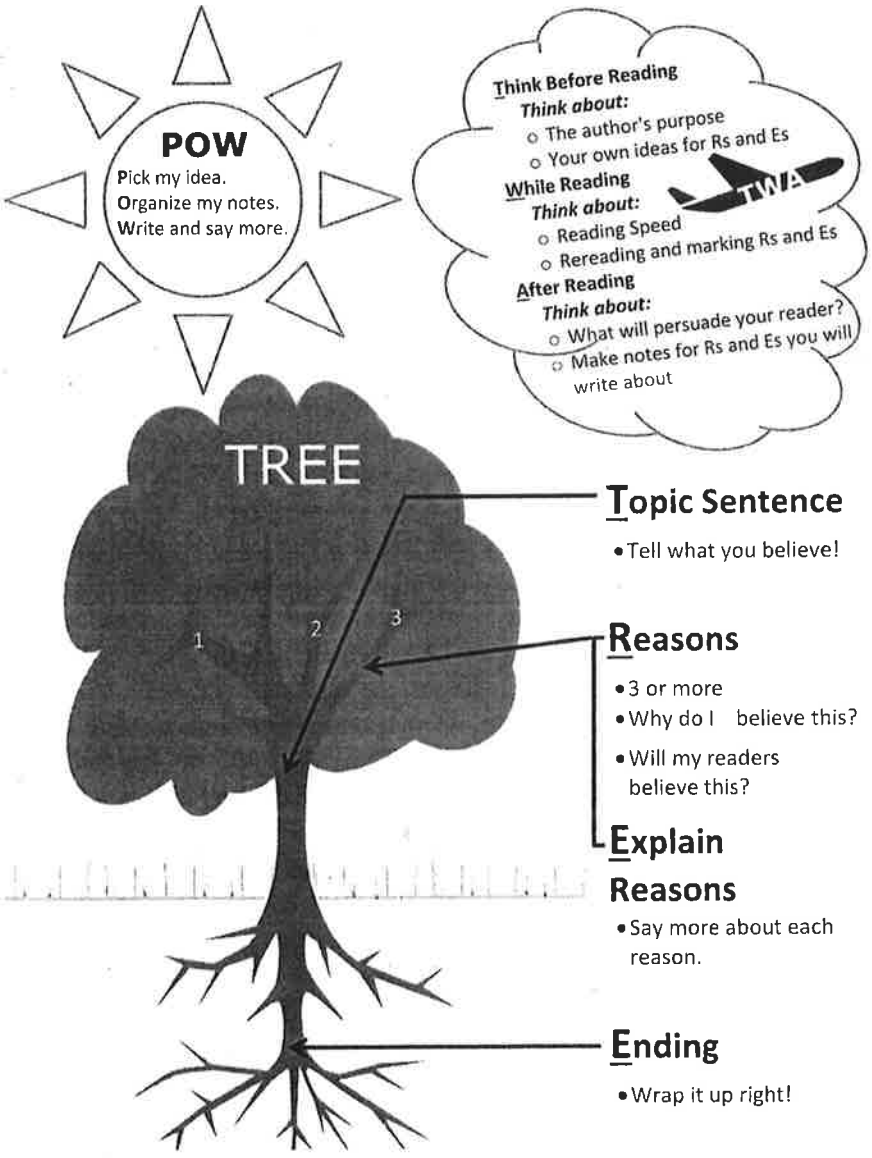

FIGURE 6.1 *TWA and POW + TREE Strategies*

Stage 3: Model It; Add TWA

The teacher now modeled again, using TWA for close reading of the source text in conjunction with POW+TREE. Two or more essays were written together, the teacher and students evaluated each essay for number of elements included, and graphed their score on the rockets as described previously. In addition,

students now also colored a star for each linking word used and for each element developed from the source text. Finally, students generated personal self-statements to use with the steps of TWA and wrote these down on their self-statements sheets.

Stages 4 & 5: Memorize It and Support It; TWA and Evaluate Pre-Test Performance

Students now evaluated and graphed their performance on the pretest they had taken. This activity was done in a positive, supportive manner to emphasize how much students had learned and how much their writing was improving (visual representations of progress promote motivation). While teachers can choose to skip this step if students may respond negatively, we believed these students would enjoy seeing the change, and they did.

