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The Self-Regulated Strategy Development Instructional Model: Efficacious Theoretical Integration, Scaling Up, Challenges, and Future Research

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Abstract

In this article, I provide the first publication thoroughly detailing how the theoretical foundation for the self-regulated strategy development (SRSD) instructional model was developed. I explain the development of the theoretical base for the SRSD model of instruction and the initial focus on writing instruction. I detail the reasoning and research that provided the base for the theory underlying the SRSD model of instruction. The theoretical base relies, in part, on both theoretical integration and triangulation; I define and provide examples of each process. I address the role of multiple theories, early studies, and iterations that led to the current SRSD instructional model. The tenets of the theoretical base, theoretical principle, and four initial and foundational research questions for the SRSD instructional model are detailed. Research regarding the four initial research questions is summarized, demonstrating the tenets and theoretical principle behind the SRSD model of instruction are valid and meaningful. A sizeable body of research across multiple countries indicates moderate to large effect sizes across many outcomes of SRSD instruction in writing and other complex learning areas. Finally, I address both directions for future research and significant challenges in scaling up SRSD instruction, including paradigm wars and other barriers.

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This article is part of a Topical Collection focused on developing knowledge and skill regarding theory development, particularly among early career scholars, consequently increasing and enhancing theory development in educational psychology. Wentzel (2021) and Greene (2022) provided insightful articles regarding theory development and its history and future in educational psychology. Wentzel articulated the need for achieving greater parsimony across theoretical frameworks. Greene also noted "the often-unchecked proliferation of multiple seemingly similar theories about the same phenomena" (p. 3012). Development of the self-regulated strategy development (SRSD) model of instruction addressed similarities across theories beginning in the late 1970s and continues to do so today (Harris, 1982). SRSD theoretical work, moreover, integrates theories across multiple fields (e.g., special education, curriculum and instruction, educational psychology, psychology, behavioral theory, and family systems).

First, I provide context for this article and the development of SRSD. While I focus on the current state of writing instruction in the USA, as space does not allow wider coverage, these issues exist across many countries (Graham, 2019; Graham & Rijlaarsdam, 2016). Next, I provide a brief overview of SRSD instruction (a detailed description comes later). Then, I trace the development of SRSD theory and research.

Status of, and SRSD for, Writing Instruction

Although reading instruction receives far more attention, there are significant problems in writing instruction, and thus students' writing development, across many countries (Graham, 2019; Graham & Rijlaarsdam, 2016). Both writing and reading are essential to learning, development, and functioning in today's world. Writing is a critical tool for learning and improving reading, as well as self-expression, identity formation, communicating, self-advocacy, reasoning, continuing education, social and political engagement, and equity (Graham, 2019; McKeown et al., 2019a; Kiuhara et al., 2024). Further, the National Association of Colleges and Employers found that nearly 80% of employers want candidates with strong written communication skills (National Association of Colleges and Employers, 2019).

Skilled writing is a complex, problem-solving process that develops over time. Competent writing requires meeting multiple demands (e.g., evaluation of the writing task; goal-directed problem-solving; command of skills and strategies; flexible, self-regulated use of the writing process). These demands require effective self-regulation of this intricate and challenging process (Boscolo & Mason, 2001; Harris et al., 2009, 2018; Zimmerman & Reisemberg, 1997). As the saying often attributed to Nathaniel Hawthorne goes, "Easy reading is damn hard writing."

Teaching writing requires a deep knowledge of what writing requires and the ability to teach and support writing development. The majority of elementary and secondary teachers, however, feel poorly prepared to teach writing and receive little to no preservice or inservice professional development (PD) in writing (McKeown et al., 2019b; Ray et al., 2023). Elementary teachers also report: (a) low self-efficacy for writing and teaching writing, (b) low priority for writing instruction, and

(c) little use of evidence-based practices (Brindle et al., 2016; Gillespie Rouse & Kiuhara, 2017). Secondary content area teachers, and some English Language Arts (ELA) teachers, are also poorly prepared to teach writing (Graham et al., 2023).

The National Assessment of Educational Progress (NAEP) defines proficient writers as those who clearly demonstrate the ability to accomplish the communicative purpose of their writing; they demonstrate solid academic performance for their grade level (National Center for Education Statistics, 2012). The most recent NAEP writing test (Harris, 2024; National Center for Education Statistics, 2012) illustrates how poorly students' needs have been met. Writing performance has remained stagnant and alarmingly low for the majority of students for decades (Harris, 2024). On the 2012 NAEP for writing, 74% of eighth graders and 73% of twelfth graders scored at or below basic (4th graders were not assessed). As the basic level indicates only partial mastery of prerequisite knowledge and skills for writing, this is deeply disturbing. Further, 20% and 21% of eight- and twelfth-graders, respectively, were unable to perform at even the minimum standards for their grade level. Only 10% of Black students and 13% of Hispanic students scored at the proficient level; even fewer students with disabilities and those learning to speak English scored at this level.

The last NAEP assessment of writing that included 4th graders reported that 72% of 4th graders scored at or below basic (National Center for Education Statistics, 2003). At 4th grade, 86%, 83%, and 67% of Black, Hispanic, and White students scored at or below basic, respectively. Students eligible for free or reduced lunch scored lower than students who were not eligible. In terms of narrative writing on the NAEP assessment, only 18% of 4th grade students received scores of "skillful" on a six-point scale, and only 4% received a score of "excellent."

The poor writing performance of the majority of students in the USA is systemic and deeply concerning, yet alarm bells are rarely heard. Why? The false belief that once a student can read they will be able to write, or at least learn to write easily, persists. Further, there is little recognition of how much learning to write contributes to learning to read (and vice-versa) and to learning in the content areas, and writing instruction is often seen as less important than reading instruction (Harris, 2024; Harris & McKeown, 2022).

Brief Overview of SRSD Instruction

SRSD is an instructional approach designed to support complex learning in grades 1–12 based on integrating effective instructional practices across multiple theories. In writing, SRSD supports students in learning, using, adapting, and maintaining powerful general and genre-specific writing strategies. Students learn to self-regulate the writing process and the multiple demands of writing (e.g., affective, behavioral, and cognitive) using goal setting, self-instructions, self-monitoring of progress, and self-reinforcement. Collaborations and discourse among teachers and students, and small groups or pairs, are critical.

Development of vocabulary and academic knowledge needed for writing, social-emotional goals, motivation, self-efficacy for writing, positive attitudes and beliefs about writing, and more, are also part of SRSD. Across six flexible and recursive stages of instruction, students develop background knowledge needed for writing, participate in collaborative teacher modeling, evaluate model texts and poor texts, and receive individualized instruction and scaffolding until they are independently using all they have learned (a detailed description follows later in this article).

Next, I explain how the theoretical base for SRSD developed over time. I summarize how my "life space" helped form my commitment to creating more effective instruction and improved learning for all students, especially those marginalized in society, and led to the theoretical base for the SRSD model of instruction.

Early Experiences Leading to Recognizing the Need for More Powerful Instruction

The theoretical base behind the SRSD model of instruction did not begin typically, with either description or explanation (Greene, 2022), although both are valued in refining the SRSD instructional model. My development of a theory for instruction began, rather, with an identified need and set of goals to address this need. For this to make sense, and to be useful to others, I will "begin at the beginning" of the journey that led to SRSD today.

Inspiration and Life Space

Inspiration for creating the theoretical base for SRSD developed due to multiple, powerful factors in my "life space;" this construct has been a major force in my development as a teacher and researcher for 50 years. This construct emerged from Kurt Lewin's work in Gestalt psychology/Field Theory in the 1930s–1940s (Lewin, 1939).

An individual's life space, somewhat simplified, is the combination of *all* factors that develop, interact, and influence a person's behavior at any time and over time. All aspects of the environment that influence a student or adult (e.g., culture, community, educational environments, family, friends, physical environments and objects, and social relationships) interact with an individual's experiences, perspectives, needs, beliefs, values, abilities, personality, goals, motivations, and more (Lewin, 1939). This interaction across contextual variables bears similarities to Bronfenbrenner's ecological systems theory (Bronfenbrenner & Morris, 2006), as well as Vygotsky's (1962, 1978) view of human development as a complex process that must be framed within social, cultural, contextual, and historical contexts.

Multiple Civil Rights Movements and Tutoring in an Inner City

My family moved frequently, and I attended a progressive high school outside of Chicago (see Bembenutty, 2022). Here I began to understand much more about

our country and the world. I was introduced to influential books by authors such as James Baldwin, Joseph Heller, Sylvia Plath, and J. D. Salinger. At this time, the Civil Rights Movement to abolish racial segregation was accompanied by movements for the rights of women, individuals who were not heterosexual, and those with disabilities.

My best friend and I joined a high school tutoring group for elementary school children in inner-city Chicago. The two little girls we tutored lived in an impoverished area. Both were White; many of the families came from the Appalachian mining country. My student's parents invited me to their home; they worried for her future. My high school classes helped me understand how deep, chronic poverty affected families; now I was seeing it firsthand (Berliner, 2006; Lamy, 2013). Progress was difficult for our girls. I struggled with how our society could leave children and families in need with so little assistance (Harris, 2018). I decided to become a special education teacher based in part on this tutoring experience.

Undergraduate Degrees and Experiences Teaching

The first in my family to go to college, in 1971, I majored in education of the d/Deaf (the capital D indicates those immersed in Deaf culture and community) and hard of hearing. United States Public Law 94–142, guaranteeing a free, appropriate public education to every child with a disability, had not yet passed. Jobs in special education were scarce, so I completed a second degree in elementary education. When I graduated from college in 1974, mandated public-school services for students with learning disabilities (LD), emotional and behavioral disorders (EBD), and other disabilities did not yet exist.

Jobs were scarce in education of the d/Deaf and most were still residential. I chose a job teaching 4th grade in a coal mining town in an Appalachian area of West Virginia, near where our tutees were from. My class included about 25 Black or White mineworkers' children. I learned more about the challenges created by poverty and discrimination. Reading levels in my classroom ranged from primer/1st grade to 6th grade, larger than the usual 3–5-year range in classrooms (Woolfolk et al., 2012). I was working hard to differentiate, create peer-learning experiences, and fit in small group instruction. My students were not on board.

I discussed with my students what a day in our class was like, and asked what they would like our classroom to be like. I had not yet learned about behavioral approaches for developing positive social and academic behaviors. Yet, we created a "Bank of Life." Students could earn a point for every time they helped someone in or outside of class, and spend them on small items or activities (some preferred to save their bank books). The change was remarkable. We jelled and worked hard that year. At the end of the year, however, I was frustrated by how little I had been able to do to help my students who were significantly behind grade level.

This first teaching experience strengthened my resolve to help change the possible futures of children experiencing oppression in any form(s): poverty, racism, classism, genderism, sexism, and segregation of and discrimination against those with disabilities. I believed then, and believe now, that one powerful factor in achieving

social justice and equity is improving learning, opportunities, and access for all students, and especially for those marginalized and living in poverty (Bembenutty, 2022; Good, 2024; Harris, 2018). I had to move, and in 1975 began teaching in a special education program in Nebraska. I taught 13 to 21 years old with moderate cognitive disabilities, often in tandem with behavioral challenges. I learned more about teaching and again faced the frustration of not being able to do enough for my students.

Master's Degree in Educational Psychology

While teaching, I received a master's degree at the University of Nebraska-Lincoln in Educational Psychology, focusing on statistics and child learning and development. I dived further into theories of learning, teaching, behavior, and development. Each theory opened new avenues of understanding and thinking about teaching and learning; I became a theory "enthusiast." My coursework in statistics and measurement laid a solid foundation for future research. I did an intervention study for my thesis, involving "cognitive modification" for severely shy children (Harris-Garrison, 1980; Harris-Garrison & Brown, 1982). I developed a burning interest in integrating aspects of effective instruction across theories, regardless of whether some saw these theories as discordant. How to meet such a goal was not clear.

Next, I describe how the theoretical base and model of instruction for SRSD have evolved since the early 1980s. Then, I summarize the evidence base for SRSD instruction in writing, reading, and in reading to learn and writing to inform or persuade. I illustrate how SRSD instruction is now being used in other instructional areas, such as mathematics. Research on PD for SRSD writing instruction is summarized. Future research needs, paradigm wars in writing, and other barriers to scaling up SRSD are identified.

Development of a Theoretical Base for SRSD

I began my doctoral degree at Auburn University in 1981. I majored in Learning Disabilities in the Special Education program and obtained a teaching assistantship in the Foundations of Education department at Auburn. I taught four sections a quarter of the undergraduate Introduction to Educational Psychology course for 3 years.

Doctoral Degree in Special Education and Assistantship in Educational Psychology

While at Auburn University, the pieces of "how" all that has been learned from differing theories of teaching and learning, and how they could be combined, slowly began to come together. I studied theories and research across psychology, human communication, educational psychology, special education, general education, and

teaching and learning. Where to try this approach was not yet decided. Here, I touch on initial impactful theories, and early work to integrate them.

Early Beginnings During My Doctoral Work

I read Donald Meichenbaum's book, *Cognitive-Behavior Modification: An Integrated Approach* (1977). He was the first scholar I found who shared my view regarding integrating effective practices from research across theories. His work led me to others with similar views (Harris, 1982). Meichenbaum provided a well-thought-out approach to integrating across affective, behavioral, cognitive, and social theories and approaches to help children achieve goals in learning, behavior, and social/emotional development (Wong et al., 1991). He based his approach on multiple theories and articulated an instructional model, cognitive-behavior modification (CBM), for teaching and developing academic and socio-emotional abilities.

