The Influence of Professional Development for Special Education Teachers: Self-Regulated Strategy Development in Writing for Students With Emotional Behavioral Disorders

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Dedication

To my husband, David, my parents, Chuck and Jeanne, my sister, Katrina, and my mother-in-law, Carol who fills my life with love and makes all things possible.

Acknowledgments

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University of Washington

Abstract

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Students with emotional behavioral disorders (EBD) are well known for their challenging, demanding, unpredictable, and difficult behaviors. Many students with EBD exhibit significant academic deficits, especially in writing. Writing instruction is challenging for teachers because they lack knowledge of the writing process, strategies, and resources to teach writing. Professional development (PD) and coaching provides teachers with opportunities for sustained learning of content and pedagogy, which can result in improved student outcomes. In this study, a multiple baseline across participant design was used to examine the effects of PD and coaching on special education teachers' dispositions, instructional practice, and students' writing performance. Special education teachers were able to learn an effective strategy to teach students with EBD how to write persuasive essays. Results indicate that PD and coaching was effective in increasing the percentage of writing instructional behaviors teachers used to teach writing. Students showed improved outcomes in the number of persuasive elements they included in their essays. The results of this study suggest PD and coaching is a promising way to provide teachers with opportunities to learn how to teach an evidence-based writing instructional method.

Table of Contents

List of Tables

List of Figures

CHAPTER ONE: Introduction and Statement of the Problem

Students labeled with emotional behavioral disorders (EBD) are well known for their challenging, demanding, unpredictable, and difficult to manage behaviors. Students with EBD exhibit behaviors patterns that may interfere with academic instruction. Levy and Chard (2001) highlight this dilemma by stating, "So much attention is devoted to managing disruptive behaviors and dealing with emotional crises that the questions of what students should be taught and how they should be taught are often not afforded careful or even sufficient consideration" (p. 439). It is estimated that more than 2% of the school population demonstrates behavior patterns indicative of EBD (Lane, Harris, Graham, Driscoll, Sandmell, Morphy. . . Schatschneider, 2011). Ultimately, these children miss out on learning opportunities and their behavior significantly impairs their ability to be successful in school.

The classification of a student with *emotional disturbance* (which will be referred to here as EBD) is defined by Individuals with Disabilities Education Improvement Act (IDEIA). IDEIA defines emotional disturbance as follows:

> (i) Emotional disturbance means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance: (a) an inability to learn that cannot be explained by intellectual, sensory, or health factors; (b) an inability to build or maintain relationships with peers or teachers; (c) inappropriate feelings or behaviors under normal circumstances; (d) a general pervasive mood of unhappiness or depression; (e) tendency to develop physical symptoms of fears associated with personal or school problems; (ii) emotional disturbance includes

> schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance under paragraph (c) (4) (i) of this section. (Code of Federal Regulations, Title 34, Section 300.7(b)(9))

Students with EBD are most often recognized by exhibition of externalizing behaviors such as verbal and physical aggression, defiance, and impulsivity (Kauffman & Landrum, 2009). While not as easily noticed by teachers and parents, students with EBD may also demonstrate internalizing behavior patterns such as such as anxiety, depression, and somatic complaints (Little, 2007). The latter behavior patterns pose additional concerns to educators; these students are less likely to be recognized during early years, thereby delaying supports until these behavior patterns become more defined and serious (Gresham, Lane, MacMillan, & Bocian, 1999; Walker, Ramsey, & Gresham, 2004). Students who exhibit internalizing or externalizing behaviors have difficulty with self-regulation of emotional responses, which places them at risk for a host of negative outcomes, including impaired relationships with teachers and peers, school failure, underemployment and unemployment, and delinquent behaviors (Bullis & Yovanoff, 2006; Carter, Lane, Pierson, & Glaeser, 2006; Wagner & Davis, 2006). In fact, nearly three quarters (73%) of secondary youths with EBD have been suspended or expelled from school (Bradley, Henderson, Monfore, 2004) and the dropout rate for this population of students is higher (52%) compared to students with other disability across all categories (31%; U.S. department of Education, 2009).

In addition to other negative outcomes, students labeled with EBD are frequently characterized by academic deficits that tend to worsen over time (Anderson, Kutash, & Dychnowski, 2001; Nelson, Benner, Lane, & Smith, 2004). Students with EBD are among the

least likely to receive mostly A and B letter grades (28%) and are most likely to receive mostly D's and F's (14%) in secondary school (Bradley et al., 2004). Nelson, Benner, Lane, and Smith (2004) found that students with EBD experience significant academic deficits across all content areas. In their cross-sectional study of a random sample of 155 K-12 students with EBD receiving special education, they found that 83% of students with EBD scored below the mean in reading and math and at the 15th percentile in written language (Nelson et al.). Interestingly, they also found that writing deficits were more pronounced for students with externalizing versus internalizing behavior patterns. Poor writing skills place these children academically at risk, not only during elementary years, but in secondary school as well. Considering students with EBD have the poorest academic performance, transition outcomes, and the highest drop out rates (Ackerman, 2006; Bradley et al., 2004), research efforts should focus on interventions that target and support the development of academic skills, especially written expression skills for students with EBD.

Importance of Writing

Like reading, writing is one of the primary cornerstones on which content learning is built (Adams, Treiman, & Pressley, 2000). Students demonstrate their knowledge through writing and it provides a powerful mechanism for communication, self-expression, and self-reflection (Graham, 2006a). Writing is an important expressive skill and component of literacy development. Students communicate in writing what they know via written assignments, assessments, and essays or reports (Graham & Perin, 2007; Shanahan, 2006). It is also used to synthesize and evaluate information and may have an important impact on students' development of content knowledge, including their ability to integrate

knowledge and think critically (Bangert, Drowns, Hurley, & Wilkinson, 2004; Shanahan, 2004). In other words, writing plays an important role in learning. Writing about one's experiences and feelings is beneficial psychologically and physiologically (Smyth, 1998). Furthermore, being able to write effectively is not limited to academic school tasks. The ability to develop and express ideas in writing is essential for the professional and nonprofessional workplace and has the potential to directly influence hiring and promotional decisions.

Effective writing skills are an essential aspect of elementary and secondary education (National Commission on Writing, 2003). Because writing can represent knowledge, it is used as a primary instrument for evaluating academic competence (Graham, MacArthur, & Fitzgerald, 2007). Failure to gain the writing abilities necessary for satisfactory schoolwork can put children at risk for behavioral problems, chronic school failure, and school dropout (Berninger, Abbott, Jones, Wolf, Gould, Anderson-Youngstrom, . . . Apel, 2006). National estimates of students' writing ability in the United States suggest a substantial need for improvement. The National Assessment of Educational Progress (NAEP), published by the U.S. Department of Education, reports on national writing data from fourth, eighth, and twelfth-grade students. Results from these studies revealed that in 2002, 72% of fourth grade students were unable to write at the Proficient level (e.g., a level that displays mastery of grade level expectations; Persky, Daane, & Jin, 2003). In 2007, 67% of eighth-, and 76% of twelfth-grade students were unable to write at the Proficient level (Salahu-Din, Persky, & Miller, 2008). These writing difficulties were exacerbated for students of minority backgrounds. Among the fourth grade assessed, 86% of African American students, 83% of Hispanic students, and 86% of

American Indian/Alaska Native students performed below the Proficient level. For students with disabilities, the outcomes are more alarming, only 6% of students with disabilities had proficient writing skills (Persky et al., 2003). It is well established that a substantial percentage of students throughout the nation are writing at a level of inadequacy, including students with EBD.

Writing is particularly challenging for students with EBD due to their lack of skills and strategies for writing (Tindal & Crawford, 2002). Students with EBD who demonstrate poor writing skills exhibit an inability to self-regulate the complex writing process (Graham, Harris, MacArthur, & Fink-Chorzempa, 2003), lack knowledge of the writing process (Graham, Schwartz, & MacArthur, 1993), and develop a negative attitude about writing and themselves as writers (Harris & Graham, 1999). Previous studies of writing interventions for students with EBD have primarily focused on spelling and punctuation (Langone, Levine, Clees, Malone, & Koorland, 1996; McLaughlin, 1992) or simple paragraph writing (Glomb & West, 1990; Schloss, Harriman, & Pfefier, 1985). More recent research suggests that the most common writing activities that students engage in are writing short answer responses to homework, responding to material read, completing worksheets, and summarizing material read, writing journal entries, and making lists (Graham, 2008). The lack of writing studies dedicated to improving the writing skills of students with EBD is alarming given that like reading, writing is critical to school success. Writing is one of the major mechanisms by which students demonstrate their knowledge and it provides a powerful tool for communication and learning; without the ability to transform thoughts, experiences and ideas into written words, there is a strong likelihood that students with

EBD are in danger of losing touch with the joy of inquiry, the sense of intellectual curiosity, and the satisfaction of acquiring wisdom that are the touchstones of humanity.

Barriers to Effective Writing Instruction for Students with EBD

Because of its complexity (National Writing Project & Nagin, 2006; Troia & Graham, 2003), writing instruction is challenging for many teachers and can create anxiety, avoidance, and frustration for those who try to implement it. Lack of knowledge about the writing process, instructional strategies, and few resources are barriers that interfere with writing instruction (Troia & Maddox, 2004). Teachers often feel unprepared to help children develop proficient writing skills to perform well on high stakes tests (Troia & Maddox) and in a nation-wide study, only 28% of primary-grade teachers reported that their college certification program did an exceptional job in preparing them to teach writing, while 28% indicated their preparation program was inadequate, and 44% reported it was adequate (Cutler & Graham, 2008). Even with outstanding professional development opportunities and intensive support, teachers still struggle to implement content learned from professional development workshops (Troia, 2007). Unfortunately, similar data do not exist for special education teachers.

Many students who find writing challenging are in classrooms that do not effectively incorporate best practices. For example, some classroom teachers focus almost exclusively on transcription skills, such as handwriting and spelling, with few opportunities for authentic writing of whole texts (Palinscar & Klenk, 1992). Other teachers provide instruction on the writing process, but little time is devoted to teaching critical writing skills and strategies because it is assumed these skills will be mastered through incidental teaching and learning (Westby & Costlow, 1991). Additionally, some children attend classes

in which virtually no time is devoted to either writing or writing instruction (Christenson, Thurlow, Ysseldyke, & McVicar, 1989). Even in classrooms in which teachers report text transcription skills in the context of meaningful, authentic, composing activities, it is likely that this type of instruction is not robust enough to meet the needs of an increasingly diverse student population in a high standards-based educational context (Pressley, Rankin, & Yokoi, 1996; Pressley, Yokoi, Rankin, Wharton-McDonald, & Hampston, 1997; Wray, Medwell, Fox, & Poulson, 2000). This evidence highlights the need for substantially more individualized and explicit training for teachers in writing instruction given the less than optimal writing instruction that has been reported in classrooms (Graham & Harris, 2002; Troia, 2005; Wray, Medwell, Fox, & Poulson, 2000). This type of training may be most important for teachers of students that are likely to exhibit chronic and pernicious writing problems such as students labeled with EBD. Without such training, there is a strong likelihood that students with EBD will continue to experience academic deficits in writing.