Stage 6: Independent Performance; POW+TREE+TWA Together

As the teacher gradually released control to the students, each student reached independent performance and was ready for post testing. These students reached independent performance in approximately 18 to 23, 35-minute lessons. This is more lessons than typical for elementary students and SRSD; these students, however, learned more strategies than is typical as well. Avery's posttest, which follows, provides an illustration of the gains made in this relatively short period of instruction. Informational text was provided and the prompt was: Write an essay to your classmates persuading them that teamwork is a good idea. Avery independently read and marked up the source text, planned, and then wrote the following essay for his classmates:

> *Listen up! You should have teamwork. Teamwork is fun. One of my major reasons is teams are good for people. A team can help you meet new kids. Next, you can split chores at home or school. Each kid can do a chore. The strong kid can lift heavy trash bags. The smaller kid can clean under the beds. My third reason is you can make new friends on teams. That makes teamwork fun. Finally, people are working together. People can work together in sports, home, and school. That is why you should have team work so you can split up chores, work together, and make new friends. That is good for people.*

A posttest essay Taurean, whose pretest writing was shorter than Avery's but otherwise similar, wrote for his classmates further illustrates outcomes among these students:

> *Hey everybody! I think it is important to save the rainforest. My first reason is the rainforests are being cut down and the rainforests use to cover 14 % of the Earth and now it is only covering 6 % of the Earth. Another important reason is the rainforest is very important. We need water to drink from the rainforest and the rainforest gives us rain clouds. Last of all we need the rainforest for medicines. Scientists study plants in the rainforest for medicines, also some of the medicines help fight cancer. Now you know I think we should stop cutting down trees, it's important and we need medicines.*

In approximately 10 hours of instructional time over four-five weeks, these 9–10 year old struggling writers made remarkable gains and wrote impressive, beginning persuasive essays. They are, however, clearly not done learning and developing as persuasive writers. SRSD provides a beginning, rather than an end, as we have long argued (Harris & Graham, 1996). These students have a strong foundation upon which they and their teachers can build as they learn to revise, set new goals, write longer and more persuasive essays using more sophisticated persuasive writing strategies, read and analyze more complex text, use more than one source text, and refute opposing viewpoints (for these strategies, see Harris et al., 2008 and Mason et al., 2012). They are also ready to tackle new tricks for new genres.

Evidence Base for SRSD

Given the readily available reports of meta-analyses of SRSD (cf. Graham, Harris, & McKeown, 2013; Graham & Perin, 2007), as well as the chapter 2 by Graham and Harris in this book that addresses evidence-based practices in writing including SRSD, this section is brief. Over 100 studies of SRSD (including true-experiments, quasi-experiments, and single-subject design studies) have been conducted across grades 2 to 12 and with adults (Graham et al., 2013; MacArthur & Lembo, 2009). These studies provide convincing evidence that SRSD is an effective method for teaching writing strategies to students who represent the full range of writing ability in a typical class, as well as struggling writers and students with writing and other disabilities. As Harris, Graham, and Adkins (2015) explained, SRSD has been used effectively with whole classes, small groups, and individual students. As noted in the chapter by Graham and Harris in this book, meta-analyses have shown that SRSD achieves significantly higher effect sizes that other strategies instructional approaches in writing (for details on how SRSD differs from other strategies instruction approaches, see Zito et al., 2007).

SRSD for writing was deemed an evidence-based practice in the US Institute for Education Sciences Practice Guide: Teaching Elementary School Students to Be Effective Writers (June, 2012) and by a panel of independent researchers (Baker et al., 2009). SRSD received strong ratings from the US National Center on Intensive Interventions and was identified as having the strongest impact of any strategies instruction approach in writing in Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools, commissioned by the Carnegie Corporation (2007; cf. Graham & Perin, 2007). SRSD research has resulted in the development of writing strategies (with the assistance of teachers and their students) for multiple genres, including personal narratives, opinion and persuasive essays, report writing, expository essays, story writing, and state writing tests. SRSD research has also been conducted on the integration of reading and writing strategies to improve reading, writing, and learning (Harris, Graham, Chambers, & Houston, 2014; Mason, Reid, & Hagaman, 2012).