Some educational researchers may not be not familiar with Meichenbaum's work. His model, however, predated concepts that thrived in future years and remain important today. For example, researchers today see engagement as critical to learning, and as a multi-dimensional construct with emotional, cognitive, and behavioral components (Middleton et al., 2017). Meichenbaum endorsed this perspective on engagement early on, in his 1977 book.

A number of principles from Meichenbaum's (1977) CBM approach were incorporated into the earliest version of SRSD: (1) emphasis on interactive learning between teacher and student; (2) responsibility for recruiting, applying, and monitoring performance gradually becoming the responsibility of the student, (3) use of sound instructional procedures including initial teacher direction and modeling, feedback, reinforcement, and individualization, (4) student as an active collaborator with teacher and peers, and (5) modeling and development of self-statements designed to assist the student in comprehending the task, producing appropriate strategies, and using these strategies and verbalizations to direct behavior (Harris 1982; Harris & Graham, 1985). CBM emphasizes the interactive, reciprocal nature of cognitions, feelings, and behaviors, and the interaction of context, culture, and social aspects with learning and development. I also believed these interactions to be important.

I found Dubin's (1978) book, *Theory Building*, in a used book store. He supported thinking beyond single theories and encouraged researchers to "give up constraining commitments to theories, methods, and apparatus" (p. 276), replaced by "willingness to ask open questions unhampered by the prior constraints of a particular view or method" (p. 278). I believed that when researchers treat competing viewpoints with thoughtfulness and respect, a powerful repertoire for teaching and learning could be developed; Dubin strengthened this belief (Harris, 2018). This does not negate important contributions made by differing theories, including evolving and future theories, and the importance of these theories in continuing to advance powerful integration (Alexander & Harris, 1998; Harris et al., 2003). I also continued studying Vygotsky, Luria, and colleagues' translated works (e.g., Vygotsky, 1962, 1978; Luria, 1959; Wertsch, 1979). These works deeply influenced my thinking

related to instruction in the roles of self-speech, self-regulation, social origins of self-control, learning, development of the mind, and more.

Tenets of SRSD Theory Development

Several tenets became foundational to my thinking, and to what I refer to as theoretical integration and triangulation, and thus to SRSD. First, there was not a theory that I could not learn from to enhance my understandings, teaching, and research. Next, all students, and especially students who are marginalized by poverty, race, disability, or other factors, need a more effective model of instruction than any single theory offered. Third, theoretical triangulation was possible and important, and finally, theories offered differing, although often overlapping, insights and approaches to teaching and learning.

Sketching Out the Theory and Framework Behind the SRSD Model of Instruction

When I graduated in 1981, I was beginning to sketch out the theory and framework for what became SRSD instruction. My dissertation was an early step in testing out CBM instruction for developing private speech and task performance during problem-solving among young children with LD and their peers (Harris, 1986). Distinguished researchers Barbara Keogh and Bernice Wong joined me in co-editing a special issue of *Journal of Abnormal Child Development* on CBM (Harris et al., 1985). I contributed an article focused on conceptual, methodological, and instructional issues in formative assessment (Harris, 1985), which remains key to SRSD instruction. After completing my doctorate, I began detailing, revising, and refining an initial model of instruction that would help students progress in complex, challenging areas of learning. I was developing an instructional model for complex learning, not writing. Early on, I was thinking about math, but that changed.

Focus on Writing

At Auburn University, I met Steve Graham, then a Visiting Assistant Professor, and we married in 1982. Serendipity has played a role many times in my life (Bembenutty, 2022). Three important decisions were made: we would join forces by combining our areas of expertise (Steve was deeply studying the skills and processes involved in writing and genre-based instruction), we would focus on students with LD, and we would focus on writing instruction. Research showed students with LD frequently were considerably below grade level in writing (Graham et al., 1987; Harris et al., 2003). Work on the development of SRSD instruction in writing, therefore, began based on the characteristics, strengths, and needs of students with LD engaging in complex learning.

Overall, the writing of students with LD is often less polished, expansive, coherent, and effective than that of students without LD (Harris et al., 2003). Challenges

include aspects of cognition, metacognition, and self-regulation; affective responses related to attitudes, beliefs, and emotions about writing; and lack of knowledge about and skills for writing (Harris, 2021a; Harris & Graham, 1985, 1988, 2013). Thus, the intervention framework needed to address these and other challenges. Later, I learned that addressing these issues in instruction improved writing performance for most students (Danoff et al., 1993; Graham et al., 2013).

Steve introduced me to work in rhetoric, composition studies, genre theory, and genre studies in writing (e.g., Bazerman, 2007). Researchers in these areas primarily address college students, focusing on how to teach composing and writing, how students learn to write effectively, and the role of understanding genre and rhetoric. Continued study of these areas has been integral to SRSD.

I have been responsible for further development and refinement of SRSD and research on practice-based professional development (PBPD) for SRSD instruction in writing (e.g., Harris et al., 2012; Harris et al., 2023a). Steve has collaborated with me and others in developing critical writing strategies. He has led the development and scoring of assessments for students and teachers (e.g., pretests; intermediary tests; posttests; generalization; maintenance; self-efficacy for, and attitudes about, writing) in our studies (e.g., Graham & Harris, 2009).

First Publication Arguing for Theoretical Integration and Triangulation

In 1982, my first attempt to put in writing the major principles and research I was working on integrating was published (Harris, 1982). A copy of this 1982 paper is included in the Supplemental Material for this article. All references in this section can also be found in a free download of the 1982 article, as space precludes including them in the reference list, at https://journals.ku.edu/focusXchild/article/view/7449. That article is described here due to its importance to the foundations and future of the SRSD model of instruction. In that article, I traced the historical development of, and some major contributors to, the CBM perspective (Meichenbaum, 1977). Research on CBM-based interventions was reviewed, including social, emotional, and academic interventions. Multiple researchers were arguing for integration across theories at that time, noting that no single theory alone was sufficient (Craighead et al., 1978; Mahoney, 1977a). Kendall and Hollon (1979) argued that a purposeful, integrated intervention approach such as CBM should prove superior when children face significant difficulties. They noted that increasing evidence supported this view, but more research was needed. Furthermore, CBM emphasizes the active role children play in their own development and learning. Needs are addressed, as they are critical to moving forward, but the focus is on important knowledge, skills, and behaviors; developmental capabilities; and ultimately placing the child in control (McKinney & Haskins, 1980; O'Leary, 1980).

I reviewed research from multiple theories or perspectives by a large number of researchers that could be powerful in creating a multicomponent, multi-characteristic CBM-type instructional approach (Harris, 1982). These included traditional and evolving behavioral theory, cognitive psychology, developmental theory, social

learning theory, developmental psychology, instructional theory, and Vygotsky's views on culture and language. The important roles of self-talk/self-instruction/self-speech, self-instructional training (a CBM approach, Meichenbaum, 1977), modeling, and individualization were explored. Aspects of effective instruction accepted or emerging at that time were addressed: time on task/engagement; meaningful processing; demonstrate-prompt-practice techniques; task, learner and contextual analyses; cognitive and social problem-solving; and achieving maintenance and generalization of learning (Harris, 1982). Many powerful approaches to maintenance and generalization came from behavioral researchers (e.g., Baer, 1981; Stokes & Baer, 1977) and are part of SRSD (Harris, 1982; Harris & Graham, 2018)).

By the early 1970s, multiple authors and researchers were expanding behavioral theory to include cognition (Harris, 1982). Calling it a "behavioristic excursion into the lion's den," Kanfer and Karoly (1972) developed a model of self-regulation that included self-monitoring, self-evaluation, and self-reinforcement. Soon after, behavioral researchers O'Leary and Dubey (1979) and Rosenbaum and Drabman (1979) identified four powerful evidence-based self-regulation procedures: self-instruction, goal setting, self-assessment, and self-reinforcement. Development of these self-regulation abilities, supported across theories, is part of SRSD instruction, and has proven to be important to the effect sizes obtained in SRSD research (Harris & Graham, 2018).

Finally, I identified research areas that could be integrated with future interventions (Harris, 1982). These included research and practice on metacognition; information processing; cognitive assessment; peer and small group instruction; attribution theory; perception, attention, and memory; expectancy formation; and more. I considered how interventions could be developed and designed for diverse learners, and noted caveats such as demands on teachers. The development of the current SRSD model of instruction took place over a number of years. Multiple iterations were needed to develop SRSD as it is known today, as shared next.

Iterations and Development of the SRSD Model of Instruction

Initial Foundations for What Became the SRSD Model of Instruction

Four sources were critical to the foundation of my initial model of strategies instruction in the early 1980s (Harris, 1982, 1986): (1) Meichenbaum's (1977) CBM model; (2) the work of Soviet theorists and researchers on the social origins of self-control, the development of the mind, and the zone of proximal development (ZPD) contributed further to the self-regulation, scaffolding, and modeling components of the instructional model (Vygotsky, 1962; Wertsch, 1979); (3) the work of Brown, Campione, and colleagues on development of self-control, informed instruction, metacognition, and strategies instruction (Brown et al., 1981), and (4) the work of Deshler, Schumaker, and their colleagues on strategies instruction among adolescents with LD (Schumaker et al., 1982.)

Research and Theory Impacting Iterations of the Model of Instruction

Publications regarding development of SRSD and research outcomes since 1982 are available for those interested (see publications with an astersisk (*) in the reference list). Across these manuscripts, the importance of additional theories and related research, as well as new research emanating from theories noted earlier, that have helped in refining SRSD since publication of my early paper (Harris, 1982) are noted. These include, for example, sociocultural and sociocognitive theories (Prior, 2006; Zimmerman & Reisemberg, 1997), culturally responsive pedagogy (Carter & Darling-Hammond, 2016), and discourse (Blank, 2002). Next, I note selected researchers who deeply impacted the SRSD instructional model.

Zimmerman and Risemberg (1997) reviewed models of writing and concluded that "explanations focusing on writing performance and its self-regulated development need to include the role of social, motivational, and behavioral processes as well as cognitive ones" (p. 75). Their model of writing included three fundamental forms of self-regulation: environmental, behavioral, and covert or personal. These insights were important to my initial development and refinement of the evolving SRSD instructional model, and continue to influence SRSD today (e.g., Zimmerman & Schunk, 2011).

Self-regulation is a critical component of SRSD instruction. The constructs of self-regulation, metacognition, and executive function overlap a good deal, although each provides unique perspectives (Zimmerman & Schunk, 1989, 2011). As McCormick (2003) noted, differing approaches to the concept of active control of cognition developed from different theoretical bases, assumptions, and methodologies. Over time, however, I believe that these approaches to understanding control of cognition have informed and impacted each other, making the distinctions among them less manifest.

SRSD instruction has been depicted from each of these theoretical perspectives. The self-regulation perspective is seen in Graham et al., 2018, Harris et al., 2011, and Harris & Graham, 2013, for example, in the four forms of self-regulation noted previously that students learn to use in SRSD instruction. Further, development and management of self-regulation of the writing process is part of SRSD as well. Self-regulation of affective, behavioral, and cognitive aspects of writing are all important and addressed in SRSD instruction (cf. Efklides & Schwartz, 2024).

Metacognition and SRSD are addressed in Harris and colleagues (2009, 2010). Metacognition addresses knowledge about cognition and awareness of one's own cognition; one example of the influence of research on metacognition on SRSD is the focus on developing students' declarative, procedural, and conditional knowledge related to writing and strategy use. Further, as noted earlier, social, motivational, and behavioral factors are also seen as critical to developing self-regulation.

Executive function as related to SRSD is examined in Harris and colleagues (2018). Executive function impacted SRSD, for example, due to the focus on conscious, purposeful, and thoughtful activation, management, and use of strategies, knowledge, and motivational state in achieving a goal. SRSD instruction supports the development of executive function processes that are critically important for

skilled writing, including analysis, decision-making and planning, attention control, and coordination and flexible application of these processes.

Pressley and colleagues' research on good strategy users (Harris & Pressley, 1991, 1994; Pressley & Harris, 1990, 2006; Pressley et al., 1987a,b, 1992) and transactional strategy instruction for reading comprehension (Pressley et al., 1992, 1994) impacted early iterations of SRSD. Mike Pressley and I became collaborators on numerous papers related to knowledge construction, constructivism, and strategies instruction (see reference list).

Theory and research focused on effective teaching and effective classrooms were and remain critical to the initial and evolving components and characteristics of SRSD instruction. This has included early and continuing research on teacher behavior, features of good teaching, and effective classrooms (e.g., Brophy, 1999, 2001; Gage, 1984; Good, 2024; Rosenshine, 1970, 2012), as well as APA's top 20 principles from psychology for teaching and learning across the grades (American Psychological Association, 2015). These lines of research, and Pressley's research on effective schools, classrooms, and teachers (e.g., Mohan et al., 2008, Pressley et al., 2003), have been instrumental in conceiving effective context for, and teacher actions in, SRSD instruction, and PD for SRSD (Harris et al., 2003; McKeown et al., 2019b).

Finally, Alexander's (1997) early model of domain learning (see also Alexander & Murphy, 2024) and the incremental movement of learners from initial learning to a state of competence, and potentially to expertise, have helped us understand aspects of how and why SRSD instruction is effective, although more research is needed (Wijekumar et al., 2019). Graham and Harris (2018a) analyzed the design principles involved in SRSD instruction, noting the impact of Alexander's model, and in PBPD for SRSD, within the context of Graham's (2018) Writer(s) Within Community model of writing development. Graham and Harris highlighted the interconnectivity among instructional elements and teacher and student actions due to the multiple purposes of elements of instruction and related these findings to research on PBPD for SRSD as well. Graham and Harris (2018a) help provide clarity on how SRSD instruction can meet multiple goals for diverse students. My first paper on integrating across theories, detailed earlier (Harris, 1982), and the work of others noted here resulted in the formation of a theoretical principle for SRSD, as described next.