Historically, special education teachers have entered classrooms after completing traditional preparation programs that do not focus on content (Brownell, Leko, Kamman, & King, 2008; Brownell, Bishop, Gersten, Klingner, Penfield, Dimino, . . . Sindelar, 2009). Teacher preparation programs often inadequately prepare teachers to provide academic instruction to students with EBD (Oliver & Reschly, 2010; Wehby, Lane, & Falk, 2003). These preparation programs often cover education in Grades K to 12 and focus on general instructional practices and behavior management (Leko & Brownell, 2009). In fact, special education teachers report lack of knowledge, confidence, and/or skill to provide effective academic instruction and behavioral supports to students with EBD (Farley, Torres, Cat-Uyen, Wailehua, & Cook, 2012). Teacher education scholars recognize that special

education teachers may not have the content knowledge of general education teachers and recommend that school based collaboration should be used as a vehicle to bridge the knowledge base of both special and general education teachers (Leko & Brownell, 2009). However, collaborative PD efforts fail to recognize that special education teachers may require more training in addition to school based collaboration with general educators (Brownell et al., 2008; Pugach, 2005). Professional development efforts must address special education teachers' particular learning needs, their experiences, and contexts in which they work.

Summary

Students with EBD exhibit behavior problems that often interfere with academic instruction. As well, students with EBD often lack the necessary skills and strategies to write. Special education teachers frequently lack instructional methods to teach writing to students with EBD, perhaps due to inadequate pre-and-in-service preparation in writing instruction. Special education teachers must be trained to use the most powerful and efficacious interventions to teach students with EBD how to write. This requires teachers to have the necessary content and pedagogical knowledge at their disposal if teachers are to offer any hope of reversing the historically poor outcomes that student's with EBD experience.

Chapter 2 provides a thorough review of literature, including the theoretical underpinnings of the study, research on writing interventions using SRSD for students with EBD, research on major elements of effective professional development, and a conceptual model for the present study. Chapter 3 describes the methodology and procedures of the

study while Chapter 4 provides the results of the study. Chapter 5 provides a discussion of the results.

CHAPTER TWO: Literature Review

Theoretical Framework and Literature Review: Writing Intervention

In this chapter, a description of several cognitive writing models is provided. A review of literature on Self Regulation Strategy Development (SRSD) writing interventions for students with EBD is discussed. Self-regulation procedures are considered a key component of the current study and support for their use with students with EBD is warranted. Then, a review of research on the current status of academic interventions for students with EBD is presented. In the second section of this chapter, a review of research on professional development is provided. Studies from the National Writing Project that explored the influence of writing project training on teacher practice and on student writing performance are reviewed. Finally, effective components of professional development are examined. These components provide a conceptual framework for the current study. This review serves three important purposes for the current study. First, it establishes the need for academic interventions in the area of writing for students with EBD. Second, it justifies the importance of training teachers how to effectively educate this unique group of students that has been absent in much of the past literature. Finally, it serves as the foundation of the conceptual model in the current study.

Theoretical Models of Cognitive Processes in Writing

The instinct for human beings to express their feelings, their thoughts, and their experiences in some lasting form has been with us for a very long time (Carnegie Corporation, 2010). Writing fluently is a cognitively demanding process for all writers, especially students with EBD. Cognitive psychology has examined the specific processes involved in the development of children's writing, which, according to Graham (2006b), has

revolutionized the way writing is taught. Cognitive models define writing in terms of problem-solving (McCutchen, Teske, & Bankston, 2008). The following sections review some of the foundational models of cognitive writing processes that emphasize the cognitive skills that underlie successful writing in an academic setting.

Hayes & Flower Model (1980)

Hayes and Flower (1980) proposed a process-based model of skilled writing based on their observations of participants composing using "think alouds." The model attempted to classify the various activities that occur during writing and their relationships to the task environment and to the internal knowledge state of the writer. See *Figure* 1.

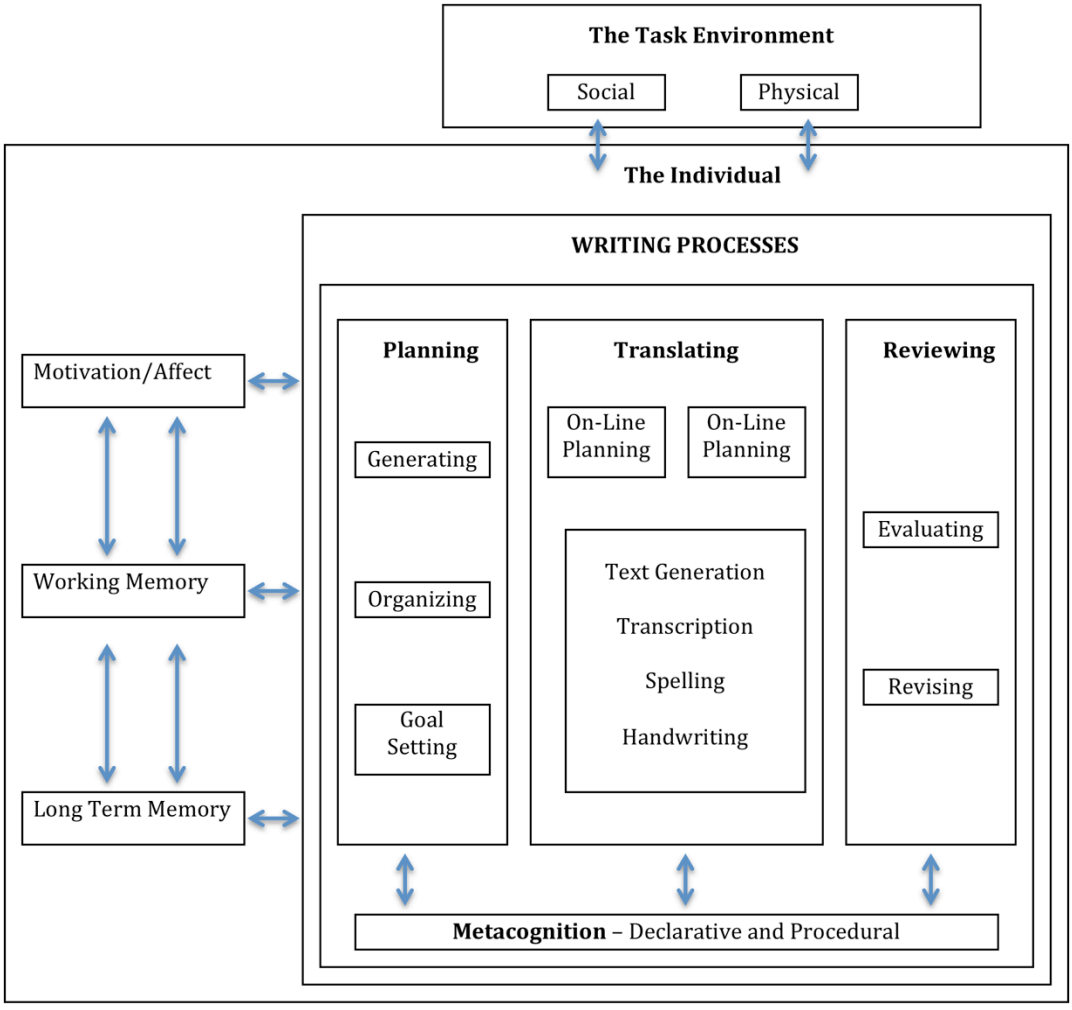

Figure 1. Hayes and Flower Model of Writing Processes of Skilled Writers

The Hayes and Flower model (1980) identified three cognitive processes under the writer's control: *the task environment, the cognitive process,* and the *writers' long-term memory.* The first element, *task environment* comprises the text produced and the various elements of the writing task (including topic, audience, and motivational elements). The second component proposed by Hayes and Flower includes the *cognitive processes* that are used during the writing process. These processes often include the self-regulation procedures of setting goals, generating and organizing ideas, along with planning, transcribing, reviewing, and improving the written text (Hayes & Flower). The last component, the writer's *long-term memory*, refers to knowledge about the topic, audience, and stored writing plans (e.g., learned writing schemas). Hayes and Flower (1980) identified four major writing processes: planning, translating, reviewing, and monitoring. Planning includes sub-activities of generating (coming up with ideas), organizing (arranging those ideas logically in one's head), and goal setting (determining what effects one wants to achieve and modifying one's generating and organizing activities to achieve local or global goals (Hayes & Flower). Translating takes the conceptual plan for the document and produces text expressing the planned content. In reviewing, the text produced so far is read, with modifications to improve it (revise) or correct errors (proofread). Monitoring includes metacognitive processes that link and coordinate planning, translating, and reviewing (Hayes & Flower). Each of these processes is assumed to be under direct control of the writer and is not considered a linear process. For example, a writer may read what was written and detect how he or she strayed away from the intended goal. Writing involves complex problem solving, in which information is processed by a system of function-specific components (Hayes & Flower).

Hayes and Flower (1980) provide a cognitive account of the writing process, and elaborations of that model over the years have incorporated additional social and affective components (Hayes, 1996; 2006). Hayes (1996) reorganized the processes originally described as planning, translating, and reviewing (in Hayes & Flower, 1980). Planning was included under the broader label *reflection*, which encompasses problem solving (including planning), decision-making, and inferencing (McCutchen, 2011). Translating was retitled text production and has been elaborated considerably by Chenoweth and Hayes (2001; see also Berninger & Swanson, 1994). The original reviewing process was expanded to include *text interpretation* and embedded reflection and *text production* (see also Hayes, 2004). The 1996 model added working memory and specifications of affective goals, predispositions, beliefs, and the social environment.

Writing requires a significant amount of self-regulation and effort for adults and children (Graham, Harris, & Troia, 1998). The Hayes and Flower model of writing is strongly influenced by self-regulatory behavior. Their model views writing as a goal directed action in which the writer guides the process by "identifying and organizing goals and sub-goals for what to do and say" (Graham & Harris, 1994, p.204). The writer directs the process from start to finish and utilizes his or her personal observations, judgments, and reactions as a guide.

Knowledge Telling & Transforming Models (Bereiter & Scardamalia, 1987)

Bereiter and Scardamalia (1987) proposed that skilled writers often "problematize" a writing task, adopting a strategy they called *knowledge telling*. They suggest that children translate the writing task into what they know about a topic, with one idea prompting the next. Their model is very similar to Hayes and Flower (1980) and includes three

components*:* mental representation of the task, long-term memory, and knowledge telling process. See Figure 2.