Graham et al. (2013) reported that SRSD has gone global. Studies have been or are being conducted in the United States, England, Portugal, Canada, Germany, Spain, Turkey, Egypt, Macao, and Belize. The SRSD for writing research base now includes students from first grade through college. It also involves a wide variety of students including typically developing writers, those with learning disabilities, struggling writers without an identified disability, incarcerated youth, and students with emotional behavioral difficulties, attention deficit disorders, Asperger's syndrome, and severe cognitive disabilities.

As Graham et al. (2013) concluded based meta-analysis of 29 true-and quasi-experimental studies of SRSD:

> SRSD writing instruction produced large effects for quality and elements for students in general (an ES above .80 is considered large). When all true- and quasi-experiments were considered together, the average weighted ES at posttest for quality and elements were 1.75, and 2.24, respectively. SRSD effects remained high for both of these constructs over time (maintenance probes ranged from 2 weeks to 28 months), as the ES for quality was 1.30 and 1.41 for elements. For posttest quality, seven studies examined generalization to different writing tasks (with five assessing generalization to a different genres), producing an ES of 1.00. Elements involved five such studies (four of which assessed generalization to a different genres), yielding an ES of 1.55. All average weighted ESs were statistically significant, and to put them in perspective, the largest ES for writing quality (that did not involve SRSD) in Graham and Perin's (2007) meta-analysis of writing intervention research was .82.

The findings from 53 single subject design studies supported and extended these results (Graham et al., 2013). Despite the number of studies that have been conducted, a great deal remains to be learned, as we address in the final section of this chapter.

Why SRSD Works, Fictions, and Future Research

It is evident that SRSD is a multi-component, multi-characteristic instructional approach; it was deliberately designed to address both complex learning and complex, diverse learners. Skilled writing is complex, requiring extensive self-regulation of an intricate process (cf. MacArthur, Graham, & Fitzgerald, 2016). In addition to basic skills, students must also develop understandings about the writing process, genre knowledge, and strategies for writing and self-regulating the writing process (Graham, 2006; Harris & Graham, 2009). Among skilled writers, writing is a flexible, goal-directed activity that is scaffolded by a rich knowledge of cognitive processes and strategies for planning, text production, and revision (Harris & Graham, 2009; MacArthur, Graham, & Harris, 2004). Skilled writers are sensitive to the functions their writing is intended to serve and use effective self-regulation strategies throughout the recursive writing process. Finally, skilled writers evidence topic knowledge, motivation, and persistence. Researchers agree that writing is a complex activity, and that learning to write is therefore potentially even more complex (Harris & Graham, 2016). Expertise in writing does not develop easily, and development needs to be explicitly supported for most students across the K-12 grades and into post-secondary employment or education as appropriate.

SRSD was deliberately developed in order to meet the varying, complex needs of diverse learners, as noted earlier. Thus, while not all students need all of the components, based on our experience all of the components are needed to support all learners. Each developing writer brings her/his own social-cultural background to writing and has personal affective, behavioral, and cognitive strengths and needs. Integrating evidence-based aspects of teaching and learning make SRSD complex, but also powerful. Theoretical and empirical integration continues to allow for development of a robust, versatile, and flexible model of strategies instruction. Explaining how and why multi-component interventions such as SRSD work, however, remains a challenge to be addressed.

Why Does SRSD Work?

The discussion of theoretical and empirical bases for SRSD and it characteristics, stages, and components provided here helps to understand why the approach, as a whole, has been so effective. Researchers (including us), however, want to know more. Important questions have been raised regarding whether or not some aspects of SRSD might be more important than others, and so on. Unfortunately, research to address such questions is challenging and expensive, and funding has rarely been available to address these questions.