The Theoretical Principle for the SRSD Model of Instruction

Theory in educational research typically seeks to help researchers understand, explain, and predict phenomena (Dubin, 1978). The theoretical base for the SRSD model of instruction required a core principle. The core theoretical principle behind the SRSD model of instruction emerged as I worked on my early paper (Harris, 1982): *Integrating instructional practices across existing theories with strong evidence bases, combined with identifying where theoretical triangulation occurs (teacher and student actions are highly similar/identical although described with*

different terms across two or more theories), will create a model of instruction that will maximize impacts on multiple critical outcomes in learning and development.

The importance of a model that would be responsive to aspects of individual differences among learners and directly address "affective, behavioral, cognitive, and social and ecological processes of change and outcomes" (Harris & Graham, 1992, p. 284) was clear to me. Further, as Harris et al. (2003) argued:

> Coherent, integrated instruction is based in learning communities that are educationally purposeful, open, just, disciplined, 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 affective and behavioral strengths, needs and characteristics…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. (p. 4–5)

In writing, the initial goals of SRSD instruction were the following: "(a) assist students in developing knowledge about writing and powerful skills and strategies involved in the writing process, including planning, writing, revising, and editing, (b) support students in the ongoing development of the abilities needed to monitor and manage their own writing, and (c) promote children's development of positive attitudes about writing and themselves as writers" (Harris et al., 1998, p. 134). These goals have expanded over time.

Theoretical Triangulation: An Example from Shaping, Scaffolding, Gradual Release of Responsibility, and the ZPD

The concept of theoretical triangulation is critical to the development of the SRSD model of instruction (Harris & Graham, 2018). I define theoretical triangulation as occurring when operationally described teacher and student actions representing differently named constructs are similar or identical across theories. Congruence across theories highlights the importance of these teacher and student actions. Triangulation also illuminates concerns noted by Greene (2022) and Wentzel (2021) regarding proliferation of similar theories and the need for greater parsimony in theoretical work. Four instructional constructs emanating from differing theories are illustrated next.

The first example is *instruction in the ZPD*, from Vygotsky's sociocultural theory of learning and development. Vygotsky (1978) described the ZPD as the difference between what a child can do independently and what the child could do and learn with collaboration, guidance, and modeling from a "more knowledgeable other" (p. 86). Second, the *successive approximations/shaping approach* was validated by behavioral researchers (e.g., Cooper et al., 2019; Burkholder & Peláez, 2000). Formative, dynamic assessment enables a teacher (or knowledgeable other) to collaborate with students in steps, called successive approximations, from where they are to a proximal goal. Discussion, modeling, managing difficulty, and other supports are used and faded. Third, *scaffolding*, where the teacher or other determines what the

student can do with successive levels of support (e.g., modeling, discussion, and collaboration), gradually removing these supports as the learner becomes competent at the task, was validated by researchers from constructivism, social cognitive, social learning, and other theories (Cazden, 1983; Zito et al. 2007; Wood et al., 1976). Finally, the last instructional construct was the *gradual release of responsibility model of instruction* (GRR; Pearson & Gallagher, 1983; Webb et al., 2019), where responsibility for completion of a task begins with the teacher leading and gradually shifts to the student independently completing a task. The teacher provides guidance and modeling for the student along this path, with guided practice allowing for gradual release of responsibility to the student. GRR (Webb et al., 2019) includes many components advocated for by Vygotsky (1962, 1978) and Meichenbaum (1977).

Each of these four constructs, in my analysis based on my studying and research, include virtually identical actions by a "teacher" and the learner. Competent adults or peers support the learner from where they are to a further level of knowledge and/or development, releasing supports as the student is ready. Each requires that the "teacher" (i.e., "knowledgeable other" in or out of school) understands the learner and what is to be learned. The teacher meets the learner where they are. Collaboration between teacher and students requires an effective relationship and inherently supports motivation (Brophy, 1999). The teacher determines supports based on knowledge of the student and the task (including "tools" in Vygotsky's terms). This typically can include explanation, discussion, visuals, physical objects (e.g., proximal writing models), modeling, and other supports as needed. The teacher guides and supports the student. Modeling can include not only task performance, but dealing with emotions such as frustration or anxiety when the task is difficult, and persistence when difficulties are encountered. Supports are withdrawn gradually until the student is acting independently.

The fact that multiple theories produce such a powerful approach to teaching and learning underlines the importance of this set of teacher/knowledgeable other and student actions. The similarities among these concepts have been observed by others (e.g., Cooper et al., 2019; Leahey, 1992; Moore, 1996, 2011). These teacher and learner actions became a core SRSD component in 1982. An additional example of theoretical integration across similar constructs can be found in comparing mindset to the long history of research on attributional theory (Neelen & Kirschner, 2020; see Harris, 2022; https://www.youtube.com/watch?v=WlrV5iZz8Fc).

Integration and triangulation across theories in SRSD include constructs from behavioral theory, Skinner, and Vygotsky. Critical constructs from each are often misunderstood. Understanding the theoretical triangulation that led to SRSD's theoretical principle requires clarifying these misunderstandings. Thus, I discuss each further next.

Clarifications Regarding Behavioral Theory and Skinner

When I discuss this example of triangulation, frequently someone observes that important differences exist. A common statement is that behaviorists are cold and impersonal in instruction and rely on tangible reinforcers and punishment. This

is a stereotype, not a truth. I taught 4th grade students and then students with severe emotional and behavioral challenges and frequently used positive behavioral approaches as part of teaching (see Bembenutty, 2022). I cared deeply for all of my students, as they knew. I have found teachers with behavioral perspectives to be highly caring and responsive.

The concepts of reinforcement and punishment in behavioral theory are often misunderstood (Cooper et al., 2019). The reinforcers in successive approximations are typically social reinforcers (e.g., feedback, partnership, success, developing new abilities), not tangible reinforcers as many assume. Moreover, Skinner (1953, 1974) was strongly anti-punishment due to chances of undesirable negative outcomes and the belief that positive approaches were more powerful and appropriate. He had similar concerns about negative reinforcement, where a behavior is maintained or learned by avoiding a negative consequence (e.g., stopping at a stop sign).

Interestingly, Skinner's move into research on human learning was in part due to his concerns about the lack of effective instruction in his daughter's classroom, and concerns for students and teachers (Skinner, 1953, 1974). Skinner, further, adhered to radical behaviorism, rather than Watson's methodological behaviorism. Thus, he believed private events mattered, (i.e. internal self-speech, emotions, thoughts, and motivation), arguing that radical behaviorism "did not call these events unobservable" (Skinner, 1974, p. 16).

Skinner, however, had concerns about being able to measure these events validly and reliably. Additionally, he did not see private events as causal or as necessary for understanding behavior (see Skinner, 1974, chap. 1). Skinner's uncompromising position about private events, as well as distortions, misinformation, and untruths about behavioral approaches, helped create a schism in the field of educational psychology and education (Abramson, 2013; Greenwood, 2015).

Many behaviorists today, however, study complex human behavior, including mediating variables, and do not see public events (i.e., observable, measurable behaviors) and private events (i.e., covert, measurable behavior, such as self-speech, thoughts, beliefs, and emotions) as meaningfully different (Abramson, 2013; Greenwood, 2015). There is variance across forms of behaviorism, nonetheless, in beliefs about the functional nature, impacts, and causal role of private events (Abramson, 2013; Greenwood, 2015: Moore, 2009, 2011). Further, groundbreaking work on measuring "unobservable" private events, across multiple theories, has impacted research on teaching and learning for decades (e.g., Merluzzi et al., 1981; Zimmerman & Schunk, 2007, 2011).

Researchers working from behavioral theory are committed to teaching and learning in general and special education. They are making significant impacts on teaching, learning, behavior, schools, and social improvement. For example, Positive Behavioral Interventions and Supports (PBIS, see https://www.pbis.org/) combines positive and proactive evidence-based practices to meet the social, emotional, and behavioral needs of all students, including those with disabilities, at the school level. PBIS addresses the need for more positive and supportive school environments and has demonstrated significant and meaningful effects across multiple outcomes and schools, impressive scaling up, and sustainability (Cooper et al., 2019; Horner & Sugai, 2015).

Clarifications Regarding Vygotskian Theory, ZPD, and Scaffolding

Confusions and misstatements in the areas of Vygotskian theory, including the ZPD and scaffolding, are important to understanding the SRSD model of instruction as well. Vygotsky, frustrated with psychometric-based assessments in Russian schools that provided little information for teaching, focused on the ZPD. The ZPD is the difference between what a child can do independently and what the child could do and learn with collaboration, guidance, and modeling from a more knowledgeable other (Vygotsky, 1962, 1978), as noted previously.

The more knowledgeable other was critical to Vygotsky's view of learning. He did not believe in discovery-type learning, or Piaget's constructivist view of learning, where teachers facilitated learning in an enriched environment. Vygotsky saw guidance and support as critical to learning and development and supported this principle by examining how infants and young children learn to talk (Karpov, 2014; Vygotsky, 1962; Wertsch, 1979). It is, therefore, disconcerting that many who believe in constructivism and whole language, readers and writers workshop, and similar discovery-type approaches, name Vygotsky as major support for their views (Gray, 2010; Harris & Graham, 1993; Karpov, 2014; Harris & McKeown, 2022). They claim that learning to talk develops naturally without instruction as evidence that explicit teaching is not needed, and thus learning in school does not require active, explicit instruction, but research does not support this claim (Finn & Davis, 2007; Good, 2024; Harris, 2018, 2021b).

Origin of the Scaffolding Construct

It is also informative to look at the origin of the concept, or metaphor, of scaffolding, sometimes referred to as "Vygotskian scaffolding." The term scaffolding is frequently seen as coming from Vygotsky's work. Vygotsky, nonetheless, was not the first to use this term in regard to teaching and learning. Schvarts and Bakker (2019) did a deep historical dive into the origin and purposes of the term "scaffolding." They provide evidence that Vygotsky and his colleagues Luria and Bernstein rarely used this term, and when they did, it was in relationship to motor development (e.g., learning to walk) or learning to speak, not teaching and learning. Schvarts and Bakker found that Wood et al. (1976) were the first to use this term regarding teaching and learning. They defined scaffolding as a "process that enables a child or novice to solve a problem, carry out a task, or achieve a goal which would be beyond his unassisted efforts" (Wood et al., 1976, p. 90). Scaffolding research was meaningfully extended when it became a focus of research for Bruner and his colleagues (e.g., Bruner, 1978), and became a well-known construct. Interestingly, Schvarts and Bakker (2019) reported that Bruner and Luria were long-time friends who shared their work, and Bruner noted Luria was a father figure to him, indicating how Bruner and his colleagues were influenced by Vygotsky and his colleagues.

A Different View

Freedman and colleagues (2016) described a different view of the ZPD and scaffolding. They argued that a focus on scaffolding, which came from Bruner and not Vygotsky, led to a shift "to relatively rigid and noninteractive views of instruction" (p. 1392). They described the ZPD as sometimes reduced to "small bits of learning" to guide scaffolding, which was focused on "mastery of these small bits of learning" (Freedman et al., 2016, p. 1392). This description of scaffolding and the ZPD flies in the face of a large body of research and practice on scaffolding and the ZPD (e.g., Frey et al., 2023; Harris et al., 2023b; Wertsch, 1979) that results in significant learning and improvement across academic areas. Freedman and colleagues also erroneously described SRSD instruction. They indicated it focused on cognitive theory, was unlike process pedagogy, was created to respond to high-stakes testing and teacher-proof curriculum, and was not related to "higher levels of thinking demanded… to read and write compelling complex tests across the curriculum" (p, 1399). This is not congruent with SRSD instruction as described here and in numerous articles and books.

Building SRSD Instruction that Worked: First Study

Writing researchers often assess writing quality with either holistic or analytic scales. Holistic rating scales are based on an overall judgement about student writing across appropriate grade level characteristics. Analytic writing scales provide individual scores for identified characteristics of writing (e.g., Imbler et al., 2022). The number of genre (or text structure) elements expected in student writing is assessed by identifying and totaling the elements present (e.g., Harris et al., 2023a). The terms holistic and analytic assessments are frequently used in writing research and will be used throughout this section and the rest of this article.

The next steps were to build an initial instructional model, focusing on writing instruction, and test it. Our first study of what I initially termed *Self-Control Strategy Training* involved a single-case experimental design, the multiple-baseline-across-behaviors nested within a multiple-baseline- across-subjects design (Harris & Graham, 1985). Instruction combined initial aspects of research reviewed here and CBM. I observed two senior undergraduate students majoring in special education provide instruction after I trained them. Each taught one 12-year-old student with LD in a quiet setting outside of the classroom. The students learned how to use effective vocabulary in story writing. Vocabulary that reaches readers matters in writing. Students learned strategies for using effective vocabulary, self-regulation of the writing process (i.e., goal setting, self-instructions, self-monitoring, and self-reinforcement), and the importance of what they were learning. They discussed using what they were learning in their resource room, and in other settings.

I knew many students disliked writing by 3rd grade, but underestimated the strength of students' attitudes, beliefs, and experiences with writing. When collecting student assent individually to work with us, I said we would learn how to use fun and effective adjectives, adverbs, and verbs to make our writing better. One student

told me, "no, I failed that in English, I can't do it." I reworked all lessons to focus on describing words, action words, and action helpers to avoid issues with the former terms. I expanded discussion to include how students felt about writing, what was hard or easy for them, what they believed about writing, and why everyone had to learn to write (see Harris et al., 2008). The importance of effort to learn, and effort to use what they learned, were emphasized. I met again with this young boy and explained what he could now work on with a writing teacher. I asked for his assent, and he said yes. He did great, and after the study, I explained the other names for these kinds of words. At first, he did not believe me. His teacher told him this was true and how well he was using each type of word in her room. He was so proud.