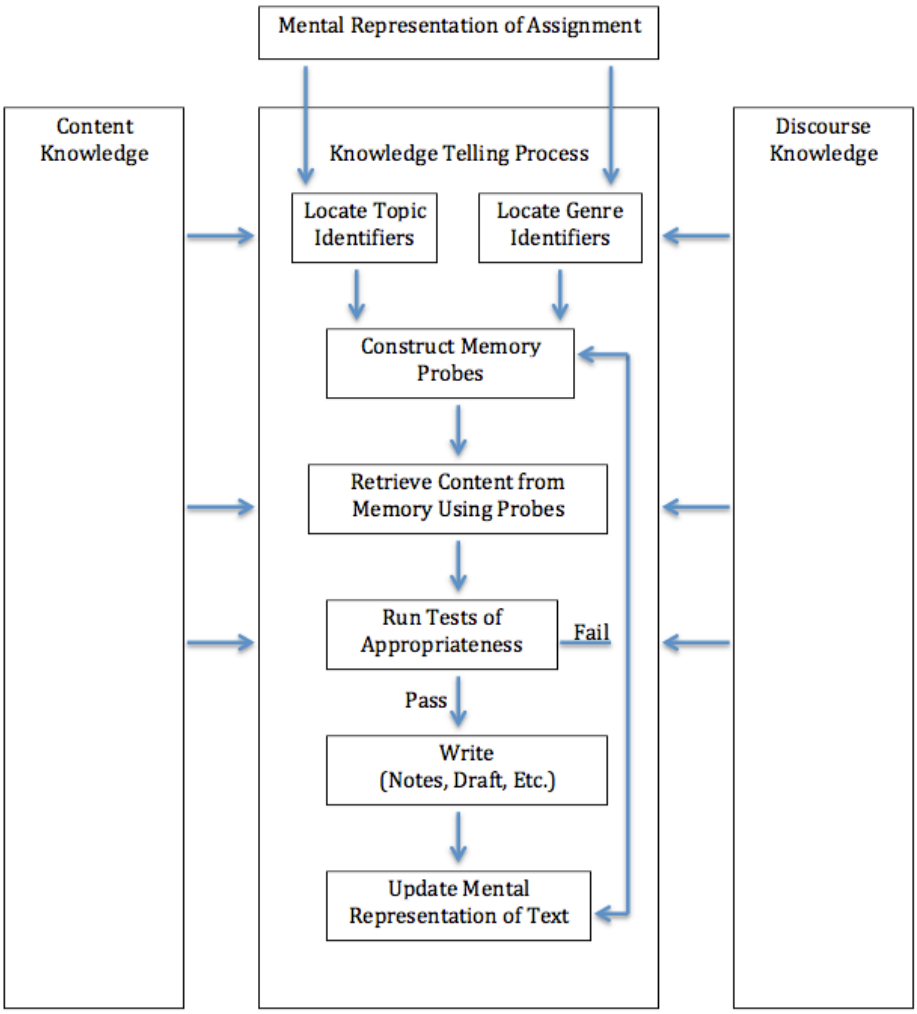

Figure 2. Bereiter & Scardamalia (1987) Knowledge Telling Model

First, a writer's ability to define a topic and purpose of the text to be written is described as a *mental representation of the assignment*. Bereiter and Scardamalia (1987) refer to the second component, *long-term memory* comprising as two types of knowledge writers utilize: content and discourse knowledge. A writer uses content knowledge to represent what he or she knows about a topic and then determines the type of text to be

written using discourse knowledge (Bereiter & Scardamalia). The knowledge telling process is the final component through which an immature writer navigates the writing process. First, the initial stage of knowledge telling consists of the writer deciding what to say and putting those words on the page. Next, the writer forms ideas they assume to be good. Finally, the writer translates those ideas into words and writes them down on the page. Novice writers typically take a simpler, more natural approach to composing, adopting a knowledge-telling approach in which content is generated through association, with one idea prompting the next (Bereiter & Scardamalia). Bereiter and Scardamalia's knowledge telling model is consistent with others' observations of struggling writers that compose by telling their knowledge and focus on his or her thoughts.

In contrast, skillful writing involves sophisticated problem solving. Skilled writers often "problematize" a writing task, adopting a strategy they called *knowledge transforming* (Bereiter & Scardamalia, 1987). Whereas the inefficient skills of novices may restrict them in using a knowledge-telling approach, skilled writers can move freely between knowledge telling and knowledge transforming (Bereiter & Scardamalia). Expert writers develop elaborate goals, particularly content and stylistic goals that require sophisticated problem solving. The transforming model assumes that writers interact with their ideas and the text itself.

Writing effectively depends upon having flexible access to context-relevant information in order to produce and comprehend texts. The Hayes and Flower (1980) and Bereiter and Scardamalia (1987) models are based on the assumption that knowledge is stored in semantic networks and ideas are interconnected in various ways (Anderson, 1983; Collins & Loftus, 1975). In Hayes and Flower's model, planning is responsible for

retrieving relevant information from long-term memory. Retrieval is automatic. Information about the topic or the audience serves as an initial memory probe, which is then elaborated, as each retrieved item serves as an additional probe in an associative chain. Similarly, Bereiter and Scardamalia (1987) describe automatic activation as underlying a knowledge-telling approach. However, Bereiter and Scardamalia contend that knowledge transformation depends upon strategic use. In knowledge transforming, problem solving includes analyzing the topic, task, and stylistic issues that results in multiple searches of ideas in long-term memory. Then, ideas are evaluated and selected according to the writer's goals (Alamargot & Chanquoy, 2001). Thus, influential models of writing differ in their accounts of how retrieval happens in skilled writing. Often times, students with EBD are restricted to using a knowledge-telling approach to write because they lack problem solving skills and strategies that skilled writers use to interact with their ideas.

Working Memory and Writing Processes

Both writing models propose that writing processes compete for limited cognitive resources. Writing has been compared to a switchboard operator juggling phone calls (Flower & Hayes, 1980) and an underpowered computer running too many programs (Torrance & Galbraith, 2006). The individual processes of planning, revising, and translating have shown to require significant cognitive effort (Piolat, Roussey, Olive, & Farioli, 1996). Working memory describes a limited-capacity system by which information is temporarily maintained and manipulated (Baddeley, 1986; Baddeley & Hitch, 1974). Working-memory capacity has been linked closely to processes for reading, such as

comprehension (Just & Carpenter, 1992; Turner & Engle, 1989), as well as to writing processes, such as translating fluency (McCutchen, Covill, Hoyne, & Mildes, 1994).

Writing requires managing demands of working memory by developing automaticity and using strategies (McCutchen, 1996). Children rely on experience and instruction with transcription in writing (e.g., such as handwriting and spelling). As these skills become automatic, the cognitive load is reduced and frees other resources required for writing. Strategies help children focus attentional resources on a particular group of writing problems, which facilitates improving the efficiency of problem solving. As writers become more competent, productive processes become increasingly more automatic and problem solving becomes increasingly strategic.

Writing depends upon the use of various strategies. Even skilled writers can be limited by working-memory capacity, so they cannot handle all aspects of the writing task simultaneously. Strategies afford a systematic means for approaching these problems. A strategy can be generically defined as a set of operations or actions that a person undertakes to accomplish a desired goal (Alexander, Graham, & Harris, 1996). All writing strategies work by focusing attentional resources on a specific group of writing problems, generally related to either planning or evaluating.

Planning helps writers generate and organize ideas, thereby resolving text issues early in the writing session. Much planning happens at the point of inscription, as writers pause to think about what they will write next (Matsuhashi, 1981; Schilperoord, 2002). This type of planning requires juggling content generation and organization with other writing processes, such as text generation and transcription. Consequently, planning can place a considerable load upon working memory. As a strategy, advance planning can

reduce working-memory demands by frontloading and isolating some planning-related activities, thus simplifying things at the point of inscription. Younger, typically developing children tend to do little advance planning (Berninger, Whitaker, Feng, Swanson, & Abbott, 1996). Children with learning disabilities typically plan less than developing children (Graham, 1990; MacArthur & Graham, 1987). Writers that use strategies to plan before writing produce better quality texts (Bereiter & Scardamalia, 1987; De La Paz & Graham, 1997a, 1997b; Kellogg, 1988; Quinlan, 2004).

Competent writers often revise their texts (Bereiter & Scardamalia, 1987). Hayes and Flower (1980) describe revising, in which the writer aims to improve the text. Revising encompasses a wide range of writing problems. For example, detecting various types of spelling errors can involve processing various types of orthographic, phonological, syntactic, and semantic information (Levy, Newell, Snyder, & Timmins, 1986). Hayes (2004) described revising as largely a function of reading comprehension. Other researchers concluded in their study of children's revising that writers must become critical readers of their own texts in order to assess the potential difficulties their readers might encounter (McCutchen, Francis, & Kerr, 1997). Revising can happen at any time. Revising should be considered a strategy that evaluates problems, identifies errors in spelling or word choice and analyzes ideas. Reading strategies for comprehension overlap with reading strategies for revising. McCutchen et al. (1997) found that skilled and unskilled students employed different reading strategies when asked to revise texts. Skilled students described using a skim-through strategy that included rereading the entire text after surface-level errors had been found (Deane, Odendahl, Quinlan, Fowles, Welsh, & Bivens-Tatum, 2008). In contrast, unskilled writers often used a sentence-by-sentence

reading strategy that was not effective in diagnosing meaning-level problems (Deane et al., 2008).

In summary, skilled writing is a complex cognitive activity that involves solving problems and developing strategies to accomplish writing goals. According to existing models of writing competency (Bereiter & Scardamalia, 1987; Hayes & Flower, 1980; Hayes, 1996), writers typically encounter three challenges:

1. Planning a text. This requires the author to build up a model that includes his or her own goals, the audience and its attitudes, the content to be communicated, and how it is to be organized.
2. Drafting a text. This expressive process converts the content into actual text.
3. Revising a text. This is the interpretive process by which the author reads the text he or she has produced and analyzes the text at different levels (e.g., orthographic, syntactic, and semantic) for purposes of reflection, evaluation, or error detection.

Successfully addressing these challenges to produce a satisfactory text requires the coordination of multiple processes that draw heavily upon limited cognitive resources. Efficiently solving problems while avoiding cognitive overload requires the development of automaticity in productive processes and strategy use in executively controlled processes. Students identified as EBD do not necessarily learn differently from their peers; however the behavior and emotional problems they experience interfere with learning.

Zimmerman and Risemberg's 1997 Model

The cognitive models of writing previously described focus entirely on what happens in the writer's head. Zimmerman and Risemberg's (1997) model differs from the previously mentioned models in that these models attempt to explain how skilled writers

gain the cognitive and non-cognitive skills needed to write rather than focusing on the writing process at different developmental levels (Graham, 2006b). Their models are strongly influenced by Bandura (1986) and Zimmerman's (1989) theory of social cognitive learning and primarily focuses on the self-regulatory aspects of writing. According to their model, writers utilize self-regulatory behaviors to purposefully regulate their writing behavior, environment and their internal thoughts and processes. For example, they believe writers will continue to use strategies they determine to be beneficial and abandon strategies that are unsuccessful. A writers' self-efficacy is also thought to be associated with successful strategy use. Self-efficacy refers to perceptions of one's own capabilities to plan and implement actions necessary to attain necessary levels of writing on a specific task (Pajares & Johnson, 1994; Zimmerman & Bandura, 1994). Writers with higher self-efficacy are more intrinsically motivated to carry out the task of writing using self-regulatory processes.

Zimmerman and Risemberg's (1997) model contribute to our knowledge base of the writing process in three ways. First, their model explicitly describes how writers purposefully control the act of writing. Second, it illuminates how self-efficacy influences self-regulatory behavior and performance in writing. Third, the model explains the process in which writers obtain new self-regulatory behaviors.

Academic Intervention Research for Students with EBD

Despite possessing average intelligence, students with EBD often have academic deficits in the areas of reading, writing, spelling, and mathematics (Kauffman, 2001; Reid Gonzalez, Nordness, Trout, Epstein, 2004). Several studies highlight the academic problems experienced by students with EBD, yet there is a paucity of research on academic

interventions (Gunter & Denny, 1998; Wehby et al., 2003; Nelson et al., 2004). Lane (2004) provides a thorough summary and conceptualization of the academic interventions for students with EBD. Studies of school-based academic interventions for students with EBD from 1993 to 2003 were reviewed and 25 were found to meet the inclusion criteria. A total of 199 predominantly male (74%) participants in kindergarten through grade 12 were included in the studies.

Reading. Lane (2004) reported that 128 students participated in interventions to improve reading. Four studies focused on peer tutoring interventions and four studies examined the utility of specific instructional programs in reading. The remaining studies explored the effects of story mapping, reading previews, trial-and-error and time-delay procedures. The interventions ranged in length from less than 5 hours to 15-17 hours in instructional time and the majority occurred outside the students' classroom, which is similar to the other reviews (Dunlap & Childs, 1996; Mooney, Epstein, Reid, & Nelson, 2003). In her review, Lane (2004) reported that all of the studies found improved reading skills and in several instances, improved behavior as a result of the intervention under study.