We have found only one question that has been addressed by several studies. Graham et al. (2013) reported finding 5 studies that compare SRSD instruction with and without explicit instruction in self-regulation and yielded the statistics needed to compute an *ES* for quality at posttest (Brunstein & Glaser, 2011; Glaser & Brunstein, 2007; Graham & Harris, 1989; Graham, Harris, & Mason, 2005; Harris, Graham, & Mason, 2006; Sawyer et al., 1992). The added value of explicitly developing self-regulation strategies in the SRSD model was 0.48 standard deviations. This average weighted *ES* was statistically greater than no effect, with a confidence interval ranging from 0.04 to 0.92. Thus, it appears that explicitly developing self-regulation of the strategies students are taught, the writing process, and their writing behavior is important to the success of the SRSD model. We note, however, that these studies involved the multiple self-regulation strategies typical in SRSD, and do not address the independent contribution or sub-group contributions of these strategies.

Obviously, a great many questions remain to be addressed concerning how, with whom, and why SRSD for writing works. As we have noted, the answers may well reflect the need for multiple, interacting elements in any instructional model developed for use with diverse learners facing complex, challenging academic tasks. When teaching students with diverse strengths and needs to write, differing components may be more or less critical to an individual student. Thus, while all components may not be needed for each student, all components may be needed to reach diverse students effectively. While disintegrating SRSD may cease to be a fruitful enterprise at some point, there is much to be learned by further research into why, with whom, and how it works.

At this time, it is safe to say that teachers and others should understand and implement SRSD with fidelity in terms of the major characteristics, stages, and components. Based on our experience, we note that teachers sometimes do not see the point of the self-regulation components and are tempted to leave one or more of them out (particularly self-instructions). Research clearly shows that they do matter, however, and our interviews with students consistently indicate that the graphing and self-instructions are two of their favorite and most recommended components. Another issue we have experienced is that

some teachers stop instruction after the first 3 stages, omitting the scaffolded, collaborative writing in stage 5, and that when this happens, many students show little to no progress. We refer to this as P.E.E.ing in the classroom: Post; Explain, even model; and Expect. This lack of meaningful progress without continuing through the stages of SRSD has also been noted in a small number of studies (cf. Danoff et al., 1993). This issue clearly needs further study.

Other researchers will no doubt address questions we have not yet even identified. For example, Limpo and Alves (2014) recently reported that the more malleable students in SRSD instruction believed their writing abilities to be the greater the improvement in the quality of their written work. As SRSD includes elements aimed at developing attributions to strategy knowledge and effort, this makes sense, yet further research is needed.

Fictions, Misrepresentations, and Errors about SRSD

Fictions and misrepresentations. Given the long history of the development of SRSD, its continued refinement, and its complexity, it is not surprising that it is sometimes not well understood by those who have not had the opportunity to study it deeply. Fictions about SRSD presented as facts by those who do not know SRSD well or who misrepresent it, however, are concerning. Some examples are briefly addressed here. As Harris and Graham (2016) noted, prominent educators from radical constructivist perspectives, including versions of whole language and the process approach that disavow any "teaching" of writing, have described SRSD and other forms of strategies instruction as cold; teacher rather than student centered; uncaring; and aimed at creating "robotic," cookie cutter writers. Our description of SRSD instruction here and the examples of student outcomes have hopefully made it clear how uniformed and inaccurate this is. Further, we reject false dichotomies such as teacher versus student centered.

Some leaders in the field of composition studies have stated that SRSD and other strategies instruction approaches in writing are not based on deep study of composition, do not respect writing as a process, and lead teachers to treat students as "stagnant" objects rather than dynamic learners. Others claim that strategies instruction is scripted. Obviously, as can be seen in this book, each claim is fiction and these scholars have neither deeply studied nor seen effective strategies instruction in writing in action. A colleague who uses a different model of strategies instruction in writing (not SRSD) that has shown important, positive outcomes for English language learners and other students, recently received a review from a prominent journal in literacy declaring their approach to writing is "racist" in nature, stating that this approach is a "product of state and national policies that are driven by a lack of knowledge about bilingualism ... and a fundamentally racist perspective" (Personal Communication,

Reviewer 3, 2012) on the part of politicians and researchers regarding students who don't yet speak English in our schools. This viewpoint was endorsed in a cover letter signed by all three editors of the journal. Sadly, this example is only one of many; such claims are clearly uniformed, but can be damaging. Many of these claims are made by scholars who have not deeply studied teaching and learning across elementary and secondary grades and who have not worked in teaching writing to children. Regardless of the instructional approach being targeted for such ad hominem attacks and verterpitude, we believe that the writing community should stand together in rejecting them.