We learned a great deal from this initial, modest study (Graham et al., 2005; Harris & Graham, 1985). Both students made meaningful improvements in their writing. Stories written after instruction received substantially higher quality ratings than those written in baseline. Short-term maintenance of up to 6 weeks was obtained for both students, as was generalization to writing in the resource room rather than in a one-on-one setting. Follow-up assessments collected in the students' junior-high school placements three-and-a-half months after instruction were mixed for both maintenance and generalization. Meichenbaum (1977) noted some students might need follow-up booster sessions to bring performance back to post instructional levels. Booster sessions were included in later studies and resulted in stronger maintenance and generalization; further, we continued focusing on attributions and self-efficacy for writing in future research (Harris & Graham, 2018; Sexton et al., 1998).

Next Studies, Finetuning SRSD Instruction, and Name Changes

I changed the name of the evolving instructional model in 1987, to *Self-Instructional Strategy Training* (Graham et al., 1987; Harris & Graham, 2009). I further revised instruction in terms of attributions for learning and developing as a writer to reflect two essential things. All of these changes are part of SRSD today. First, SRSD teachers explained: "you will learn powerful strategies (or "tricks") that help all writers, but that you haven't yet been taught." Second, "I will put forth the effort to teach you these strategies, and I need you to agree to put forth the effort to learn these strategies and to use them." SRSD teachers reinforced this throughout instruction (Harris & Graham, 1996; Harris et al., 2008). Students and teachers discussed their beliefs about writing and themselves as writers. Beliefs students expressed, such as "I was born this way," or "I'll never be a writer," were addressed; how self-talk like this gets in our way as learners and writers was discussed. Teachers and students discussed how writing can be hard at times, everyone has to learn to write, and how what students were learning would help to make writing easier (Harris et al., 2008; Harris & Graham, 1996).

Instruction was modified to include more aspects of CBM. Instruction supported students in building multiple kinds of self-instructions (i.e., self-talk or self-speech) *in their own words*, including individualized self-instructions that support

attributions to knowledge, effort, and strategy use; and managing emotions and persistence. Self-instructions for younger students typically addressed multiple things they might say to help them as they started writing with the instructor, while they worked, and after they finished a draft. A few examples from our young students are as follows: for getting started ("what is it I have to do here?", I've got this, I know the strategy,"); while they worked ("take my time," "I know what to do next," "use the mnemonic"); and after finishing a draft ("I used my brain," "I like my essay."). Older students expanded on types of self-instructions. Harris et al. (2008) and Harris and Graham (1996) provide detailed information and examples. Students frequently note self-talk as one of the best parts of SRSD.

In 1990, I changed the name again to *Self-Instructional Strategy Development*, in part due to additional refinements and to emphasize the developmental nature of writing and learning and using strategies (Graham & Harris, 1990). This change was also due in part to the dispute over the word "training" used in preparing teachers, although astronauts and others do not object to this word (Harris, 2018, 2021a).

Self-Regulated Strategy Development

In 1992, I made one last name change to *Self-Regulated Strategy Development*, *or SRSD* (Case et al., 1992; Harris & Graham, 1999; Sexton et al., 1998). I wanted to express the role of multiple self-regulation strategies and supports for writing in SRSD instruction. The first published study using the term SRSD, however, was on mathematical word problem-solving among students with LD (Case et al., 1992); outcomes were positive and strong. Here, I describe the first SRSD study involving writing.

Sexton et al. (1998) provided SRSD instruction (more similar to what it is today than in the preceding studies) to assist six, 6th grade students with LD develop strategies for planning and writing persuasive essays, self-regulation of the strategies and the writing process (using self-talk, goal setting, self-monitoring, and self-reinforcement), positive attributions regarding effort and strategy use, maintenance (performance after instruction stay similar to posttest), and generalization (use of the strategies outside of the instructional setting where SRSD instruction occurred). A multiple-base line across-subjects design was used. Teacher observations before instruction indicated all six students displayed low levels of motivation and maladaptive attributions about causes of success and failure. Meaningful effects were predicted for all outcomes based on previous research and further finetuning instruction. SRSD instruction used the six flexible and recursive stages of instruction and established characteristics of SRSD instruction used today (described next), in an inclusive setting. Process writing/writers' workshop instruction was paused only during SRSD instruction; indicating SRSD can be integrated with the process approach. This study was more complex than earlier studies and included more research questions.

SRSD instruction worked. Planning for persuasive essays increased and essays were longer, included a premise, an average of three supporting reasons, and a

concluding statement. Text was coherently ordered using genre structure, and over-all quality improved. Only two students were able to take the generalization assessment; their results were similar to posttest outcomes. Two students were more positive about both the role of effort and strategy use; two students became more positive about strategy use and maintained reported initial positive attitudes about effort; and two students maintained reported pre-instruction positive beliefs about both effort and strategy use. All students were positive about the instruction and more confident about their writing abilities. This study helped demonstrate that students' attributions for writing outcomes can become more positive and malleable by a combination of strategy, attribution, and self-regulation components in instruction. Effects transferred across settings and teachers; maintenance data was mixed.

Another critical research question was addressed in this study: are all stages of SRSD instruction necessary to get strong results? In addition to the pretest and post-test writing assessments, two additional writing assessments were administered during instruction. One was given after discussing beliefs about writing, what students would learn and why, and the development of knowledge about an effective persuasive essay through reading strong models written at students' writing levels, and revising weak models. None of the students made any writing gains at this point in instruction. The second assessment was given after interactive teacher modeling of all they were learning and making sure all students could use a mnemonic to remember the genre parts. Scaffolding and gradual release of control had not yet occurred. Only two of the six students made appreciable gains in writing at this point. Post-test results indicated that scaffolding students in use of the strategies and gradually releasing these supports was critical to getting the outcomes described previously, as all students improved further. However, in general, differentiation in SRSD instruction is needed. Not all students will need as much time or supports, whereas some may need more, and in some classrooms, students may need differing strategies (Harris, 1982; Harris & Graham, 1996; Harris et al., 2008).

It was becoming clear that SRSD instruction in writing is relevant for all students. General education teachers were asking how the special education teachers were getting such strong improvements in writing; they wanted in. Since the name change to SRSD, single case design, quasi-experimental, randomized controlled trials, and qualitative studies have been conducted examining more research questions and more outcome variables, with positive results for writing quality, engagement, attributions, self-efficacy for writing, and more (e.g., Graham et al., 2023; Harris et al., 2023b).

Does the Name Matter?

Changing the name three times before it became SRSD had an outcome I failed to anticipate. Those searching for SRSD instruction often miss the earlier studies. Changing the name again would only cause confusion, and the name is appropriate. As I have noted before though, I should have named SRSD instruction something more like Grit!

I should have realized, as Dubin (1978) did, how much names matter in grabbing the attention of other researchers and teachers. Dubin noted, however, that catchy names can have downsides. They can sustain attention when facts refute a theory; result in accepting "research widely and uncritically before sufficient work has been done to specify the degree of generality or specificity of the 'trait' being dealt with;" and "lead to coining new names for old concepts" (Dubin, 1978, p. 270). Greene (2022) and Wentzel (2021) expressed similar concerns, as have others (e.g., Maier, 1960).

At this point, I have traced the evolution of what is now called SRSD from after the first study (Harris & Graham, 1985) through several further studies and name changes until the final name today, SRSD. The results of these studies are positive across many outcomes. The major components and characteristics of SRSD instruction were now in play, although researchers will continue to refine SRSD instruction over time and in contexts (Harris & Graham, 2018). In the next two sections, I provide a more detailed description of SRSD instruction today. Then, I provide the major research questions generated regarding the SRSD model of instruction, the hypotheses made, and a summary of the current evidence base for the SRSD instructional model for writing and reading to write.

The SRSD Instructional Model for Writing and Reading

Initial research on SRSD focused on writing across genres and grade levels. Research on SRSD instruction now also addresses reading and the combination of SRSD reading and writing instruction. SRSD instruction in reading and writing has been used to promote reading comprehension, learning, engagement with text, and response to text (e.g., Mason, 2004; Mason et al., 2012; Sanders et al., 2019), although this research is not well recognized in the reading field. SRSD for close reading (i.e., marking up of text for information and understandings needed for the intended audience and writing purposes) to improve reading comprehension and learning, and then writing to inform, persuade/argue, or narrate, has produced meaningful and significant outcomes across diverse classrooms (e.g., FitzPatrick & McKeown, 2021; Harris et al., 2019; Kim et al., 2024; Mason & Basile, 2023; Mason et al., 2013, 2018). SRSD instruction, as described here, follows the same process for teaching reading comprehension strategies (including close reading) and writing strategies.

Time needed for SRSD instruction varies depending on the number and complexity of the strategies being learned (Harris & Graham, 2018; Harris & Mason, 2023). SRSD instruction is not scripted. It reflects strong respect for, and reliance on, teacher judgement based on observation of and collaboration with students, and formative assessment. Teachers' knowledge of their students' social, cultural, and language characteristics, and their communities, is critical to instruction and differentiation. SRSD also requires believing that all children can learn; this is strongly communicated to students, as described previously. These are aspects of a culturally responsive pedagogy (Carter & Darling-Hammond, 2016); yet further modifications to SRSD instruction and PD for SRSD to address culturally responsive pedagogy

need to be researched (Kiuhara et al., 2024). SRSD was developed with diverse classrooms in mind, and SRSD research has frequently focused on diverse leaners (Harris & Graham, 1985; Salas et al., 2021).

SRSD instruction develops the knowledge needed to own validated strategies for writing and the writing process. This includes knowledge of general characteristics of effective writing; genre knowledge; declarative knowledge, procedural knowledge, and conditional knowledge. Students develop self-regulation strategies (i.e., goal setting, self-assessment of writing performance related to goals, self-instructions, and self-reinforcement) for managing the writing process and their affect, behavior, and cognition. Social-emotional goals in SRSD, targeted by multiple aspects of instruction, include improving motivation, self-efficacy for writing, attitudes and beliefs about writing, and peer collaboration (e.g., Gillespie Rouse & Kiuhara, 2017; Harris et al., 2008).

Students are active collaborators in SRSD; whole class, group, and peer collaborations and discussions are integral. SRSD instruction involves rich discourse to develop academic vocabulary, concepts, and knowledge. Aspects of topic, audience, purpose, genre structure, sentence structure, writing quality, and more as appropriate, are investigated and discussed while reading writing level exemplar texts. These texts are examples of what these students are reaching for as writers. Reading or listening comprehension level texts used in the classroom, which are generally at a higher level than students can write at, especially for younger students, should be integrated in discussion, but are not reasonable models for student writing. Teachers and students, small groups, or peers analyze and rewrite poor texts, and continue discussion during planning, writing, and feedback.

Characteristics of effective writing generalizable across genres and tasks (e.g., "hook your reader," "use strong vocabulary,") are identified. Goals are determined for students' writing and differentiated as needed (Harris & Graham, 2018; Harris et al. 2008). Writing in response to a prompt requires learning to "pull apart the prompt;" identifying topic, audience, purpose, and other salient aspects the writer needs to address. Mnemonics support long-term memory of strategies learned, but alone do not create powerful writing. Rather, mnemonics and graphic organizers generated by the mnemonics (produced on scratch paper) reduce cognitive load so that students can engage more adeptly in the writing process (see Sweller, 2023).

SRSD instruction takes place across six stages: (a) develop and activate background knowledge, (b) discuss it, (c) model it (typically with interactive participation by students), (d) memorize it, (e) support it, and (f) independent performance (Harris & Graham, 1996). These stages are flexible and recursive; teachers differentiate for students' strengths and needs. The steps can be combined, reordered, or repeated, depending on the needs of the student. Instruction is mastery-based, allowing each student the time needed to meet their goals in each stage until they can use these strategies independently and effectively. This means that all students may not have the same goals, receive the same supports, or be in the same stage of instruction at times (Harris et al., 2008). I believe six characteristics are also critical to the success of SRSD instruction (Harris & Graham, 1996; Harris et al., 2008): (a) collaboration with the teacher and peers, (b) individualization/differentiation, (c) mastery-based instruction, (d) anticipatory instruction (considering things that could

go wrong or not be effective for some students and planning ahead to address these possibilities), (e) enthusiastic, caring teachers, preferably working within a support network, and (f) developmental enhancement (enhancing development over time by curriculum planning across and within grades).

Detailed descriptions of SRSD instruction across these stages and vignettes of classroom implementation are available (e.g., Graham & Harris, 2005; Harris & Graham, 1996, 2018; Harris et al., 2010, 2011; 2018; Zito et al., 2007). The Harris et al. (2008); Mason et al., (2012), and Reid et al. (2013) books allow all materials needed for instruction to be freely copied or provide downloadable materials. SRSD researchers characteristically offer PBPD for teachers in control schools and all materials for free. When new strategies are validated, SRSD researchers typically offer materials for professional learning and instruction for free, sometimes online (e.g., https://figshare.com/articles/pow_tree_twa_for_Writing_Persuasively_from_Source_Text_Lesson_Plans_Materials_and_Tips/5217226/2). I provide an extensive list of SRSD resources, including books, articles, videos, materials, and more on Research Gate (https://doi.org/10.13140/rg.2.2.32290.85449). Videos on SRSD instruction, teacher and student interviews, examples of materials and student outcomes, and more are available from two impressive organizations devoted to scaling up SRSD https://thinksrsd.com/ and https://srsdonline.org/ (I voluntarily advise both). Finally, SRSD is not a complete writing instruction program. To write effectively, students need to learn handwriting, keyboarding, spelling, sentence construction, vocabulary, discourse knowledge, and more. These can be integrated with SRSD instruction, but require focused instruction in addition (e.g., Harris et al., 2003, 2008, 2023a; Kim et al., 2024; see https://srsdonline.org/srsd-deep-dive/).