Mathematics. Eleven studies of mathematics were reviewed by Lane (2004); five of which occurred before 1997. Ninety-five percent of the students were male. The outcome data for the mathematics interventions are limited but promising. Peer-tutoring studies resulted in academic gains as evidenced by higher levels of correct corresponding, and improved students' attitude toward math from baseline to intervention phases. Studies that focused on specific strategies also found positive outcomes in terms of math achievement. When Lane examined a study that compared the effectiveness of direct

instruction (DI), cooperative learning (CL), and independent learning (IL) in teaching multiplication, visual patterns, and numerical patterns on-task engagement and disruptive behavior of elementary age students with EBD, she found clear behavioral differences between conditions with higher levels of task engagement and lower levels of disruption during DI as compared to CL and IL.

Writing. Academic interventions targeting written expression of students with or at risk for EBD represent by far the least developed instructional area of the three content areas examined by Lane (2004). Perhaps, interventions targeting written expression occur less frequently because writing is a complex activity that requires multiple cognitive processes, including planning, transcribing, and revising (Graham & Harris, 2003). Only one of the five studies that were identified as using writing interventions met her inclusion criteria. Hogan and Prater (1993) examined the effects of peer tutoring on spelling and vocabulary and included a self-management component. The self-management component made it impossible to examine the isolated effects of peer tutoring on on-task, academic, and disruptive behavior (Lane, 2004). Glomb and West (1990) examined the effects of a self-management procedure (WATCH) on the thoroughness, accuracy, and neatness of adolescent students' creative writing assignments. Edwards and Chard (2000) examined the effects of systematic instruction in story elements and narrative summary writing on the writing skills and academic engagement of 22 students with EBD ranging in age from 11 to 16 years. However, no explicit outcome data were provided. McLaughlin (1992) examined the effects of a personalized system of instruction (PSI) with and without a same-day retake component on the spelling performance of 10 elementary-age male students with EBD. Results indicated that students passed more spelling tests with 100% accuracy

when PSI was in place. The students passed more lessons when they were allowed to retake the test. Social validity data were collected from the students and they reported that they preferred PSI + retakes. This study did not report treatment integrity and generalizability data.

Summary. The review of literature suggests specific math strategies, self-management procedures, direct instruction in math, and systematic instruction in story elements and narrative summary writing are effective academic interventions for students with EBD. For example, the study that utilized self-management during peer tutoring as an intervention provides preliminary evidence that students with EBD who receive relatively simple feedback or support can improve their writing performance. Two studies used systematic instruction to teach math and writing. The results from these studies suggest that systematic instruction improved students' academic skills and engagement and decreased disruptive behaviors. Findings from these two studies support using Self Regulation Strategy Development (SRSD) to teach students with EBD how to write because SRSD is an academic intervention that provides systematic instruction to support students as they learn strategies to manage the writing process. In addition, this instructional method integrates components of self-regulation, which helps students with EBD regulate their behavior.

Limitations of Academic Interventions

One of the largest limitations of this body of research is the lack of effective interventions across all academic areas important for academic success (e.g., reading, math, and writing). Writing interventions represent by far the least developed instructional area of the three content areas examined by Lane (2004). The majority of interventions have

been conducted at the elementary level with little attention to students in middle or high school and lack academic outcome data.

Another limitation of the academic intervention research is the sole reliance on quantitative data. In addition to quantitative research, qualitative investigations in special education have not gained appreciation until two decades ago when researchers concluded that qualitative research can broaden perspective and add much to our understanding of children and youths identified as exceptional (Stainback & Stainback, 1984). Including qualitative research in addition to quantitative research in the examination of human behavior simply leads to a more comprehensive picture of research studies.

Finally, the majority of studies examined interventions that took place outside the classroom and were short in duration. These studies are limited by the lack of information provided about the intervention, duration, and intensity. Additional research is warranted to describe classroom environments that include classroom settings, instructional strategies, and individual student factors.

Self-Regulated Strategy Development Instruction in Writing

The Hayes and Flower Model (1980) provide a viable mechanism that accounts for individual differences in how writers compose (Graham, 2006a). The Hayes and Flower model proposes that the execution of cognitive processes is under the writers' direct control and subprocesses such as planning, generating, and revising may interrupt or incorporate other subprocesses. The revised Hayes and Flower Model (1996, 2004) provides a theoretical underpinning for Self-Regulation Strategy Development (SRSD) as an effective instructional approach to writing because it supports students use of strategies to carry out more sophisticated composing processes through procedural facilitation

(Scardamalia & Bereiter, 1986). In addition, students can be directly and explicitly taught to use more sophisticated composing strategies. For example, a student who does not plan in advance of writing can be taught how to brainstorm and organize ideas before writing a first draft. This approach is typically referred to as strategy instruction.

The development and research on SRSD in writing represents one of the most consistent efforts to examine the effectiveness of specific features of an instructional intervention (De La Paz, & Graham, 1997a; De La Paz, 2001; Graham, 1990; Graham & MacArthur, 1988; Graham & Harris, 2005; Harris & Graham, 1985; Stoddard, & MacArthur, 1993; Mason & Shriner, 2008; Reid & Lienemann, 2006) and has been determined to be an evidence-based practice (Gersten, Fuchs, Compton, Coyne, Greenwood,& Innocenti, 2005; Graham & Harris, 1989; Harris & Graham, 1996; Horner, Carr, Halle, McGee, Odom, Wolery, 2005). SRSD was developed based on Harris' research on cognitive-behavioral interventions for children and Graham's previous work on children's writing (Graham, Harris, & Zitto, 2004). SRSD is an empirically validated writing instructional approach that was designed to improve students' strategic behaviors, self-regulation skills, content knowledge, writing quality, and motivation (Graham & Harris, 1996).

Graham and Harris (2003) identified five important components of SRSD instruction. These five components include:

1. Strategies and self-regulation procedures are explicitly taught, as students who struggle with learning generally require more systematic and direct instruction to be successful.
2. Instruction between the teacher and student is a collaborative process.

3. Instruction is individualized to meet the needs of students in regard to the process.
4. Instruction is criterion based. Students move through instruction at their own pace and do not proceed to later stages of instruction until they are ready. Instruction comes to an end when students can use the strategy and self-regulation procedures capably and successfully.
5. SRSD is an ongoing process in which new strategies are introduced and old ones area updated.

Strategy instruction is an explicit and supported approach to writing that has helped many struggling writers to develop and use more sophisticated writing and self-regulation strategies (Harris & Graham, 1996).

Instruction in learning strategies uses a problem solving approach and goal directed behavior (Bos & Vaughn, 2002). Strategies provide structure to help students organize and sequence behavior. Students make a commitment to use a strategy and are taught appropriate procedures to implement the strategy through discussion and modeling. As students are able to use the processes more independently, assistance is faded until they achieve mastery. Teachers provide feedback and ample time for practice. Students are encouraged to continue using the strategy and taught how to generalize it to other settings. Students with writing difficulties can benefit from explicit instruction in cognitive strategies (Pressley, Harris, & Marks, 1992). Scruggs and Mastropieri (1986) suggest students with EBD and students with LD are similar in regard to academic functioning and that interventions that have been effective with the LD population should be tried with

students with EBD. The following section is a review of (SRSD) literature in the area of writing for students with EBD that struggle with writing.

Research on SRSD in writing

Graham and Harris (2003) conducted a meta-analysis of 18 studies executed in the area of writing from 1985-2002. These studies included diverse students: LD (n= 13), poor writers or low achievers (n = 3), good writers or gifted (n = 2), and those with multiple disabilities (i.e., LD and attention-deficit disorder; n = 3). Participants in all 18 studies ranged from grades 2-8. The authors implemented single case and group designs. Findings from this meta-analysis suggest that Self-Regulated Strategy Development (SRSD) is an effective writing intervention for students with LD and for struggling writers. A second meta-analysis of SRSD research was conducted with students in grades 4-12 (Graham & Perrin, 2006). Results suggest that SRSD had a strong impact on the quality of students' writing, with an average weighted effect size of 1.14 (Graham & Perrin). To date, over 40 studies have been conducted using SRSD, primarily in the area of writing, with students from elementary through high school, and with students with disabilities (Wong, Harris, Graham & Butler, 2003). Teaching SRSD has generated significant improvements on four aspects of students' writing performance: knowledge of writing, quality of writing, approaches to writing, and self-efficacy (Graham & Harris, 1999). A small number of studies have been conducted with students served under the EBD classification and provide preliminary findings in terms of participants, writing genre, interventionists, dependent variables, maintenance and generalization, and quality indicators.

Research on SRSD with students with EBD

Self-Regulation Strategy Development (SRSD) seems particularly appropriate for students with EBD since it combines explicit instruction in self-regulation with strategy instruction (Harris & Graham, 1996). Eleven studies have investigated the utility of SRSD for students with writing problems that are at-risk for or identified as EBD. Five studies included participants with EBD, five included subjects at-risk for EBD with challenging behaviors, and one study included participants identified as both at-risk and identified EBD. Nine studies employed single subject designs to demonstrate the effectiveness of SRSD. Two studies used a pre- and post-test experimental group design to make comparisons with a control group. Harris used a randomized control to assign students to either narrative or persuasive writing conditions. The studies involved a total of 168 individuals (104 males; 64 females) that participated in SRSD writing interventions. Studies were implemented in both elementary (n = 7) and middle (n = 4) schools and no studies were implemented with high school students.

In general, instruction in writing persuasive essays using SRSD resulted in positive effects for persuasive elements. Across all studies, scores at baseline ranged from 0 to 9 and increased from 0 to 11 post-instruction (Cuenca-Sanchez, 2010; Lane, Harris, Graham, Driscoll, Sandmel, Morphy, . . . Schatschneider, 2011; Little, Lane, Harris, Graham, Brindle, & Sandmel, 2010; Mason & Shriner, 2008; Mason, Kubina, Valasa, & Cramer, 2010; Mastropieri, Scruggs, Mills, Irby, Cuenca-Sanchez, Allen-Bronaugh, . . . Regan, 2009; Mastropieri, Scruggs, Cuenca-Sanchez, Irby, Mills, Mason, & Kubina, 2010; & Mastropieri, Scruggs, Irby, Allen-Bronaugh, Thompson, Guckert . . . Cuenca-Sanchez, 2012). Average PNDs for persuasive elements were well above 80%. Three studies reported effect sizes

ranging from 1.28 to 1.74 (Lane et al., 2011; Mastropieri et al., 2009; Mastropieri et al., 2010;). Instruction in persuasive writing using SRSD also resulted in positive outcomes for quality. Across all studies, scores at baseline ranged from 0 to 4 and increased from 2 to 9 post-instruction (Lane et al., 2011; Mason & Shriner, 2008; Mastropieri et al., 2009; Mastropieri et al., 2010; Mastropieri et al., 2012). Average PNDs for quality were well above 80%. Two studies reported effect sizes ranging from 1.40 to 1.66 for quality (Lane et al., 2011; Mastropieri et al., 2010). As well, instruction in persuasive writing using SRSD resulted in positive effects for length. Across all studies, scores at baseline ranged from 21 to 166 and increased from 22 to 223 post-instruction (Lane et al., 2011; Mason & Shriner, 2008; Mason et al., 2010; Mastropieri et al., 2009; Mastropieri et al., 2010; Mastropieri et al., 2012). Average PNDs for length were well above 80%. Two studies reported effect sizes for length ranging from 1.08 to 1.72 (Lane et al., 2011; Mastropieri et al., 2010).