SRSD was "built" to be owned by both teachers and students. However, it is important that those involved in SRSD research and practice not misrepresent SRSD for writing and its classroom and research base. Here we briefly address examples of implications or statements about SRSD of concern (cf. Philippakos, MacArthur, & Coker, 2015). To indicate that SRSD does not integrate the use of genre knowledge for both planning and revising is incorrect. As can be seen in our earliest research as well as our books and articles for teachers, careful genre study has been integral to SRSD and the development of our planning, composing, and revising strategies. While we may not consider ourselves members of the groups that refer to their field as genre studies or composition studies, we have followed and learned from their work, and that of many others, for decades (Harris & Graham, 2016). As Graham (personal communication, 2015) noted, "that is where our planning, composing, and revising strategies come from." Further, we have integrated planning and revising strategies in our books for teachers, allowing students and teachers to keep a clear focus on genre knowledge and elements, as well as other aspects of planning and revising, throughout the writing process. As can be seen in the teacher learning materials in the e-chapter accompanying this chapter and our earlier discussions of SRSD in the classroom, students are deeply engaged in conversations and learning about writing, the writing process, and writing genres. This discourse, as can be seen in Table 6.2, is in part aimed at developing declarative, procedural, and conditional knowledge about each genre (knowing what to do in this genre; how to do it; and when, where, and why to do it, respectively). Further, students learn to carefully consider topic, audience, and purpose (we called this TAP at one time, it is now part of POW, as explained earlier) before writing and throughout the writing process. In addition, as can be seen in Table 6.2 and the e-chapter accompanying this chapter, students explicitly learn the genre and general writing based criteria their writing needs to meet, and set goals to do so. They then evaluate their performance and revise as needed.

It is also incorrect to indicate that SRSD has not focused on integrating reading and writing. Since the beginning, SRSD has involved reading before writing,

using both classroom reading materials and student writing level models. We have also incorporated critique of both strong and weak texts, which can then be rewritten if desired, as part of instruction (see professional learning lesson plans for teaching 7 and 8 year olds to write opinion essays, for example, at http://kc.vanderbilt.edu/projectwrite). As can be seen in this chapter and the accompanying e-chapter, in existing books for teachers, and in a body of research being conducted by multiple researchers, SRSD for integrating reading and writing to learn has also been addressed for some time (cf. Mason, Reid, & Hagaman, 2012). Further, in both our and others' research and books for teachers the roles that peers can play in planning, composing, editing, and revising have been explored and multiple implications for teaching discussed (cf. Cramer & Mason, 2015; Graham & Harris, 2005; Harris & Graham, 1996; Harris, Graham, Mason, & Friedlander, 2008; MacArthur, Schwartz, & Graham, 1991; Mason, Reid, & Hagaman, 2012; Reid, Lienemannm, & Hagaman, 2013). The many roles of students in the evaluation of their own and peers' writing, and of SRSD instruction, were discussed in our earliest book (Harris & Graham, 1996) and in each later book. This is also true of guidance in bringing together strategies for planning, composing, revising, and editing, as well as how to teach across genres. Deep understanding of the classroom and research literature on SRSD requires a great deal of careful study.

Future Research

Scaling up. Despite the amount of research attention that SRSD has received, it is not widely applied in schools (in fact little time is devoted to teaching writing strategies to students, see Graham and Harris, this book). SRSD appears to be a good candidate for scaling up, both in terms of practice and research. However, the success of such efforts is likely to depend upon the methods used to facilitate the broader use of this instructional procedure. Several studies have demonstrated strong success using a practice-based professional development model to help teachers learn to apply SRSD in their classroom (cf. Festas et al., 2015; Harris et al., 2012; Harris, Graham, & Adkins, 2015; Harris, Lane, Driscoll, et al., 2012; Harris, Lane, Graham, et al., 2012; McKeown et al., 2016; Torgerson et al., 2014), but much more research is needed. The costs and benefits of this approach to professional development for SRSD and the effectiveness of other approaches need to developed and assessed. Further, much more research is needed on how teacher characteristics affect professional development for SRSD, including teachers' efficacy for teaching and their efficacy for teaching writing. Initial research indicates these, and other, teacher characteristics are important to understand (Brindle et al., 2016; McKeown et al., 2016). As we have argued frequently, SRSD is neither a complete writing program nor a

panacea. Further, it does not address aspects of writing such as handwriting, keyboarding, spelling, and grammar. Interested readers can see the work and outcomes of two non-profit organizations currently committed to scaling up SRSD as part of the larger literacy program: www.thinkSRSD.com and https://srsdonline.org/.