Research Questions, Hypotheses, and Current Evidence Base for the SRSD Model

In this section, I specify the research questions and hypotheses generated by the theoretical principle for SRSD. The current evidence base for SRSD instruction is then summarized and related to these research questions and hypotheses. Research on professional development for SRSD is also described.

Research Questions and Hypotheses

Four initial research questions (RQs) arose from SRSD's theoretical principle, as described previously: Integrating instructional practices across existing theories with strong evidence bases, combined with identifying where theoretical triangulation occurs (teacher and student actions are highly similar/identical although described with different terms across two or more theories), will create a model of instruction that will maximize impacts on multiple critical outcomes in learning and development.

1. Will SRSD instruction in writing be effective for students with and without disabilities, at differing SES levels, and students experiencing challenges in writing?
2. Will SRSD instruction in writing, as compared to writing instruction based on a single theory (e.g., traditional writers' workshop), writing instruction as it occurs in classrooms (business as usual), or writing instruction based on a less comprehensive integration of theories result in significantly and meaningfully better results across multiple outcomes than other writing instruction approaches?
3. Will outcomes of SRSD instruction for writing on multiple measures be significantly and meaningfully higher when all stages of SRSD instruction are included?
4. Will high-quality SRSD instruction in areas other than writing result in significantly and meaningfully stronger results across multiple outcomes than will other instructional approaches?

The hypotheses for each of the questions above were the same; in a word, yes. A synthesis of body of SRSD research is presented next, followed by a synthesis of research on these four questions.

Body of Research on SRSD and Synthesis of Research on Questions 1 and 2

The body of research on SRSD instruction in writing has become too large to review here (i.e., well over 100 studies), thus I focus on published meta-analyses or other syntheses. First, I summarize an early meta-analysis on research in SRSD for writing. Next, I provide results from two recent meta-analyses across research on differing writing interventions. These meta-analyses indicate that RQs 1 and 2 are answered affirmatively; some research has addressed RQs 3 and 4. Finally, a synthesis of research on PBPD for SRSD is described.

Early Meta-analysis of Research on SRSD for Writing

Graham and colleagues (2013) conducted a meta-analysis of SRSD instruction in writing; 116 studies from grades 1–12 were identified. Of these, 29 true-and quasi-experimental studies and 53 single-case experimental design studies met standards for inclusion. Single-subject experimental design cases were synthesized separately. Research on SRSD for writing was found in the USA and eight other countries. These studies included typically developing writers as well as students with special needs (i.e., LD, EBD, attention deficit/hyperactivity disorders, Asperger's syndrome, severe cognitive disabilities, writers below grade level expectations without an identified disability, and incarcerated youth). When all 29 true- and quasi-experiments were considered together, the average weighted effect size (ES) at posttest for quality of writing and genre elements included were 1.75, and 2.24, respectively (Graham et al. 2013). Effects for both outcomes were maintained over time; effects sizes were, respectively, 1.30 and 1.41. Seven studies examined generalization to different, but proximal (e.g., story writing to personal narrative), writing tasks, producing an ES for quality of 1.00. Results for elements involved five studies, yielding an ES of 1.55. All average weighted ESs were statistically significant. To put the findings

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 0.82. Findings from 53 single-subject design studies supported and extended these results.

Further, SRSD was effective across research teams in several countries (as opposed to primarily us and our colleagues), across different methodologies, genres, students, and classrooms; settings; elementary through secondary grade levels; and implementation by research team members or teachers (Graham et al., 2013). There was no significant difference between teacher-led SRSD instruction and research team-led instruction for writing quality, but teacher-led instruction produced significantly higher effects for genre elements. We were not surprised by this finding. Teachers told us they taught or used SRSD instruction across literacy and content areas, providing more time and learning experiences than researchers. Effect sizes were large regardless of who led instruction, ranging from 1.52 to 2.55. Graham and Harris (2018b) found similar results and extended findings in a meta-analysis of meta-analyses.

Recent Meta-analyses of Writing Interventions Including SRSD

Graham (in press) conducted a meta-analysis of meta-analyses, examining the outcomes of 36 meta-analyses of multiple approaches to writing instruction that included true experiments and quasi-experiments. Studies from preschool to adulthood (i.e., college) were included. Each meta-analysis included had to report at least one average ES across studies for at least one writing treatment and include at least four investigations. Multiple writing interventions were examined. Here, results are reported for teaching students to become more strategic by facilitating and/or teaching writing production processes. Results were examined for (a) teaching the writing process (writers' workshop), (b) strategy instruction that was not SRSD, and (c) SRSD instruction. SRSD writing instruction was separated from the other two approaches listed above because effect sizes have been larger for SRSD than these approaches in previous meta-analyses, causing interpretation problems when combined. Teaching writing strategies was examined in 12 meta-analyses by differing teams; nine of these included SRSD instruction. In 65% of the outcomes for SRSD, the ES was greater than a full standard deviation (i.e., 1.00).

Across grades 1–12, ESs for writing quality following SRSD instruction ranged from 1.04 to 2.37 (Graham, in press). ESs for inclusion of genre elements following SRSD instruction ranged from 1.87 to 2.24 (two meta-analyses included genre elements in inclusive classrooms or special education classes for students with EBD). Writing length was examined in only two meta-analyses of SRSD instruction; ES ranged from 0.47 to 1.13 in classrooms for students with EBD and inclusive classrooms respectively. ESs for writing self-efficacy were reported in only one meta-analysis, the ES was 0.57. In contrast, strategy instruction that was *not SRSD* in grades 1–12 (i.e., writing process or less theoretical integration) reported ESs for writing quality ranging from 0.24 to 0.66. ESs for genre elements were not reported. Only one meta-analysis reported ESs for writing self-efficacy; the ES was 0.24.

A second recent meta-analysis of meta-analyses found SRSD had the strongest impact of any writing instruction approach in grades 6–12 (Graham et al., 2023).

SRSD strategy instruction had an ES of 0.94 across all writing measures, and 1.16 for writing quality. Strategies instruction that was not SRSD had an ES of 0.66 for all writing measures and 0.79 for writing quality. SRSD also had the highest average weighted ES for writing quality of any writing intervention. The differences between non-SRSD and SRSD strategy instruction in writing outcomes have been relatively stable and meaningful across meta-analyses over time, including meta-analyses conducted by researchers other than Graham and colleagues (e.g., Koster et al., 2015). Koster et al. (2015) stated that the "SRSD approach seems to have developed into the 'standard' in strategy instruction…as studies examining SRSD invariably yield large effect sizes" (p. 317). Finally, Salas et al. (2021) found SRSD effective across differing SES levels.

SRSD Determined an Evidence-Based Practice

SRSD for writing was deemed an evidence-based practice (EBP) based on rigorous review of the research base for typically achieving writers and students meaningfully below grade level in writing in the Institute for Education Sciences Practice Guide: *Teaching Elementary School Students to Be Effective Writers* (Graham, Bollinger, et al., 2018). SRSD for writing was also deemed an EBP for students with LD in a study by Baker et al. (2009) and for students with EBD in studies by Losinski et al. (2014) and Garwood and Brunsting (2019).

Summary of Evidence for RQ 1 and RQ 2

These meta-analyses and EBP designations indicated that RQ 1 is answered affirmatively: SRSD instruction in writing is effective for students with and without disabilities, across SES levels, and for students experiencing challenges in writing. RQ 2 is also answered affirmatively: SRSD instruction in writing, as compared to writing instruction based on a single theory, writing instruction as it occurs in classrooms (i.e., business as usual), or writing instruction based on a less comprehensive integration of theories than SRSD instruction, results in significantly and meaningfully better results across multiple outcomes in writing than other writing instruction approaches, as seen in the meta-analyses reviewed.

Status of Research on RQ 3 and 4, and New Research

RQ 3 addressed whether outcomes of SRSD instruction for writing would be significantly and meaningfully higher when all stages of SRSD instruction were included. Only a handful of studies have investigated this question (e.g., Chalk et al., 2005; Danoff et al., 1993; Graham & Harris, 1989a; Harris & Graham, 1985; Sawyer et al., 1992). Adding additional assessment times in school-based research is often not possible. This question, however, requires further research. These studies indicate that for most students, the best results are not obtained until the fifth and 6th stages of SRSD instruction, where scaffolding is gradually withdrawn, and students write independently.

Researchers have also examined whether the self-regulation components of SRSD instruction enhance outcomes. Graham et al. (Graham et al. 2013) found five studies that compared 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, 1989b; Graham et al., 2005; Harris et al., 2006; Sawyer et al., 1992). Each study found that the self-regulation components enhanced SRSD instruction meaningfully; the added value of self-regulation strategies in the SRSD model was 0.48 standard deviations.

RQ 4 addressed whether SRSD instruction in areas other than writing would result in stronger results across multiple outcomes than other instructional approaches. SRSD instruction is being researched across areas other than writing with strong, positive outcomes. These include reading comprehension and close reading of source texts for writing (as noted previously in the section on SRSD for writing and reading); mathematics learning for algebraic concepts, fractions, and word problems (e.g., Case et al., 1992; Ennis & Losinski, 2020; Kiuhara et al., 2023, 2024) and science, social studies, and history (e.g., Collins et al., 2021; De La Paz, 2005; McKeown et al., 2021). More research is needed across content areas, but initial research is affirmative.

In sum, the research reviewed indicates that SRSD outcomes of SRSD are significantly and meaningfully higher when all stages of SRSD instruction are included, as addressed in RQ 3. Regarding RQ 4, research indicates SRSD instruction in areas other than writing, as noted above, results in stronger results across multiple outcomes than other instructional approaches. Both RQ 3 and 4, however, require further research.

PBPD for SRSD

Finally, SRSD for writing requires PD for many teachers, as the majority of teachers report not being prepared to teach writing. In a recent systematic review of research on PD for writing strategies instruction, Harris and colleagues (2023a) reviewed 21 published studies pf PBPD for SRSD across three countries. SRSD instruction in 14 of these studies was led by general education teachers at the whole class level. Teacher fidelity in SRSD instruction averaged 90% of SRSD components implemented. *These teachers achieved results in writing quality and elements equivalent to those found in previous researcher-led SRSD instruction*; although some researchers have found research team members get stronger effects than classroom teachers (e.g., de Boer et al., 2014). In addition, studies of teacher-led SRSD resulted in positive results for other student outcomes, such as self-efficacy, persistence, engagement, planning, revising, sentence construction, and vocabulary (Harris et al., 2023b; Camping et al., in press).

Future Research, Paradigm Wars, and Other Barriers

Future Research and Complexity Science

Many areas remain to be addressed in future research on SRSD; such as involving family members in SRSD instruction; writing as a social, active tool for equity (e.g. Kirkland, 2019); continued work with students learning English (e.g., Barkel, 2018; Ray et al., 2023); further integrating reading and writing across content areas; integration with technology, and online PBPD for SRSD (Harris et al., 2018; Kiuhara et al., 2024; Ray & Mason, in press; Wijekumar et al., 2017, 2022). Research has shown that writing instruction improves reading, and vice versa (Graham, 2019); little SRSD research has examined these relationships. SRSD instruction will likely become more effective when more researchers in areas other than Curriculum and Instruction, Educational Psychology, and Special Education join in this research (e.g., Educational Leadership, Family Studies, School Psychology, Speech and Language).

Complexity science (CS) offers promise in understanding and improving teacher development, teaching, and learning (Garner & Harris, 2024). Marchand and Hilpert (2024) noted that complexities are inherent in educational psychological phenomena. CS allows the study of complex systems that are dynamic, sometimes unpredictable, multi-dimensional, and often characterized by non-linearity. As Jacobson et al. (2016) articulated:

> We hope principled theoretical considerations of learning as an emergent phenomenon in complex neural, cognitive, situative, social, and cultural systems will yield critically important insights of central relevance to our field that might not otherwise be possible…In addition, viewing the environments in which learning occurs as complex systems provides educational and learning researchers with powerful conceptual tools…that are being used by scientists in other areas of research. (p. 2017)

The individuals (e.g., teachers and students) and contexts within which SRSD instruction occurs are complex. Further, it is important to explore individual learners as complex systems within larger complex systems (Harris, 2018). Given the many components and characteristics of SRSD instruction, complexity science could help researchers address processes of change among teachers and students during PBPD and SRSD instruction. It can also provide a deeper understanding of how, when, why, and for whom SRSD instruction works. This is not only a critical issue in refining SRSD over time, but necessary in order to use SRSD research for the good of all students, particularly marginalized students in underserved schools (e.g., DeCuir-Gunby & Schutz; 2024; Good, 2024; Harris, 2018; Kirkland, 2019).

Barriers and Paradigm Wars

Scaling up EBPs is challenging, as many issues exist. Numerous barriers to scaling up SRSD in schools have been identified and discussed (see Harris, 2021b, 2024;

Harris & Graham, 2018; Harris & McKeown, 2022). Major barriers include issues in teacher preparation and PD, state curriculum adoption standards unaligned with EBPs in writing, high-stakes testing, and inadequate time for writing instruction. Working with school leaders and policymakers is critical, but change is slow (Good, 2024; Harris & Graham, 2016).