Instruction in writing narratives using SRSD resulted in positive effects for story genre elements. Across all studies, scores at baseline ranged from 0 to 3 and increased from 3 to 7 at post-instruction (Adkins, 2005; Lane, Graham, Harris, Little, Sandmel, & Brindle, 2009; Lane, Harris, Graham, Weisenbach, Brindle, & Morphy, 2008; Lane et al., 2011). Average PND's for story elements were well above 80%. One study reported an effect size of 1.04 for story elements (Lane et al., 2011). Instruction in writing using SRSD resulted in positive effects for story quality. Across all studies, scores at baseline ranged from 0 to 4 and increased from 2 to 7 at post-instruction (Adkins, 2005; Lane et al., 2008; Lane et al., & 2009). Average PNDs for story quality were well above 80%. One study reported an effect size of 1.20 for story quality (Lane et al., 2011). Instruction in writing using SRSD resulted in positive effects for story length. Across all studies, scores at baseline ranged from 6 to 95

and increased from 23 to 114 post-instruction (Adkins, 2005; Lane et al., 2008; & Lane et al., 2009). Average PND's for story elements were well above 80%. One study reported an effect size of .28 for story length (Lane et al., 2011). Despite these positive findings, additional research is needed because SRSD instruction is either provided by the researcher or trained graduate student.

Maintenance and generalization. An important goal of intervention research for students with EBD is to maintain positive effects after intervention and be able to apply the new strategy to a different activity. Nine studies reported measures of writing maintenance over time, ranging from 2 to 11.5 weeks. Gains in writing were not fully maintained at maintenance checks, however, gains did maintain over baseline levels. Six studies assessed generalization of writing strategy and/or skill use. Researchers have taken anecdotal records of generalization and found that many students showed evidenced of using persuasive writing strategies in other settings. Mastropieri et al. (2009) assessed generalization through interviews with students to determine if they were using the strategies outside writing instruction. Students reported SRSD strategies improved their writing and the mnemonics helped them plan and organize their writing. In one study, a student articulated:

> POW + TREE helped me write persuasive essays better. Before this I didn't know how to write a persuasive essay. Now it gives me a strategy of how to do it if I really want to persuade someone. I know how now. You should always organize first . . . you always have to show someone else's point of view with a counter-reason. So that the person you are writing [to] realizes that you acknowledge what they think (Mastropieri et al., 2012, p. 13).

Students were able to recreate graphic organizers at maintenance in one study (Mastropieri et al., 2010). Students in this study self-reported they applied the strategies in their English and science classes.

Summary. Overall, the results of these eleven investigations suggest that SRSD is an effective intervention for teaching writing to students with EBD. Improvements were seen in all elements of essay writing, including number of words written, number of paragraphs written, number of transition words, number of essay parts, and overall quality of writing as measured by holistic scoring. In fact, the outcomes of the present review of literature are closely aligned with those of previous SRSD research with typically achieving students and students with LD (Graham & Harris, 2003; Graham & Perrin, 2006).

However, despite this body of evidence, there are clear needs for further research in this area. SRSD has not been investigated with students in high school. Writing deficits occur across the grade span and more research is needed to investigate the efficacy of SRSD with high school students with EBD. Second, only one study from the review of literature taught students how to write counterarguments. Counterarguments are an important element of persuasive writing (Caine, 2008; DiPrince, 2005; Graff & Birkenstein, 2007). Teaching students with EBD to construct and write counterarguments in persuasive essays is a valuable tool. One common characteristic of this population is a lessened ability to appreciate, or sometimes even to consider, the opinions of others (Kauffman & Landrum, 2009). The inclusion of counterarguments within persuasive essays that require students to take the perspective of others could prove valuable.

Finally, no studies have focused on the professional development provided to special education teachers in the realm of writing instruction using SRSD. The majority of

the studies using SRSD with students with EBD have used research staff to implement/teach the intervention. It is important to evaluate the effectiveness of SRSD with students with EBD when classroom teachers serve as the provider of the SRSD intervention. Using teachers as interventionists is a necessary step in bringing evidence-based practices into the classroom (Odom, Brantlinger, Gersten, Horner, Thompson, Harris, 2005).

Literature Review and Conceptual Framework: Professional Development

Professional Development in Writing

During the 1970s and 1980s the National Writing Project (NWP) emerged as a professional development model whose novel approach and purpose was to draw together successful teachers of writing in order to examine and share the practices of successful practitioners. The NWP has been considered both an outgrowth of, and a contributor to, the development of process writing theory and pedagogy (Roberts, 2002). The Carnegie Corporation stated the NWP was "the best large scale effort to improve writing in the country (Scriven, 1979, p. 14). Similarly, the National Endowment for the Humanities called the NWP "the most effective program in the history of Endowment support for elementary and secondary educational programs" (Smith, 1996). Research studies have examined the influence of the NWP on teacher practice through self-reports from teachers, interviews, and observations. The researchers found that teachers believed the NWP had a significant positive influence on their instructional methods in writing (Berry, 1991; Carter, 1992; Dimiller, 1991; Fischer, 1997; Hampton, 1990; Marsh, 1987; Nilsson, 1981; Olson & DiStefano, 1980; Pritchard & Marshall, 2002a, 2002b, 2005; Wilson, 1988; Tindall, 1990; Zbikowski, 1991).

Pritchard and Honeycutt (2006) claim that studying the writing process is comprehensive, multilayered, and overlapping. Few purely experimental studies in writing have been conducted, and few large scale, or with the same population over time. The positive effects of the NWP have been well established across two decades of studies and are a step in the direction of understanding how professional development influences writing instruction. It is equally important that special education teachers have access to training on the best writing instructional methods and strategies to help their students succeed. However, there are no studies available that have examined models of professional development in writing for special education teachers. The purpose of the present study was to provide professional development to special education teachers and examine the effects on their writing instruction and their students' performance. Thus, a review of previous NWP studies is warranted given the research that supports its influence on teachers' writing instruction, which can inform professional development on writing instruction for special education teachers.

Teachers' Writing Instruction

Nilsson (1981) examined teacher attitudes and perceptions after participation in a summer institute workshop on the NWP. Nilsson administered an attitude survey to participants and found that teacher's attitudes changed significantly toward teaching strategies and found the workshop ideas applicable to their own classrooms. Teachers reported the summer institute was a very valuable experience and they believed the training positively influenced their writing instruction. Similarly, Dimililer's (1991) examined teachers' experience in the NWP. Using self-reports, the researcher claimed that all of the teacher participants believed their experience was positive and rewarding.

Dimililer also reported that teachers made changes in their teaching strategies as a result of their experience in the workshop. Both studies did not indicate whether teacher practice influenced student-writing achievement.

In the previously mentioned studies, "teacher impact" is defined as attitudes, creativity, leadership skills, and their own writing. While these dimensions are an important part of teacher practice, it does not address teachers' instructional practices in a classroom setting nor how they were implemented. In a climate of increased attention to accountability, it is natural to ask how well teachers implement content learned in professional development and the effects on student learning.

Tindall (1990) used a quantitative instrument and examined the influence of three different levels of training in writing instruction. The first and most intensive model of staff development consisted of participation in a summer institute. The second mode was a 30-hour series of writing instruction workshops taught by writing project teacher consultants during a 1-3 month period. The third staff development experience was a one-day workshop on process writing. Ninety-seven public school teachers completed a "writing process assessment instrument." Results of a one-way ANOVA indicated that teachers who participated in the most intensive staff development (e.g., whole summer institute) demonstrated the greatest use of teaching writing using the process approach in comparison to the teachers that only participated in the 30-hour series of writing instruction or one day workshop. These findings suggest that teachers may benefit from an intervention like coaching, which is sustained over longer periods of time.

Student Writing Achievement

Olson and DiStefano (1980) conducted a two-year study in two junior high schools and examined the impact of the NWP on student writing. Results indicate that students of teachers who participated in the ongoing professional development scored higher on an end of the year writing test than students whose teachers did not receive ongoing professional development. The following year the non-treatment teachers participated in the same professional development as teachers in year 1 and students of the teachers in year two demonstrated substantial improvement in their writing scores. These scores were statistically significant in comparison to their scores from the previous year.

Pritchard (1987) examined 383 junior high school students' writing over a three-year period and revealed that students of teachers trained in the NWP model significantly outperformed students of non-trained teachers. Interestingly, the difference between students of trained and non-trained teachers was not apparent at the high school level.

Berry (1991) examined both teacher change as influenced by the NWP training and student writing achievement as measured by scores on the South Carolina Basic Skills Exit Examination Writing Tests. Teachers participated in the NWP training project reported their students wrote more frequently and with greater variety. Teachers described themselves as more confident and effective in their teaching. Results indicated that students in classrooms of teachers trained through the NWP had higher scores than students in classrooms of non-writing project trained teachers. However, only raw scores or percentages on students' writing samples were presented; thus, the results must be interpreted with caution. In addition, Berry did not control for initial differences among schools or other threats to validity.

Pritchard and Marshall (1994) conducted an extensive study and analyzed 3,927 student essays. Pretest and post-test score analyses demonstrated significantly higher writing achievement for students of writing project trained teachers compared to students of non-writing project teachers. Similar to Pritchard's (1987) study, both researchers revealed that high school students of writing project trained teachers made less dramatic gains than middle high or elementary students in classrooms of writing project teachers.

A comprehensive study (Pritchard & Marshall, 2002a, 2002b, 2005) of NWP professional development practices in high and low SES school districts examined 3,000 writing samples from students in randomly selected schools, in 18 randomly selected school districts across the United States. Student achievement in writing was used as one measure of impact on the professional development. The students in districts rated as having high SES obtained a significantly higher mean writing achievement results that students in districts rated as having low SES.

Pritchard and Honeycutt (2006) suggest that all of the NWP studies cannot account for all the factors that influence writing instruction. Numerous research studies have reported that the NWP influences teacher beliefs and practices, yet the research on student writing achievement has been less convincing. It is especially important that new research builds on prior studies and use better data collection tools and different analyses for studying outcomes across individual studies. These types of studies should also include teachers of students with disabilities.

Summary

For practicing teachers, professional development (PD) is perhaps one of the most important bridges from research to classroom implementation (Kretlow, Cooke, & Wood,

2012). A growing consensus of researchers and practitioners has found that systematic, on-going, teacher professional development is more effective than one-time workshops (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Studies conducted on the NWP provide support for professional development. The findings suggest that teacher training on content and pedagogical knowledge related to writing changed teachers' knowledge and beliefs and positively influenced their students writing. Tindall (1990) highlights the connection between intensive PD for teachers and the presence of a collaborative professional community, which resulted in sustained effects over time. However, the NWP did not use a direct use a direct measure of teacher behavior to determine effects of the project on teachers writing instruction.

Improving writing instruction across the U.S. continues to be a concern for educators. Understanding teacher transformation in the NWP helps us approach future studies in different and more productive ways. First, if we are to look at influenced changes in classroom practice in the most productive way possible, we must start by observing what teachers learn in PD and how the learning is implemented into their instruction over a sustained period of time. Second, the duration of PD should be examined to determine how much dosage is needed for teachers to implement writing instructional methods. Finally, it is important to study teacher implementation of the newly learned content to better understand teachers' implementation of the PD content.