Paradigm barriers to SRSD. Perhaps one of the most substantial barriers to scaling up SRSD, and to future research in SRSD, is the previously noted view that SRSD is the anti-thesis to constructivism and constructivist approaches to teaching and learning or similar paradigms (cf. Harris & Alexander, 1998; Harris & Pressley; 1991; Harris & Graham, 2016, 1994). Hopefully, it is clear in this chapter that SRSD is congruent with all major principles of constructivism and active learning, and embraces this and similar theories. We often hear that learning to read and write should be parallel to how we learn to speak—and that learning to speak is a natural process rather than an instructed, scaffolded process. Harris, however, has noted that anyone who has had or loved a baby has observed how everyone around that baby contributes to learning to speak and language development. Even total strangers will make noises for babies to hear and imitate, prompt babies to copy words, and so on; adults and peers interact with babies and young children in hundreds of ways from birth through early childhood to help support learning to speak and language development. There is perhaps no more explicitly scaffolded and supported learning experience for most of us in our lives.

Additional issues in SRSD research. A substantial body of research has accumulated since the first SRSD study in the 1980s (Harris & Graham, 1985), yet much remains to be investigated. For example, new strategies for planning, drafting, and revising need to be developed and tested that cover a broader range of tasks across and within genres. Very little SRSD research has taken place with young children (ages 5–6) or high school students and adults. The number of studies conducted with students with specific needs or characteristics (e.g., LD, EBD, ADHD, Asperger's Syndrome, high achieving students, typical students, and so on) is modest, and additional replication and extension with a variety of populations is needed.

No research has addressed the effects of SRSD writing instruction over an extended period of time. Such research is badly needed. Further, because SRSD is not a complete writing program and is meant to be part of a larger writing program, it is important to test its effectiveness when it is integrated into comprehensive writing programs. For example, while research indicates that SRSD produces stronger writing outcomes than whole language or writers' workshop approaches (cf. Graham, Harris, & Mason, 2005; Graham & Perin, 2007), we have long argued that SRSD should not supplant many important

features of writers' workshop, but rather be integrated with these features (Harris & Graham, 1994, 1996; Harris et al., 2008; Harris & Pressley, 1991). The process approach to writing does have an evidence base, although effect sizes are not as large as those for SRSD (Graham & Perin, 2007). Important elements of writers' workshop/the writing process approach include the focus on writing as a process, creating a supportive writing environment, time to think about writing, time to write, and meaningful purposes for writing (Harris et al., 2009).

With the advent of new electronic learning systems (such as intelligent tutors and web-based instruction), there is a need to develop and test SRSD interventions delivered through such formats. Further, more research is needed regarding integrating reading and writing strategies to enhance reading, writing, and learning (cf. Harris & Graham, 2014; Mason et al., 2012, as well as the chapters by Mason and by Foxworth & Mason in this book). In addition, while a small number of studies indicate that SRSD can also be effective in reading and math, more research is needed in these and other academic learning domains.

Finally, unlike the fields of reading and math, there is very little developmental research in writing (Fitzgerald & Shanahan, 2000). Because writing has become an area of concern, we may see funding for this type of research expand. Among the questions to be addressed are what students understand about the act of writing and its various forms; the typical development of text transcription and sentence construction skills; students' development of views about writing, its value, and their capabilities as writers; how strategies students apply when writing develop independently and with instruction over time; and the characteristics of their written products with development. Moreover, we need to know more about how the difficulties students experience with writing manifest themselves. A meaningful body of research on the development of writing would be very useful in further informing research on writing, including SRSD research. We look forward to continuing to follow the rapidly developing field of writing research.

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