Vociferous paradigm wars are a significant barrier to scaling SRSD instruction in schools (Harris, 2024; Harris & McKeown, 2022). Although SRSD instruction and the process approach share numerous elements (e.g., Graham & Harris, 1996), a significant number of teachers, scholars, and leaders contend that strategies instruction, including SRSD, is the antithesis of the writers' workshop/process approach (cf. Harris, 2018; Harris & Graham, 2016, 2018a). This continues despite Donald Graves' (the father of the process approach) concerns regarding the limitations of the process approach (see Routman, 1995; Harris & McKeown, 2022). Others have recognized the need for more powerful literacy instruction as critical for social justice, realizing writing workshop was failing many students and exacerbating equity issues (e.g., Luscombe, 2022; Pondiscio, 2012). Further, researchers and teachers have shown that SRSD can be easily and effectively combined with process/workshop approaches, resulting in better outcomes (e.g., Danoff et al., 1993; Sexton et al., 1998).

Some have described SRSD instruction as cold, teacher-centered, and formulaic, despite detailed descriptions of SRSD in numerous books and articles for teachers and researchers (Harris & McKeown, 2022). One set of scholars (primarily working at the college level) claimed that writing strategies instruction (not just SRSD) for students learning English required "a fundamentally racist perspective" (Harris, 2018). Yet others have claimed that only one theory, sociocultural theory, can legitimately be used in writing research (e.g., Prior, 2006). Sadly, paradigm wars intensify divisions among natural allies and partners in improving writing instruction (Harris, 1990, 2018; Harris & Graham, 1994).

Conclusion

SRSD does not belong to me or the larger SRSD research community. It was developed to be owned by teachers and their students. SRSD as it is today exists due to numerous dedicated colleagues and independent researchers; exceptional former doctoral, masters, and undergraduate students; teachers and their students; other educational professionals; and the growing community of SRSD researchers. I am grateful for them all. I believe that no single theory adequately addresses the monumental challenges faced in our culture and around the world regarding equity and social justice, nor does allegiance to any single theory provide moral superiority. Rather, we must come together using all that we have learned not only to teach our children, but also to address the wicked problems that confront us in society and education today (Good, 2024; Harris, 2018). We are stronger together.

Declarations

Competing interests The author declares no competing interests.

References

Abramson, C. I. (2013). Problems of teaching the behaviorist perspective in the cognitive revolution. *Behavioral Science, 3*, 55–71.

Alexander, P. (1997). Mapping the multidimensional nature of domain learning: The interplay of cognitive, motivational, and strategic forces. In M. Maehr & P. Pintrich, (Eds.), *Advances in motivational achievement* (Vol 10; pp. 213-250.) JAI.

Alexander, P. A., & Murphy, P. K. (2024). Evolution of a learning theory: In praise of scientific speculation. *Educational Psychology Review, 36*(21), 1–22. https://doi.org/10.1007/s10648-024-09865-2

Alexander, P. A., Graham, S., & Harris, K. R. (1998). A perspective on strategy research: Progress and prospects. *Educational Psychology Review, 10*(2), 129–154.

American Psychological Association, Coalition for Psychology in Schools and Education. (2015). *Top 20 principles from psychology for preK–12 teaching and learning.* Retrieved from http://www.apa.org/ed/schools/cpse/top-twenty-principles.pdf

Baer, D. M. (1981). *How to plan for generalization*. Pro-Ed.

Barkel, A.A. (2018). Self-regulated strategy development writing instruction with elementary-aged students learning English. [Unpublished doctoral dissertation]. Arizona State University. https://keep.lib.asu.edu/items/156700

Bazerman, C. (Ed.). (2007). *Handbook of writing research: History, society, school, individual, text*. Routledge.

Bembenutty, H. (2022). An interview with Karen R. Harris: The pioneer and developer of the Self-Regulated Strategy Development (SRSD) model of writing instruction (pp. 109-147). *Contemporary Pioneers in Teaching and Learning,* Vol. 2. Information Age Publishing.

Berliner, D. C. (2006). Our impoverished view of educational research. *Teachers College Record, 108*(6), 949–995. https://doi.org/10.1111/j.1467-9620.2006.00682.x

Blank, M. (2002). Classroom discourse: A key to literacy (pp. 151-173). In K. G. Butler & E. R. Silliman, *Speaking, reading, and writing in children with language learning disabilities.* Lawrence Erlbaum.

Brindle, M., Graham, S., Harris, K. R., & Hebert, M. (2016). Third and fourth grades teacher's classroom practices in writing: A national survey. *Reading and Writing, 9*, 922–938.

Bronfenbrenner, U., & Morris, P.A. (2006). The bioecological model of human development (pp. 793–827). In W. Damon & R.M. Lerner (Eds.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (6th Ed.). Wiley.

Brown, A. L., Campione, J. C., & Day, J. D. (1981). Learning to learn: On training students to learn from text. *Educational Researcher, 10*, 14–21.

Brophy, J. (1999). Toward a model of the value aspects of motivation in education: Developing appreciation for particular learning domains and activities. *Educational Psychologist, 14*, 75–85.

Brophy, J. (2001). Introduction. In J. Brophy (Ed.) *Subject-specific instructional methods and activities (Advances in Research on Teaching*, Vol. 8 (pp. 1-23), Emerald Group Publishing. https://doi.org/10.1016/S1479-3687(01)80021-3

Bruner, J.E. (1978). The role of dialogue in language acquisition. In A. Sinclair, R., J. Jarvelle, and W. J. M. Levelt (Eds.), *The child's concept of language*. Springer-Verlag.

Brunstein, J. C., & Glaser, C. (2011). Testing a path-analytic mediation model of how self- regulated writing strategies improve upper-elementary school students' composition skills: A randomized control trial. *Journal of Educational Psychology, 103*, 922–938.

Burkholder, E. O., & Peláez, M. (2000). A behavioral interpretation of Vygotsky's theory of thought, language, and culture. *Behavioral Development Bulletin, 9*(1), 7–9. https://doi.org/10.1037/h0100530

Camping, A., McKeown, D., Williams, M, & Harris, K.R. (in press). Professional development in writing instruction. In C. MacArthur, S. Graham, & J. Fitzgerald, J. (Eds.). *Handbook of Writing Research* (3rd Ed). Guilford.

Carter, P.L., & Darling-Hammond, L. (2016). Teaching diverse learners. In D.H. Gitomer & C.A. Bell (Eds). *Handbook of research on teaching,* (5th Ed, pp. 593-638). AERA. https://www.aera.net/Publications/Books/Handbook-of-Research-on-Teaching-Fifth-Edition

Case, L. P., Harris, K. R., & Graham, S. (1992). Improving the mathematical problem-solving skills of students with learning disabilities: Self-regulated strategy development. *Journal of Special Education, 26,* 1–19.

Cazden, C. (1983). Adult assistance to language development: scaffolds, models and direct instruction. In R. P. Parker and F. A. Davies (Eds.) *Developing literacy*. International Reading Association

Chalk, J. C., Hagan-Burke, S., & Burke, D. (2005). The effects of self-regulated strategy development on the writing process for high school students with LD. *Learning Disability Quarterly, 28,* 75–87.

Collins, A., Ciullo, S., Graham, S., Sigafoos, L., Guerra, S., David, M., & Judd, L. (2021). Writing expository essays from social studies source texts: A self-regulated strategy development study. *Reading and Writing: An Interdisciplinary Journal, 34,* 1623–1652.

Cooper, J., Heron, T., Heward, W. (2019). *Applied Behavior Analysis* (3rd edn). Pearson

Danoff, B., Harris, K. R., & Graham, S. (1993). Incorporating strategy instruction within the writing process in the regular classroom: Effects on the writing of students with and without learning disabilities. *Journal of Reading Behavior, 25*(3), 295–322. https://doi.org/10.1080/10862969009547819

de Boer, H., Donker, A. S., & van der Werf, M. P. C. (2014). Effects of the attributes of educational interventions on students' academic performance: A meta-analysis. *Review of Educational Research, 84*(4), 509–545. https://doi.org/10.3102/0034654314540006

De La Paz, S. (2005). Effects of historical reasoning instruction and writing strategy mastery in culturally and academically diverse middle school classrooms. *Journal of Educational Psychology, 97*(2), 139–156. https://doi.org/10.1037/0022-0663.97.2.139

DeCuir-Gunby, J. T., & Schutz, P. A. (2024). The evolution of race-focused and race-reimagined approaches in educational psychology: Future directions for the field. *Educational Psychology Review, 36*(1), 30.

Dubin, R. (1978). *Theory Building* (2nd ed.). Free Press.

Efklides, A., & Schwartz, B. L. (2024). Revisiting the metacognitive and affective model of self-regulated learning: Origins, development, and future directions. *Educational Psychology Review, 36*(61), 1–36. https://doi.org/10.1007/s10648-024-09896-9

Ennis, R. P., & Losinski, M. L. (2020). SRSD fractions: Using self–regulated strategy development model strategies to support students' conceptual and procedural fraction knowledge. *Education and Treatment of Children, 43*(1), 85–94. https://doi.org/10.1007/s43494-020-00007-1

Finn, C.E., & Davis, M.A. (2007). Forward. In Moats, L.C. (2007). *Whole language high jinks: How to tell when "Scientifically-Based Reading Instruction" isn't.* Washington, DC: Thomas Fordham Foundation. https://fordhaminstitute.org/national/research/whole-language-high-jinks

FitzPatrick, E., & McKeown, D. (2021). Writing from multiple source texts: SRSD for fifth grade learners in inclusive settings. *Learning Disabilities Research & Practice, 36*(3), 188–200. https://doi.org/10.1111/ldrp.12257

Freedman, S. W., Hull, G. A., Higgs, J. M., & Booten, K. P. (2016). Teaching writing in a digital and global age: Toward access, learning, and development for all. In D. H. Gitomer & C. A. Bell (Eds.), *Handbook of Research on Teaching* (5th ed., pp. 1389–14449). AERA. https://www.aera.net/Publications/Books/Handbook-of-Research-on-Teaching-Fifth-Edition

Frey, N., Fisher, D., & Almarode, J.T. (2023). *How scaffolding works: A playbook for supporting and releasing responsibility to students.* Corwin. https://us.corwin.com/books/how-scaffolding-works-284768

Gage, N.L. (1984). What do we know about teaching effectiveness? *Phi Delta Kappan, 66* (2), p. 87-93).

Garner, J., & Harris, K.R. (2024). Complexity and wicked problems in education. *International Journal of Complexity in Education*. https://ejournals.lib.auth.gr/ijce/article/view/10138

Garwood, J.D., & Brunsting, N.C. (2019). Does Self-Regulated Strategy Development work for all students with and at-risk for emotional and behavioral disorders: A meta-review. *Special Education Research, Policy, and Practice (2019 Issue),* pp. 162-181. https://issuu.com/hofstra/docs/2019_edition_-_special_education_research__policy_

Gillespie Rouse, A., & Kiuhara, S. A. (2017). SRSD in writing and professional development for teachers: Practice and promise for elementary and middle school students with learning disabilities. *Learning Disabilities Research and Practice, 32*(3), 180–188.

Good, T. R. (2024). Reflecting on decades of teacher expectations and teacher effectiveness research: Considerations for current and future research. *Educational Psychologist, 59*(2), 111–141. https://doi.org/10.1080/00461520.2024.2324386

Graham, S. (2018). The writer(s)-within-community model of writing. *Educational Psychologist, 53*, 258–279.

Graham, S. (2019). Changing how writing is taught. *Review of Research in Education, 43*, 277–303.

Graham, S. (in press). What do meta-analyses tell us about the teaching of writing? In C. MacArthur, S. Graham, & J. J. Fitzgerald (Eds.), *Handbook of writing research* (3rd ed.). Guilford.

Graham, S., & Harris, K. R. (1989a). Improving learning disabled students' skills at composing essays: Self-instructional strategy training. *Exceptional Children, 56*, 201–216.

Graham, S., & Harris, K. R. (1989b). A components analysis of cognitive strategy instruction: Effects on learning disabled students' compositions and self-efficacy. *Journal of Educational Psychology, 81*, 353–361.

Graham, S., & Harris, K. R. (1990). Self-instructional strategy development. *Learning Disabilities. Forum, 16*, 15–22.

Graham, S., & Harris, K. R. (1996). Teaching writing strategies within the context of a whole language class. In E. McIntyre & M. Pressley (Eds.), *Balanced instruction: Strategies and skills in whole language* (pp. 155–175). Christopher-Gordon Pubs.

Graham, S., & Harris, K.R. (2005). *Writing better: Effective strategies for teaching students with learning difficulties*. Brookes.

Graham, S., & Harris, K. R. (2009). Almost 30 years of writing research: Making sense of it all with *The Wrath of Khan*. *Learning Disabilities Research & Practice, 24*, 58–68.

Graham, S., & Harris, K. R. (2018a). An examination of the design principles underlying a Self-Regulated Strategy Development study based on the Writers in Community Model. *Journal of Writing Research, 10*, 139–187.

Graham, S., & Harris, K.R. (2018b). Evidence-based writing practices: A meta-analysis of existing meta-analyses. In R. Fidalgo, K.R. Harris, & M. Braaksma (Eds.). *Design principles for teaching effective writing: Theoretical and empirical grounded principles* (pp. 13-37). Brill Editions. https://doi.org/10.1163/9789004270480_003

Graham, S., & Rijlaarsdam, G. (2016). Writing instruction across the world. *Reading & Writing, 29* (5)*.*

Graham, S., Bollinger, A., Booth Olson, C., D'Aoust, C., MacArthur, C., McCutchen, D., & Olinghouse, N. (2018). *Teaching elementary school students to be effective writers: A practice guide (NCEE 2012-4058)*. Institute of Education Sciences, Department of Education. https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/WWC_Elem_Writing_PG_Dec182018.pdf.