Effective Professional Development Programs

Fullan (2001) wrote, "Educational change is technically simple and socially complex" (p. 69). Nowhere is this astute observation more applicable than to the study and implementation of professional development for practicing teachers. Teachers are key to

student learning and school performance cannot be obtained without addressing teacher preparation (Ball & Forzani, 2009; Bransford, Brown, & Cocking, 2000; Neuman & Cunningham, 2009). Improving teacher learning and development is often considered a critical component needed to improve the quality of U.S. schools (Borko & Putnam, 1995; Darling-Hammond, 1997; Carnegie Forum on Education and the Economy, 1986; The Holmes Group, 1986; McLaughlin & Talbert, 1993; National Commission on Teaching and America's Future, 1996; Thompson & Zeuli, 1999). Further, Desimone, Smith, Hayes, & Frisvold (2005) assert that teacher learning and development is a critical mediator to improve student achievement. Teachers are instrumental in accomplishing this goal and need to be provided with opportunities to grow as professionals.

Professional development can be defined in several different ways. Little (1987) describes professional development as "any activity that is intended partly or primarily to prepare paid staff members for improved performance in present or future roles in the school districts" (p. 491). The Committee on Science and Mathematics Teacher Preparation (2000) defines professional development as the cornerstone for the implementation of standards-based reform. The No Child Left Behind Act (NCLB) describes "high-quality" professional development as activities that "improve and increase teachers' knowledge of the academic subjects the teachers teach" (content focus) and that "are…sustained [and] intensive" (duration) and "are aligned with and directly related to state academic content standards, student academic achievement standards, and assessment" (coherence; Desimone, 2009, pp. 184). Similarly, the Teaching Commission (2004) report *Teacher at Risk: A Call to Action* emphasizes coherence (alignment) and collective participation (collaboration):

> Professional development should be aligned with state and district goals and standards for student learning…and should also involve collaboration so that teachers can learn from each other. (p. 49)

Content of Professional Development

NCLB encourages school districts to adopt programs and practices that are supported by scientifically based research (Birman, Le Floch, Klekotka, Ludwig, Taylor, Walters, . . . Yoon, K. S., 2007). Other sponsors of PD initiatives, such as the National Science Foundation, have also sought to improve the quality of PD made available to teachers and have been eager to conduct research on its effects (Blank, de las ALas, & Smith, 2008; Supovitz, Mayer, & Kahle, 2000). Some researchers suggest effective professional development efforts must address the unique curricular and instructional constraints under which special education teachers operate (Brownell et al., 2008). Improving the knowledge and practice of special education teachers must do so in a way that recognizes the variability that exists in their knowledge and skills. In addition, specialized training in content knowledge can positively affect instructional practices and child outcomes (Cunningham, 2006; Neuman, 1999; Whitehurst, Arnold, Epstein, Angell, Smith, & Fischel, 1994) and needs to be included. Improved professional learning needs to be integrated in the foundations of education: what needs to be learned (content), the nature of that content and what that implies about how it might be learned (theories of learning), curriculum and pedagogy (with what material and ways to assist the learners in learning the content, given who they are, the nature of what there is to be learned, and theories of how it is best learned).

It is challenging for teachers to implement content without a basic foundation about individual students' knowledge, ideas, and perspectives. For example, reflecting on: What is working? What is not working? What students are struggling or not? McLaughlin (1992) wrote:

> Implementation is a problem of the smallest unit, and we think it makes most sense to begin there, rather than trying to turn the system upside down from the outside, based on large increases in money or potent new instruments of coordination. (p.7)

Professional development activities that are coherent, content focused, active, and situated in real world contexts, and are data-driven appear to be most likely to lead to lasting change (Gersten, Chard, & Baker, 2000; Gersten, Morvant, & Brengelman, 1995; Leko & Brownell, 2009). Special education teachers must have an understanding of the subject matter they teach, in ways quite different from those they learned as a student (Ball, 1999). In addition to knowing the content they are teaching, special education teachers must know about children – what children are like, what they are likely to find interesting, and what children have trouble with. Professional development for special education teachers should include information about student learning, subject matter, and effective pedagogy (Ball). It is important that special education teachers have knowledge of their students' interests and understand how children learn. Special education teachers should be familiar with cultural differences, language, class, family and the community. Special education teachers must learn how to adapt and shift methods in response to students and learning goals. Finally, Leko and Brownell (2009) stress that effective professional development is collaborative and focused on student data.

Methods and Features of Effective Professional Development

Professional Development can have a positive impact on student achievement; however, little is known about features of effective professional development workshops. Recently, Yoon et al. (2007) reviewed studies that examined the influence of professional development on student achievement. Nine studies met the evidence standards for inclusion. They examined studies in three core academic subjects (reading, math, and science) and concluded that PD programs delivered in settings that are conducive to learning can have an effect on student achievement. Despite these findings, there is a need to demonstrate the effectiveness of such programs when delivered by others in a range of context.

It is generally accepted that intensive, sustained, job-embedded professional development that focuses on content of the subject that teachers teach is more likely to improve teacher knowledge, classroom instruction, and student achievement (Garet , Porter, Desimone, Birman, & Yoon, 2001; Guskey, 2003; Hawley & Valli, 1998; Little, 1993; Loucks-Horsley, Hewson, Love, & Stiles, 1998; Kennedy, 1998; National Commission Teaching and America's Future, 1996; Showers, Joyce & Bennett, 1987; Wilson & Berne, 1999). Furthermore, *active learning, coherence*, and *collective participation* have also been suggested to be promising best practices in professional development (Garet et al., 2001). Nearly everyone decries the "one shot" workshop and affirms that professional development should be "sustained" and "intensive." There is also evidence to suggest that professional development is more likely to be effective when given in larger "doses" (Yoon et al., 2007). However, the cost of developing and delivering professional development grows proportionally with the number of days involved, and requiring teachers to be out of

the classroom on regular school days is disruptive to student learning. Another example of the need for greater specificity to guide practice is the consensus that professional development should be "school based" or "integrated into the daily work of teachers" (Hawley & Valli, 1998; Joyce and Showers, 2002). This type of professional development requires a coach or mentor to work with teachers at one or more schools, which is among the most expensive approaches to professional development available.

Conceptual Framework for Professional Development Intervention

Four features of effective professional development were used in the current study to teach teachers about SRSD writing intervention methods. These characteristics are: (a) *content,* (b) *active learning*, (c) *coherence*, and (d) *duration*. *Collective participation* was a fifth feature that was manipulated in the study to determine which components support teacher learning. A description of each characteristic is described.

Content. The content of teacher learning may be the most influential feature. Studies of professional development demonstrate that content-focused efforts may be the most important component in improving teachers' knowledge and practice, in addition to improving the achievement of their students (Desimone, Porter, Garet, Yoon, & Birman, 2002; Yoon et al., 2007). Staff development leaders must consciously create multiple opportunities to blend theory, content area knowledge, general teaching principles, and knowledge of students as learners and situate this knowledge in classroom practice (Brownell, Ross, Colon, & McCallum, 2005). Special education teachers need basic knowledge and more sophisticated knowledge about strategies for developing writing skills of students with disabilities and methods of adapting the curriculum to incorporate those instructional strategies.

Active learning. Providing opportunities for teachers to engage in *active learning* is considered an effective component of professional development (Garet et al., 2001; Loucks-Horsley et al., 1988). *Active learning* is characterized as observing expert teachers or being observed, interactive feedback and discussion, reviewing student work in the topic areas being covered, and leading discussions (Banilower & Shimkus, 2004; Borko, 2004; Lieberman, 1996; Carey & Frechtling, 1997; Darling-Hammond, 1997). Teachers acquire new practices and knowledge when they have opportunities to actively engage in learning those practices and to situate them in classroom settings (Desimone et al., 2002; McCutchen, Abbott, Green, Beretvas, Cox, Potter, . . . Gray, 2002). Special education teachers need concrete images that demonstrate how to apply instructional theories and innovations in the classrooms (Leko & Brownell, 2009) along with explicit instruction in research-based practices by expert teachers, frequent opportunities for practice with continuous feedback and coaching, and opportunities to discuss how implementation of the newly learned content is progressing. These opportunities help special education teachers relate knowledge acquired in professional development to real problems of practice (International Reading Association, 2003).

Coherence. The third core feature refers to the extent to which teacher learning is consistent with teachers' knowledge and beliefs (Consortium for Policy Research in Education, 1998; Elmore & Burney, 1997). Effective professional development must align with special education teachers' goals and needs; local, state, and national standards and accountability mechanism; and school-wide curricula (Garet, et al., 2001; Penuel, Fishman, Yamaguchi, & Gallagher, 2007). Professional development efforts must help special educators understand how the interventions that they are using and the general education

curriculum fit together to address content standards and enable performance on state assessments (Leko & Brownell, 2009). For example, professional development efforts must help special education teachers identify key concepts that are essential for the success of students with disabilities.

Duration. Research shows that intellectual and pedagogical change requires professional development activities to be of sufficient duration, including both the span of time over which the activity is spread and the number of hours spent in the activity (Cohen & Hill, 2001; Guskey, 1994; Fullan, 1993; Supovitz & Turner, 2000). Research has not indicated an exact "tipping point" for duration but shows support for activities that are spread over a semester and include 20 hours or more of contact time (Desimone, 2009).

Collective participation. While many consider *collective participation*, or *coaching*, a critical feature, there is little empirical evidence to support that *coaching* will increase student achievement. Lane et al. (2011) suggests ongoing professional development is critical to supporting practitioners in the field and contributing to their professional growth (Lane, Jolivette, Conroy, Nelson, Benner, 2011). Alternative forms of professional development that include a combination of in-service training and follow-up support have shown more promise in promoting changes in teaching behaviors (Knight & Wiseman, 2005; Yoon et al., 2007). For example, single participant studies have shown that follow up support in the form of individual coaching more effectively supports sustained teacher changes after in-service training (Hasbrouck, 1997; Morgan, Menlove, Salzberg, & Hudson, 1994).

In a comprehensive review of literature, Kretlow and Bartholomew (2010) found 13 studies between 1989 and 2009 that specifically examined the impact of coaching and the

fidelity of research-based practices. Results indicated two primary types of coaching: supervisory and side-by-side. Both methods of coaching improved teacher implementation. Many of the investigations also examined teacher perspectives on coaching and reported that teachers generally found coaching a preferable form of follow-up. Therefore, the general purpose of this study was to provide special education teachers with a combination of a 3-to-4 hour professional development on SRSD and coaching (i.e., preconference, demonstration, feedback, lesson plan development, discuss implementation) to improve their accurate delivery of SRSD. These arrangements set up potential interaction and discourse that can be a powerful form of teacher learning (Banilower & Shimkus, 2004; Borko, 2004; Desimone, 2003; Fullan, 1991; Guskey, 1994; Little, 1993; Loucks-Horsley et al., 1998; Rosenholtz, 1989).

Theory of Change

The model in Figure 3 represents an interactive, non-recursive relationship between the critical features of professional development, teacher knowledge and beliefs, classroom practice, and student outcomes. This model allows testing both a theory of teacher change (e.g., professional development alters teacher knowledge, beliefs, or practice) and a theory of instruction (e.g., that changed practice influences student achievement) that are necessary for understanding how professional development works. These critical features form the basis of the framework for the proposed study.