Graham, S., Harris, K. R., MacArthur, C., & Santangelo, T. (2018). Self-regulation and writing. In D. Schunk & J. Greene (Eds.), *Handbook of self-regulation of learning and performance* (2nd ed., pp. 138–152). Routledge Publishers.

Graham, S., Harris, K. R., & McKeown, D. (2013). The writing of students with LD and a meta-analysis of SRSD writing intervention studies: Redux. In L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (2nd ed., pp. 405–438). NY: Guilford Press.

Graham, S., Harris, K. R., & Sawyer, R. (1987). Composition instruction with learning disabled students: Self-instructional strategy training. *Focus on Exceptional Children, 20*(4), 1–11.

Graham, S., & Harris, K.R., & Zito, J. (2005). Promoting internal and external validity: A synergism of laboratory experiments and classroom-based research. In G. Phye, D. H. Robinson, J. Levin (Eds.), *Experimental methods for educational intervention* (pp. 235-265). San Diego, CA: Elvieser.

Graham, S., Kim, Y., Cao, Y., Lee, W., Tate, T., Collins, T., Cho, M., Moon, Y., Chung, H., & Olson, C. (2023). A meta-analysis of writing treatments for students in Grades 6 to 12. *Journal of Educational Psychology, 115*, 1004–10027.

Gray, P. (2010). Children teach themselves to read: The unschoolers' account of how children learn to read. *Psychology Today*. http://www.psychologytoday.com/blog/freedom-learn/201002/children-teach-themselves-read

Greene, J. A. (2022). What can educational psychology learn from, and contribute to, scholarship on theory development? *Educational Psychology Review, 34*, 3011–3035.

Greenwood, J.D. (2015). Neobehaviorism, radical behaviorism, and problems of behaviorism. In J.D. Greenwood (Ed.), *A conceptual history of psychology: Exploring the tangled web* (2nd ed.). Cambridge University Press. https://doi.org/10.1017/CBO9781107414914

Harris, K. R. (1982). Cognitive behavior modification: Application with exceptional students. *Focus on Exceptional Students, 15*(2), 1–16. https://doi.org/10.17161/foec.v15i2.7449

Harris, K. R. (1985). Conceptual, methodological, and clinical issues in cognitive-behavioral assessment. *Journal of Abnormal Child Psychology, 13*, 373–390.

Harris, K. R. (1986). The effects of cognitive-behavior modification on private speech and task performance during problem solving among learning disabled and normally achieving children. *Journal of Abnormal Child Psychology, 14*, 63–76.

Harris, K. R. (1990). Paradigmatically induced schizophrenia [Letter to the Editor]. *Journal of Learning Disabilities, 21*, 586–587. https://doi.org/10.1177/002221949002301001

Harris, K. R. (2018). Educational psychology: A future retrospective. *Journal of Educational Psychology, 110*(2), 163–173. https://doi.org/10.1037/edu0000267

Harris, K. R. (2021a). SRSD instructional research for students with or at-risk for LD across the content areas: History and reflections. *Special Issue: Self-Regulated Strategy Development: A Framework for Effective Instruction across the Content Areas, Learning Disabilities Research and Practice, 36*(3), 235–241. https://doi.org/10.1111/ldrp.12260

Harris, K.R. (2021b). Evidence-based writing practices: A close look at obstacles in today's writing instruction. *Literacy Today*, *39* (2), 26-27. http://viewer.zmags.com/publication/7be1f82d#/7be1f82d/28

Harris, K.R, (2022). *APA Division 15 Career Award. Literacy and professional development from the viewpoint of self-regulated strategy development (SRSD): Lessons learned, barriers, and implications*. https://www.youtube.com/watch?v=WlrV5iZz8Fc).

Harris, K.R. (2024). Four reasons writing instruction needs a makeover—And evidence-based solutions, barriers, and paradigm wars (Blog accompanying podcast on *Literacy Matters: Empowered Conversations, S3, #6).* https://www.lwtears.com/blog/four-reasons-writing-instruction-needs-makeover-and-evidence-based-solutions

Harris, K. R., & Graham, S. (1985). Improving learning disabled students' composition skills: Self-control strategy training. *Learning Disability Quarterly, 8*, 27–36.

Harris, K. R., & Graham, S. (1988). Self-instructional strategy training: Improving writing skills among educationally handicapped students. *Teaching Exceptional Children, 20*, 35–37.

Harris, K. R., & Graham, S. (1992). Self-regulated strategy development: A part of the writing process. In M. Pressley, K. R. Harris, & J. T. Guthrie (Eds.), *Promoting academic competence and literacy in school* (pp. 277–309). Academic Press.

Harris, K. R., & Graham, S. (1994). Constructivism: Principles, paradigms, and integration. *The Journal of Special Education, 28*, 233–247.

Harris, K.R., & Graham, S. (1996). *Making the writing process work: Strategies for composition and self-regulation* (2nd ed.). Brookline Books

Harris, K. R., & Graham, S. (1999). Programmatic intervention research: Illustrations from the evolution of self-regulated strategy development. *Learning Disability Quarterly, 22*, 251–262.

Harris, K. R., & Graham, S. (2009). Self-regulated strategy development in writing: Premises, evolution, and the future. *British Journal of Educational Psychology, 6*, 113–135.

Harris, K. R., & Graham, S. (2013). "An adjective is a word hanging down from a noun": Learning to write and students with learning disabilities. *Annals of Dyslexia, 63*, 65–79.

Harris, K. R., & Graham, S. (2016). Self-regulated strategy development in writing: Policy implications of an evidence-based practice. *Policy Insights from Behavioral and Brain Sciences, 3*, 77–84.

Harris, K.R. & Graham, S. (2018). Self-regulated strategy development: Theoretical bases, critical instructional elements, and future research. In R. Fidalgo, K.R. Harris, & Braaksma, M. (Eds.)*, Design principles for teaching effective writing: Theoretical and empirical grounded principles* (pp. 119–151). Brill. https://brill.com/view/book/edcoll/9789004270480/B9789004270480_007.xml

Harris, K. R., & Mason, L. (2023). Self-regulated strategy development: Reading source materials to learn and write. In Z. Philippakos & S. Graham (Eds.), *Writing and Reading Connections: Bridging Research and Practice* (pp. 100–120). Guilford.

Harris, K. R., & McKeown, D. (2022). Overcoming barriers and paradigm wars: Powerful evidence-based writing instruction. *Theory Into Practice, 61*(4), 429–442. https://doi.org/10.1080/00405841.2022.2107334

Harris, K. R., & Pressley, M. (1991). The nature of cognitive strategy instruction: Interactive strategy construction. *Exceptional Children, 57*, 392–405.

Harris, K. R., & Pressley, M. (1994). Integrated approaches to instruction and knowledge construction. *Special issue of Reading and Writing Quarterly: Overcoming learning difficulties, 10.*

Harris, K.R., Camping, A., & McKeown, D. (2023a). A review of research on professional development for multicomponent strategy-focused writing instruction: Knowledge gained and challenges remaining. In F. DeSmedt, R. Bouwer, T. Limpo, & S. Graham (Eds). *Conceptualizing, designing, implementing, and evaluating writing interventions.* Brill Publishing. https://brill.com/display/book/9789004546240/BP000006.xml

Harris, K. R., Graham, S., Brindle, M., & Sandmel, K. (2009). Metacognition and children's writing. In D. Hacker, J. Dunlosky, & A. Graesser (Eds.), *Handbook of metacognition in education* (pp. 131-153). Erlbaum.2011

Harris, K. R., Graham, S., & Mason, L. (2003). Self-regulated strategy development in the classroom: Part of a balanced approach to writing instruction for students with disabilities. *Focus on Exceptional Children, 35*(7), 1–16.

Harris, K. R., Graham, S., & Mason, L. (2006). Improving the writing knowledge, and motivation of stuggling young writers: Effects of self-regulated strategy development with and without peer support. *American Educational Research Journal, 43*(2), 295–340.

Harris, K. R., Graham, S., Mason, L., & Friedlander, B. (2008). *Powerful writing strategies for all students*. Brookes Publishing.

Harris, K.R., Graham, S., Mason, L., McKeown, D., & Olinghouse, N. (2018). Self-regulated strategy development in writing: A classroom example of developing executive function processes and future directions. In L. Meltzer (Ed.), *Executive functioning in education: From theory to practice* (2nd ed., pp. 326-356). Guilford.

Harris, K.R., Graham, S., MacArthur, C., Reid, R., & Mason, L. (2011). Self-regulated learning processes and children's writing. In B. Zimmerman & D.H. Schunk (Eds.), *Handbook of self-regulation of learning and performance* (pp. 187-202). Routledge Publishers.

Harris, K. R., Kim, Y.-S., Yim, S., Camping, A., & Graham, S. (2023b). Yes, they can: Developing transcription skills and oral language in tandem with SRSD instruction on close reading of science text to write informative essays at grades 1 and 2. *Contemporary Educational Psychology, 73*, 1–14.

Harris, K. R., Lane, K. L., Graham, S., Driscoll, S., Sandmel, K., Brindle, M., & Schatschneider, C. (2012). Practice-based professional development for self-regulated strategies development in writing: A randomized controlled study. *Journal of Teacher Education, 63*(2), 103–119.

Harris, K. R., Ray, A., Graham, S., & Houston, J. (2019). Answering the challenge: SRSD instruction for close reading of text to write to persuade with 4th and 5th grade students experiencing writing difficulties. *Reading and Writing: An Interdisciplinary Journal, 32*, 1345–1357. https://doi.org/10.1007/s11145-018-9910-1

Harris, K., Santangelo, T., & Graham, S. (2010). Metacognition and strategy instruction in writing. In H. S. Waters & W. Schneider (Eds.), *Metacognition, strategy use, and instruction* (pp. 226–256). Guilford.

Harris, K.R., Schmidt, T., & Graham, S. (1998). Every child can write: Strategies for composition and self-regulation in the writing process. In K. R. Harris, S. Graham, & D. Deshler (Eds.), *Advances in teaching and learning. Vol. 2: Teaching every child every day: Learning in diverse schools and classrooms* (pp. 131-167). Brookline Books.

Harris, K.R., Wong, B.Y.L., & Keogh, B. (1985). Cognitive-behavior modification with children: A critical review of the state-of-the-art. Special issue of the *Journal of Abnormal Child Psychology, 13.*

Harris-Garrison, K. R. (1980). The sustained effects of cognitive modification and informed teachers on children's communication apprehension. *Communication Quarterly, 24*, 47–57.

Harris-Garrison, K. R., & Brown, R. (1982). Cognitive modification and informed teacher treatments for shy children. *Journal of Experimental Education, 50*, 137–144.

Horner, R. H., & Sugai, G. (2015). School-wide PBIS: An example of applied behavior analysis implemented at a scale of social importance. *Behavior Analysis Practice, 8*, 80–85.

Imbler, A. C., Clark, S. K., Young, T. A., & Feinauer, E. (2022). Teaching second-grade students to write expository text: Does a holistic or analytic rubric produce more meaningful results? *Writing Assessment, 55*, 1–12. https://doi.org/10.1016/j.asw.2022.100676

Jacobson, M. J., Kapur, M., & Reimann, P. (2016). Conceptualizing debates in learning and educational research: Toward a complex system conceptual framework of learning. *Educational Psychologist, 51*(2), 210–218.

Kanfer, F. H., & Karoly, P. (1972). Self-control: A behavioristic excursion into the lion's den. *Behavior Theraphy, 3*, 398–416.

Karpov, Y. V. (2014). *Vygotsky for educators*. Cambridge University Press.

Kim, Y.-S. G., Harris, K. R., Goldstone, R., Camping, A., & Graham, S. (2024). The science of teaching reading is incomplete without the science of writing: A randomized control trial of integrated teaching of reading and writing. *Scientifc Studies of Reading*. Online first: https://doi.org/10.1080/10888438.2024.2380272

Kirkland, D. E. (2019). *No small matters: Reimagining the use of research evidence from a racial justice perspective*. William T. Grant Foundation. https://wtgrantfoundation.org/wp-content/uploads/2019/12/David-E.-Kirkland-2019-WTG-Digest.pdf

Kiuhara, S. A., Levin, J. R., Tolbert, M., O'Keeffe, B. V., O'Neill, R. E., & Jameson, M. J. (2023). Teaching argument writing in math class: Challenges and solutions to improve the performance of 4th and 5th graders with disabilities. *Special issue on teaching writing. Reading and Writing: An Interdisciplinary Journal.* https://doi.org/10.1007/s11145-023-10459-7

Kiuhara, S., Harris, K. R., Graham, S., Hacker, D. J., Brindle, M. E., & McKeown, D. (2024). An RCT of PBPD and expert support for classwide SRSD instruction on timed narrative writing at 4th grade: Critical implications. *Reading & Writing: An Interdisciplinary Journal, Online First.* https://doi.org/10.1007/s11145-023-10507-2

Koster, M., Tribushinina, E., Jong, P., & van Bergh, H. (2015). Teaching children to write: A meta-analysis of writing intervention research. *Journal of Writing Research, 7*(2), 249–274.

Lamy, C. E. (2013). *American children in chronic poverty: Complex risks, benefit-cost analyses, and untangling the knot*. Rowman & Littlefield.

Leahey, T. H. (1992). The mythical revolutions of American psychology. *American Psychologist, 47*(2), 308–318. https://doi.org/10.1037/0003-066X.47.2.308

Losinski, M., Cuenca-Carlino, Y., Zablocki, M., & Teagarden, J. (2014). Examining the efficacy of Self-Regulated Strategy Development for students with emotional or behavioral disorders: A meta-Analysis. *Behavioral Disorders, 40,* 52-67.

Lewin, K. (1939). Field theory and experiment in social psychology: Concepts and methods. *American Journal of Sociology, 44*, 868–896.

Luria, A. (1959). The directive function of speech in development. *Word, 15*(2), 341–352. https://doi.org/10.1080/00437956.1959.11659703

Luscombe, B. (2022). Inside the massive effort to change the way students are taught to read. *TIME, US Education, online,* https://time.com/6205084/phonics-science-of-reading-teachers/

Maier, N. R. F. (1960). Maier's Law. *American Psychologist, 15*, 208–212.

Marchand, G. C., & Hilpert, J. C. (2024). Contributions of complex system approaches, perspective, models, and methods in educational psychology. In P. A. Schutz & K. R. Muis (Eds.), *Handbook of Educational Psychology* (4th ed., pp. 139–161). Taylor & Francis.

Mason, L. H. (2004). Explicit self-regulated strategy development versus reciprocal questioning: Effects on expository reading comprehension among struggling readers. *Journal of Educational Psychology, 96*(2), 283–296.

Mason, L.H. (2018). Writing to learn instruction that works. In R. Fidalgo, and M. Braaksma (Eds.), *Design principles for teaching effective writing* (pp. 66-86). Brill. https://doi.org/10.1163/9789004270480_005

Mason, L.H., & Basile, J. (2023). Building writing skills for summaries and quick writes. In X. Liu, M. Hebert, & R.A. Alves (Eds.), *The hitchhiker's guide to writing research: A festschrift for Steve Graham* pp. 169-189*.* Springer.

Mason, L., Reid, R., Hagaman, J. (2012). *Building comprehension in adolescents: Powerful strategies for improving reading and writing in content areas.* Brookes. https://products.brookespublishing.com/Building-Comprehension-in-Adolescents-P261.aspx

Mason, L. H., Davison, M. D., Hammer, C. S., Miller, C. A., & Glutting, J. J. (2013). Knowledge, writing, and language outcomes for a reading comprehension and writing intervention. *Reading and Writing. In Interdisciplinary Journal, 26*(7), 1133–1158. https://doi.org/10.1007/s11145-012-9409-0

McCormick, C. B. (2003). Metacognition and learning. In W. M. Reynolds & G. E. Miller (Eds.), *Handbook of psychology: Educational Psychology* (Vol. 7, pp. 79–102). Wiley.

McKeown, D., FitzPatrick, E., Brown, M., Brindle, M., Owens, J., & Hendrick, R. (2019a). Urban teachers' implementation of SRSD for persuasive writing following practice-based professional

development: Positive effects mediated by compromised fidelity. *Reading and Writing: An Interdisciplinary Journal, 32*, 1483–1506. https://doi.org/10.1007/s11145-018-9864-3

McKeown, D., Brindle, M., Harris, K. R., Sandmel, K., Steinbrecher, T. D., Graham, S., Lane, K. L., & Oakes, W. P. (2019b). Teachers' voices: Perceptions of effective professional development and classwide implementation of self-regulated strategy development in writing. *American Educational Research Journal, 56*, 753–791.

McKeown, D., FitzPatrick, E., Ennis, R. P., & Sanders, S. (2021). Self-regulated strategy development: A framework for effective instruction across the content areas. *Learning Disabilities Research and Practice, 36*(3), 184–187. https://doi.org/10.1111/ldrp.12256

Meichenbaum, D. (1977). *Cognitive behavior modification: An integrative approach*. Plenum.

Merluzzi, T.V., Glass, C.R., & Genest, M. (Eds.). (1981). *Cognitive assessment.* Guilford.

Middleton, J.A., Jansen, A., & Goldion. G.A. (2017). The complexities of mathematical engagement: Motivation, affect, and social interactions. In J. Cai (Ed.), *Compendium for research in mathematics education* (pp. 667-699). National Council for Teachers of Mathematics. https://www.nctm.org/Store/Products/Compendium-for-Research-in-Mathematics-Education/

Mohan, L., Lundeberg, M. A., & Reffitt, K. (2008). Studying teachers and schools: Michael Pressley's legacy and directions for future research. *Educational Psychologist, 43*(2), 107–118. https://doi.org/10.1080/00461520801942292

Moore, J. (1996). On the relation between behaviorism and cognitive psychology. *The Journal of Mind and Behavior, 17*(4), pp. 345-367. https://www.jstor.org/stable/43853710

Moore, J. (2009). Why the radical behaviorist conception of private events is interesting, relevant, and important. *Behavior and Philosophy, 37*, 21-37. https://www.jstor.org/stable/41472420

Moore, J. (2011). Methodological behaviorism as a radical behaviorist views it. *Behavior and Philosophy, 39*, 145–202. https://www.behavior.org/resources/732.pdf

National Association of Colleges and Employers. (2019). *Job outlook 2019.* https://ww1.odu.edu/content/dam/odu/offices/cmc/docsc/nace/2019-nace-job-outlook-survey.pdf

National Center for Education Statistics. (2003). *The nation's report card: Writing 2002*. Institute of Education Science, U.S. Department of Education. https://nces.ed.gov/nationsreportcard/pdf/main2002/2003529.pdf

National Center for Education Statistics. (2012). *The nation's report card: Writing 2011*. Institute of Education Sciences, U.S. Department of Education. https://nces.ed.gov/nationsreportcard/pdf/main2011/2012470.pdf

Neelen, M., & Kirschner, P. A. (2020). Goodbye growth mindset, hello efficacy and attribution theory. *3-Star Learning Experiences: An evidence-informed blog for learning professionals.* https://3starlearningexperiences.wordpress.com/2020/06/02/goodbye-growth-mindset-hello-efficacy-and-attribution-theory/

Pearson, P. D., & Gallagher, M. C. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology, 8*(3), 317–344. https://doi.org/10.1016/0361-476X(83)90019-X

Pondiscio, R. (2012). How self-expression damaged my students. *The Atlantic, online,* https://www.theatlantic.com/national/archive/2012/09/how-self-expression-damaged-my-students/262656/

Pressley, M., & Harris, K. R. (1990). What is really known about cognitive strategy instruction. *Educational Leadership, 48*, 31–34.

Pressley, M., & Harris, K.R. (2006). Cognitive strategies instruction: From basic research to classroom instruction. In P.A. Alexander & P. Winne (Eds.), *Handbook of educational psychology* (2nd ed., pp. 265-286). MacMillan.

Pressley, M., Borkowski, J.G., & Johnson, C.J. (1987a). The development of good strategy use: Imagery and related mnemonic strategies. In M.A. McDaniel & M. Pressley (Eds.), *Imagery and related mnemonic processes: Theories, individual differences, and applications* (pp. 274-297). Springer. https://doi.org/10.1007/978-1-4612-4676-3_13

Pressley, M., Borkowski, J.G., & Schneider, W. (1987b). Cognitive strategies: Good strategy users coordinate metacognition and knowledge. In R. Vasta & G. Whitehurst (Eds.), *Annals of child development,* Vol. 5 (pp. 89-129).

Pressley, M., Harris, K. R., & Marks, M. B. (1992). But good strategy instructors are constructivists!! *Educational Psychology Review, 4*, 3–31.

Pressley, M., Schuder, T., SAIL Faculty and Administration, Bergman, J. L., & El-Dinary, P. B. (1992). A researcher-educator collaborative interview study of transactional comprehension strategies instruction. *Journal of Educational Psychology, 84*, 231–246.

Pressley, M., El-Dinary, P.B., & Brown, R. (1994). Transactional instruction of reading comprehension strategies. In J. Mangieri & C. Collins (Eds.), *Creating powerful thinking in teachers and students: Diverse perspectives* (pp. 112-139).

Pressley, M., Dolezal, S.E., Raphael, L.M., Mohan, L., Roehrig, A.D., & Bogner, K. (2003). *Motivating Primary-Grade Students.* Guilford.

Prior, P. (2006). A sociocultural theory of writing. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of Writing Research* (pp. 54–66). Guilford Press.

Ray, A. B., & Mason, T. E. (in press). Teaching middle school students with learning disabilities argumentative writing using SRSD with technology supports. *Journal of Research in Special Educational Needs.*

Ray, A.B., Torres, C., & Yucheng, C. (2023). Improving informative writing in inclusive and linguistically-diverse elementary classes through self-regulated strategy development. *Exceptionality, 31* (5), p. 319-343. Routledge.

Reid, R., Lienemann, T.O., & Hagaman, J.L. (2013). *Strategy instruction for students with learning disabilities* (2nd ed.)*.* Guilford.

Rosenshine, B. (1970). Enthusiastic teaching: A research review. *School Review, 78*, 499–514. https://doi.org/10.1086/442929

Rosenshine, B. (2012). Principles of instruction: Research based strategies that all teachers should know. *American Educator*, Spring, p. 12-39. https://eric.ed.gov/?id=EJ971753

Routman, R. (1995). Donald Graves: Outstanding educator in the language arts. *Language Arts, 72*, 518–525.

Salas, N., Birello, M., & Ribas, T. (2021). Effectiveness of an SRSD writing intervention for low- and high-SES children. *Reading and Writing, 34*, 1653–1680. https://doi.org/10.1007/s11145-020-10103-8

Sanders, S., Losinski, M., Ennis, R. P., White, W., Teagarden, J., & Lane, J. (2019). A meta-analysis of self-regulated strategy development (SRSD) reading interventions to improve the reading comprehension of students with disabilities. *Reading & Writing Quarterly, 35*(4), 339–353. https://doi.org/10.1080/10573569.2018.1545616

Sawyer, R. J., Graham, S., & Harris, K. R. (1992). Direct teaching, strategy instruction, and strategy instruction with explicit self-regulation: Effects on learning disabled students' composition skills and self-efficacy. *Journal of Educational Psychology, 84*, 340–352.

Schumaker, J. B., Deshler, D. D., Alley, G. R., Warner, M. W., & Denton, P. H. (1982). Multipass: A learning strategy for improving reading comprehension. *Learning Disability Quarterly, 5*(3), 295–304.

Sexton, M., Harris, K. R., & Graham, S. (1998). Self-regulated strategy development and the writing process: Effects on essay writing and attributions. *Exceptional Children, 64*(3), 295–311.

Stokes, T., & Baer, D. (1977). An implicit technology of generalization. *Journal of Applied Behavior Analysis, 10*(2), 349–367.

Shvarts, A., & Bakker, A. (2019). The early history of the scaffolding metaphor: Bernstein, Luria, Vygotsky, and before. *Mind, Culture, and Activity, 26*(1), 4–23. https://doi.org/10.1080/10749039.2019.1574306

Skinner, B. F. (1953). *Science and human behavior*. New York: Macmillan.

Skinner, B. F. (1974). *About behaviorism*. Alfred A: Knopf.

Sweller, J. (2023). The development of cognitive load theory: Replication crises and incorporation of other theories can lead to theory expansion. *Educational Psychology Review, 35*, 95. https://doi.org/10.1007/s10648-023-09817-2

Vygotsky, L. S. (1962). *Thought and language.* (E. Hanfmann & G. Vakar, Eds. and trans.). MIT Press. (originally published, 1934)

Vygotsky, L. S. (1978). *Mind in society. The development of higher psychological processes.* Edited by M. Cole, V. John-Steiner, S. Scribner & E. Souberman. Harvard University Press.

Webb, S., Massey, D., Goggans, M., & Flajole, K. (2019). Thirty-five years of the gradual release of responsibility: Scaffolding toward complex and responsive teaching. *The Reading Teacher, 73* (75-83).

Wentzel, K. R. (2021). Open science reforms: Strengths, challenges, and future directions. *Educational Psychologist, 56*(2), 161–173.

Wertsch, J. V. (1979). From social interaction to higher psychological processes, a clarification and application of Vygotsky's theory. *Human Development, 22*, 1–22.

Wijekumar, K., Beerwinkle, A., Harris, K. R., & Graham, S. (2019). Etiology of teacher knowledge and instructional skills for literacy at the upper elementary grades. *Annals of Dyslexia, 69*(10), 5–20.

Wijekumar, K., Harris, K. R., Graham, S., & Lie, P. (2022). A teacher technology tango shows strong results on 5th graders persuasive writing. *Educational Technology Research and Development, 70*(4), 1415–1439. https://doi.org/10.1007/s11423-022-10117-9

Wijekumar, K., Harris, K. R., Graham, S., & Meyer, B. (2017). A web-based intelligent tutor for supporting elementary classroom teachers in persuasive writing. In S. Crossley & D. McNamara (Eds.), *Handbook of Educational Technologies for Literacy* (pp. 294–301). Taylor & Francis.

Wong, B. Y. L., Harris, K. R., & Graham, S. (1991). Academic applications of cognitive-behavioral programs with learning disabled students. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive behavioral procedures* (pp. 245–275). Guilford Press.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem-solving. *Journal of Child Psychology and Psychiatry, 17*(2), 89–100. https://doi.org/10.1111/jcpp.1976.17.issue-2

Woolfolk, A. E., Winne, P. H., & Perry, N. E. (2012). *Educational Psychology*. Pearson.

Zimmerman, B., & Reisemberg, R. (1997). Becoming a self-regulated writer: A social cognitive perspective. *Contemporary Educational Psychology, 22*, 73–101.

Zimmerman, B. J., & Schunk, D. H. (1989). *Self-regulated learning and academic achievement: Theory, research, and practice.* Springer-Verlag Publishing. https://doi.org/10.1007/978-1-4612-3618-4

Zimmerman, B., & Schunk, D. (2011). *Handbook of self-regulated learning and performance.* Routledge/Taylor & Francis Group.

Zito, J., Adkins, M., Gavins, M., Harris, K. R., & Graham, S. (2007). Self-regulated strategy development: Relationship to the social-cognitive perspective and the development of self-regulation. *Reading and Writing Quarterly, 23*, 77–95.