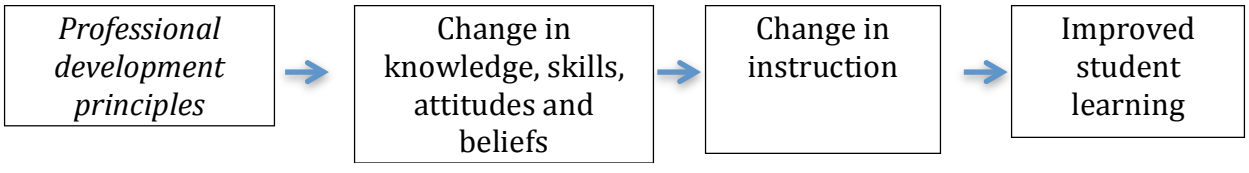

Figure 3. Theory of Change

Purpose of the Study

Struggling writers' knowledge about writing, especially their genre knowledge, is quite limited (Lin, Monroe, & Troia, 2007; Saddler & Graham, 2007). The three core components of SRSD (e.g., strategies, knowledge, and self-regulation procedures) provide mechanisms for increasing students writing knowledge and writing performance. Professional development can assist practicing teachers in understanding and developing students' thinking and knowledge about writing. Little is known about particular components of professional development that increase teachers' knowledge, skills, and practice to teach writing. To date, there is a paucity of research on efficient, effective professional development models that investigate environmental variables (e.g., teacher behaviors) in relation to student achievement. Furthermore, researchers have not measured the influence of professional development on special education teachers' knowledge about writing, instruction provided to students, and their students writing achievement.

The current study examined Desimone's model of PD with coaching as a method to influence (a) special education teachers' knowledge about writing instruction, (b) their instructional methods, and (c) student achievement in writing.

Research Questions

The research questions addressed in this investigation were:

1. What are special education teachers' knowledge, attitudes, and beliefs about their writing instruction prior to attending a professional development workshop on SRSD?

2. What effect does a professional development workshop with coaching have on special education teachers' use of SRSD instructional elements during their writing instruction?
3. What are the changes in special education teachers' knowledge, attitudes, and beliefs about their writing instruction after attending a professional development workshop on SRSD?
4. What effect does professional development and coaching on SRSD have on students' persuasive writing essays?

CHAPTER THREE: METHODS

A multiple baseline across participant design was used to examine the effects of professional development (PD) plus coaching on teachers' writing instructional behaviors (Kennedy, 2005). Three phases were evaluated, (a) baseline (no PD), (b) PD, and (c) coaching, during which each teacher entered intervention in the multiple baseline staggered fashion. This created three staggered replications of the instructional procedures across three teachers. Each teacher received two phases of intervention: professional development and coaching. During all phases, data were collected on the percentage of instructional writing behaviors implemented during each session.

In addition to the multiple baseline design, this study also used individual interviews to describe teacher practice and beliefs in the classroom to expand and clarify quantitative findings. Seidman (1998) explained that interviewing "provides access to the context of people's behavior" and thereby provides a way for researchers to understand the meaning of behavior. Interviews took place during baseline and after the first phase of intervention.

Student writing outcome data were collected during each phase of intervention. Students were provided with paper, pencils, and a writing prompt. Students were also provided with an additional sheet of loose-leaf paper in case they wrote more or if they needed space to plan their essay. Finally, to determine acceptability of the intervention prior to implementation, social validity was assessed during baseline and after the second phase of coaching.

Participants

The participants in this study were special education teachers (n = 3) who taught students with EBD in self-contained classrooms and their students. Before the study began, the human subjects review board approval at the university and district levels was obtained. Teachers who met participation criteria gave informed consent. Second, students of teachers who consented received and took home consent forms to parents. Finally, students whose parents agreed to participate in the study gave informed assent (100% agreed to participate).

Special Education Teachers

Three special education teachers who instruct students with EBD in writing and met the following criteria were invited to participate in the study. Each teacher (a) worked for an urban school district in the state in the Pacific Northwest; (b) taught language arts or writing to students with behavioral and writing difficulties; and (c) were certified teachers endorsed in special education with training in teaching students with high incidence disabilities. The teachers had an average of 5 years teaching experience ranging from 3 to 9 years. Teachers were excluded from the study if they had less than one-year teaching experience in a self-contained setting.

Teacher A was a white male teacher who taught 4th and 5th grade students in a self-contained intervention classroom in a public elementary school. He had a total of eleven students enrolled in his class; however six were not present for writing instruction and did not participate in the study. Teacher A had a Masters degree and dual teaching certification in elementary and special education. He had a total of 3 years teaching experience.

Teacher B was a white female teacher who taught Language Arts to 9th, 10th, and 11th grade students with EBD who attended a self-contained school for children with EBD. She had a total of 4 students who attended language arts, although one student rarely attended school. Another student enrolled in her class during the second phase of the intervention. Thus, a total of three students participated in the intervention. She had a total of 5 years teaching experience; she taught elementary school for one year and high school for four years in self-contained settings. Teacher B held a special education teaching certification and a Masters Degree in Behavior Management.

Teacher C was a white male teacher who taught students in 6th and 7th grades. He taught a total of 7 students. One student was transitioning to a different school during writing instruction. Therefore, a total of 6 students participated in writing instruction on a weekly basis. Teacher C held a Bachelors degree in English, a Masters degree, and teaching certification in Special Education. He had taught a total of 9 years.

Students

Students in the participating teachers' classrooms who (a) were identified EBD or received EBD services and (b) had an Individualized Education Plan (IEP) goal in the area of written composition (not spelling), and (c) regularly attended writing instruction were included in the study. The specific details of their challenging behavior and disability varied from student to student. As well, students had the following co-morbid conditions: anxiety, depression, bi-polar disorder, attention deficit hyperactivity disorder, and mood disorders. Teachers were asked to nominate all participants with a record of good attendance and whom they thought would be willing participants. Students who were mainstreamed during writing instruction were not asked to participate in the study. Recruitment

materials were sent home with all eligible students to obtain informed consent. Students in each teacher's classroom were asked if they would like to participate and every student provided assent (100%) for a total of 14 students. Student characteristics are found in Table 1.

Table 1.
Student Participant Characteristics

	Classroom A n (%)	Classroom B n (%)	Classroom C n (%)
Total	5	3	6
Gender			
Male	4 (80%)	2 (67%)	4 (67%)
Female	1 (20%)	1 (33%)	2 (33%)
Grade	4th – 5th	9th – 11th	6th – 7th
Special Education Disability Label			
EBD	4 (80%)	2 (67%)	4 (67%)
SLD	-	-	1 (16%)
OHI	-	1 (33%)	-
Autism	1 (20%)	-	1 (16%)
Ethnicity			
Caucasian	4 (80%)	2 (67%)	3 (50%)
African American	-	1 (33%)	1 (16%)
Hispanic	-	-	-
Asian/Pacific Islander	1 (20%)	-	2 (33%)
Screening			
IEP Writing Goal	5 (100%)	3 (100%)	6 (100%)
Behavior Goal	5 (100%)	3 (100%)	6 (100%)

Setting

The study took place at two schools in self-contained classrooms located in urban school districts in the Pacific Northwest. All instruction took place in the teacher's classroom during language arts three times per week for 35-60 minutes per session.

School A. School A has a population of 408 students, 17.9% of whom receive special education services. Across the school, approximately 54.2% are male and 45.8% female. The diversity of the school is 50.5% Caucasian, 1.7% African American, 26.5% Hispanic, 14.7% Asian, 15.4% Asian/Pacific Islander. Furthermore, 42.4% of the school's population receives free or reduced-price lunch and 23.3% of the school's population speaks a language other than English. Teacher A is a special education teacher here along with 36 other teachers.

All traditional academic programs were included in the School A's programming, which also included programs for English for Speakers of Other Languages (ESOL) and special education. All students who qualified for special education met the local, state, and federal criteria for the respective disability area.

School B. School B is a specialized environment and has a population of 40 students who all receive special education services for students with emotional behavioral disabilities. Of those 40 students enrolled in school, approximately 90% are male and 10% are female. The diversity of the school is 37.5% Caucasian, 47.5% African American, 7.5% Hispanic, and 7.5% American Indian. Furthermore, 92.5% of the school's population receives free or reduced-price lunch and 0 % speak a primary language other than English. Teachers B and C teach here along with 21 other teachers. The school offers Individualized Education Program (IEP) behavioral support services for elementary, middle, and

secondary students with EBD. At least two teachers are present in the classrooms at all times.

The program offers a continuum of services with the primary goal of re-integrating students to the general public home school setting by gradually moving students from the full day placement at the school to half-day placement. Students who exhibit behaviors in their home school that require intensive emotional and/or behavioral support beyond what could be provided in an inclusive setting are placed in at this school. Special education teachers implement the student's academic goals based on their IEP.

Intervention Procedures

Baseline

Teachers were asked to teach writing using their current writing instructional methods/curriculum. During baseline, no training or feedback was provided to the teachers. Writing sessions for each teacher were observed one to three days per week and data were collected through a video recorder. Teachers asked students to write in response to one to three persuasive writing samples during baseline.

Additionally, descriptive measures of teachers knowledge and dispositions about their writing instruction were collected using interview questions and social validity information about the intervention was collected from teachers and students a social validity rating scale that has been used in previous studies of SRSD (see data collection measures). Each teacher explained the intervention to their students and read each question aloud before students rated the intervention.

Phase I: Professional Development

During the first phase of intervention, each teacher received a customized single professional development (PD) workshop on how to teach an SRSD strategy to support persuasive writing using SRSD. Teachers chose to participate in the PD because it aligned with their goals and district accountability needs. PD content that is aligned with teachers' needs and is consistent with their beliefs is considered to be a core feature of PD. A detailed description of SRSD content and procedures follows this section. The PD occurred in each teacher's classroom one day after school with the relevant instructional team in their building. Each PD lasted approximately four hours and while the content was standardized across teachers, each session was based on the individualized needs of the teachers and students. Teacher A attended the PD with one other teacher in his building before winter break. Teacher B attended the PD with her three Instructional Assistants and Teacher C participated in the PD with his two Instructional Assistants. Both Teacher B & C participated in the PD four days before the next writing session they would teach.

PD procedures. *Content, active learning, coherence, duration*, and *collective participation* are influential features of PD that provide teachers with opportunities to develop their content and pedagogical knowledge. These influential features of PD suggest that teachers must be provided with (a) knowledge of their students as learners, (b) knowledge of content area and pedagogical information, (c) concrete images of the practices, and (d) interactive feedback. The PD workshop included all these elements.

First, the lead researcher of the study shared her previous experience with SRSD instruction and examples of student writing before and after instruction from classrooms and students similar to theirs. Next, she shared a brief summary of the research base for

SRSD for students with emotional behavioral disorders (EBD). It was explained to teachers that previous studies have involved research assistants as writing teachers rather than the child's classroom teacher.

The researcher then discussed opinion essays. Another characteristic of effective professional development is attention to content knowledge needs of teachers, including, pedagogical knowledge (Harris et al., 2012). Essential genre elements of opinion essays, general characteristics of effective writing, and the teachers' goals for their students writing were discussed. The teachers were asked to share the current instructional techniques they found effective during writing instruction. Teachers reported use of writing approaches or curriculum such as Writers Workshop and *Step Up to Writing*. The lead researcher explained that elements of these approaches are consistent with the goals of SRSD and that teachers could, and should, integrate these curriculums as they desired, and that in fact they would find many of them already integrated into the SRSD lessons (Harris, Graham, Mason, & Friedlander, 2008; Harris, Graham, Brindle, & Sandmel, 2009).

Third, the teachers and lead researcher explored the SRSD approach for writing instruction. The teachers watched a commercially produced 1-hour video of class-wide SRSD instruction in writing opinion essay (Association for Supervision and Curriculum Development, 2002). The video follows students and their two teachers through all six stages of instruction (e.g., *background knowledge, discuss it, model it, support it, memorize it, independent practice*).

In order to provide special education teachers with concrete images that demonstrate how to apply instructional practices in their classrooms and interactive feedback and discussion on the topic area being covered (e.g., Borko, 2004), the video was

stopped after each stage of instruction to hold discussion and answer questions. The lead researcher and teachers discussed what they could expect from their students and the importance for explicit, scaffolded instruction in writing and self-regulation strategies (Harris et al., 2012). Teachers were informed that students with EBD might benefit from ongoing development of these strategies over time.

Finally, each teacher received instructional notebooks and copies of all materials for their students. The lead researcher went through and oriented the teachers to the material and discussed the SRSD lessons. It was also explained to teachers that although they were receiving scripted lesson plans that explain how to teach SRSD, they were not "expected" to follow the scripted lesson plans. Instead the lesson plans were provided for teachers to consult during SRSD instruction. The teachers were asked to begin using SRSD instruction the next time a writing session occurred.

PD content. Persuasive essay writing was taught using the mnemonic POW+TREE in combination with the SRSD model of instruction (Harris et al., 2008). The mnemonic POW+TREE helps students remember to (P) pick your topic, (O) organize your notes, (W) write and say more, and (T) topic sentences, (R) reasons three or more with at least one counter reason, (E) ending (E) examine.

The SRSD approach contains six basic stages of instruction that are used to develop writing and self-regulation strategies. Throughout the stages teachers and students collaborate on the acquisition, implementation, evaluation, and modification of these strategies (Harris, Graham & Mason, 2003). The stages can be reordered, combined, revisited, modified, or deleted to meet student and teacher needs. The stages are meant to be recursive. If a concept or component is not mastered at a certain stage, teachers and

students can come back to or continue that stage as they move to others. Some students may not need to be taught each stage. For example, some students may already have background knowledge required to use the writing strategy and self-regulation process.

Lessons typically run between 20 to 60 minutes and are conducted three times a week. For typically developing students in the elementary grades, 8 to 12- 30 to 40-minute lessons are usually required for students to complete the stages (Harris et al., 2003). The stages of instruction represent the framework for instruction. Following is a discussion of critical characteristics of SRSD instruction and guidelines for evaluation of this process. See Table 2.

Table 2.
Stages of SRSD Instruction

Stage	**Description**
1. Develop Background Knowledge	Previous background knowledge is activated and discussed to ensure students have background knowledge and the skill necessary for writing task.
2. Discuss It	Students and teachers examine current writing performance. The new strategy is introduced and discussed. Students commit to using the new strategy.
3. Model It	Teachers use “think alouds, “ visual aids, and models the new strategy for the students.
4. Memorize It	Students memorize the mnemonic devices and visual aids to memorize the new strategy.
5. Support It	Students practice the writing strategy and teachers scaffold instruction as needed.
6. Independent Performance	Students use the new writing strategy independently.

Note. Adapted from Harris, Graham & Mason (2003).

Develop and Activate Background Knowledge. During this stage, background knowledge and pre-skills such as vocabulary (terms like setting, characteristics) concepts are taught to students. Additionally, students learn how to use self-statements. Self-statements, referred to as self-speech, are a powerful form of self-regulation (Harris et al., 2003). The teacher elaborates with students to develop statements that are relevant to writing and to students' individual needs and characteristics. For example, a student who becomes frustrated and quits easily can be taught to say, "I can do this if I use my strategy and take my time." The teacher discusses with the students how statements they say to themselves might help or hinder them, and students are asked to share some of the self-speech statements they currently say to them themselves when asked to write and how it helps them (Harris et al).

Discuss It. During this stage, the teacher and students discuss the strategies the student will learn and the teacher carefully explains the writing strategy (Harris et al., 2003). Each step of the writing strategy is explained using the mnemonic POW + TREE. Teachers establish the significance and benefits of writing and self-regulation strategies. The teacher and students discuss how and when to use the strategies. Teachers help students identify new situations and various tasks that students can use the new strategy they learn. Students are asked to make a commitment to learn the writing and self-regulation strategies and act as a collaborator in both learning and evaluation of the strategies (Harris et al).

Next, the teacher and their students examine their present level of performance on the targeted writing genre by looking at the student's writing portfolio and evaluating their work. The purpose of examining present levels of performance is to set the stage for

strategy instruction and help students see what they are doing now and what they can expect once they learn the strategies. This is conducted in a positive, collaborative manner.

Model It. Next, the teacher models the composition strategy and types of self-instructions while writing an actual composition. The teacher models problem definitions (what is it I have to do here?), focuses attention and planning (I have to concentrate; first I need to…then…), uses strategy step statements (I need to write down my strategy reminder), self-evaluation statements (have I used all my parts-oops, I missed one, better add it in), coping and self-control statements (I can handle this; go slow and take my time), and self-reinforcement statements (I like this ending!) while writing a composition. The self-instructions match the students' verbal style and language, which helps them to develop their own statements later. Teachers use a graphic or chart listing the strategy steps or detailing a mnemonic, and a graphic organizer for writing.

The teacher and students discuss the importance of self-statements, goal setting, and self-assessment that the teacher used once self-regulation of the strategy has been modeled. At this point, students begin developing their own self-statements and recording them on paper. The teacher and students collaboratively discuss the strategy steps and emphasize generalization of the strategy to other tasks and settings.

Memorize It. During this stage, students are required to memorize the steps in the composing strategy and the meaning of any mnemonics used either to represent the strategy steps or some part of the steps (Harris et al., 2003). Memorization of the strategy continues throughout the rest of the lessons and teachers require students to memorize one or more self-statements form their personal lists they generated.

Support It. Teachers support or "scaffold" students' strategy use at this stage. Additional self-regulation strategies such as goal setting, self-monitoring, or self-reinforcement are discussed, initiated, or expanded. These components support motivation, maintenance, and generalization. The teachers provide as much support or assistance as needed and write collaboratively with any students who need this level of assistance. The teacher and students collaboratively determine challenging but doable goals for each individual student.

Prompts, interaction, and guidance are faded at a pace that is appropriate for individual students. Throughout this stage, the teacher and students continue to plan and initiate generalization and maintenance of the strategies. This is the longest of the six stages for students and they are given adequate time and support to master the strategy.

Independent Performance. Students are encouraged to transition to use self-statements covertly ("in your head"). Students are able to use the strategies independently and self-regulation procedures are continued or gradually faded as appropriate.

Phase two: Collective Participation

Collective participation, referred to as *coaching* was designed to provide ongoing professional development about the content learned in the professional development workshop. Lane et al. (2011) suggests ongoing professional development is critical to supporting practitioners in the field of EBD. Thus, a second phase of intervention, coaching, was designed to provide follow up support to teachers after the single workshop. During this phase, the lead researcher's role shifted to a coach in order to nurture the teachers' development and to support him or her in whatever capacity was needed while maintaining awareness, knowledge, and respect of the teacher. The PD literature supports

coaching as an intervention and studies have shown that a combination of in-service training and follow-up support can promote change in teachers' behavior (Knight & Wiseman, 2005; Yoon et al., 2007). Coaching sessions took place in the teacher's classroom and lasted 30 to 60 minutes one time per week during his or her prep period or before or after school. The number of coaching sessions ranged from 1 to 3 (M = 2.33; SD = 1.15) because the school year ended. Each session was audio recorded.

Coaching procedure. The Partnership Approach provides a framework for instructional coaching that was developed at the University of Kansas for Research on Learning (Knight, 2007). The Partnership Approach was used to provide follow up support to each teacher. The Partnership Approach is based on principles of equality, choice, voice, dialogue, reflection, praxis, and reciprocity. The seven principles are intended to provide a conceptual language for instructional coaching and describe how they go about working with teachers (Knight, 2007).

E*quality* suggests that coaching involves equal relationships and teachers' thoughts and beliefs are a valuable component of coaching. *Dialogue* is considered to be the heart of instructional coaching. These two principles provided the foundation for how the coach behaved during each coaching session and how the teachers and coach would learn and explore ideas together.

Teachers should have *choice* regarding how and what they learn. During each coaching session, the coach began by asking the teacher what he/she would like to discuss. This is an important component because it helps teachers learn content to support their students' learning (Knight, 2007).

Next, the coach provided the teacher with opportunities to *voice* his or her point of view about the content being learned rather than forcing him to think in a certain way. Therefore, teachers were asked during each coaching session what components of SRSD they wanted further assistance with.

Each coaching session provided teachers with a chance to reflect using reflective question recipes. Reflection is considered an integral part of professional learning (Knight, 2007). Question Recipes that were developed through the Kansas University Center for Research on Learning were used to encourage reflection (Knight, 2007). These questions are open-ended and consequently encourage detailed, broader responses. Second, they are non-judgmental: they do not prompt responses that can be judged right or wrong. This allowed for the teacher to reflect on his or her practice. Some examples of open-ended, nonjudgmental questions that were used in the current study are (a) Tell us more about that… (This encourages respondents to expand upon their comments), (b) How do you see this working…? (This encourages discussion about potential success and challenges that participants encounter), (c) What questions do you have about…? (This encourages participants to ask questions about the material).

Finally, the teachers were asked to set a goal for their writing instruction that they wanted to incorporate into their subsequent writing sessions. This helps teachers apply their learning to their classroom instruction as they are learning. Praxis is established when teachers have a chance to really consider how they teach, opportunities to learn the new approach, and shape the new approach in their classroom until it can work (Knight, 2007). At the next coaching session, the coach followed up with the teacher on the goal that

had been set previously. The coaching tasks would repeat with the same cycle of questions during each coaching session.

Materials

Professional Development Materials

A few days before the professional development began, teachers received a copy of an article to read that described the SRSD procedures and background research (Harris et al., 2009). A majority of the materials for this study were based on the SRSD model and were used in previous studies (Mason and Shriner, 2008; Mason et al., 2010; Mastropieri et al., 2009) although materials were tailored to meet the demands of the current population and study. See Appendix A for examples of the materials.

Teaching Materials Given to Teachers

During the workshop, each teacher was provided with a binder of materials for the entire study that contained seven detailed lesson plans with copies of all student materials needed to teach the lessons. These student materials included a structured graphic organizer with/without picture prompts, transition words, self-monitoring rockets, genre parts cards for memorizing mnemonics and their meanings, and writing prompts to be used throughout instruction.

Student Materials

The student materials included individual student folders that were used to store all the materials from the study for an individual student (see Appendix A). Students' folders included: (a) a POW+TREE mnemonic chart; (b) graphic organizer; (c) a transition word chart; (d) a self-statement sheet that contained positive statements the student could say to themselves while they work; and (e) a goal setting chart.

Data Collection Procedures and Measures

Several methods and measures were used to collect the data for this study. Data on The following constructs were collected using the measures described below:

- Teacher beliefs and knowledge about their writing instruction
- Teacher instructional behaviors during writing instruction
- Social validity from the teacher and student perspectives
- Writing outcomes of students on persuasive essays

Teacher Beliefs and Knowledge

Teachers completed two short interviews with the lead researcher during baseline and after Phase I of intervention. Each interview lasted approximately 30 to 60 minutes. The lead researcher used a series of questions that related to their knowledge, attitudes, and dispositions about writing instruction, but respondents had opportunities to expand their responses with related insights or observations. The lead researcher followed up on teacher insights and observations with additional questions to gain a deeper understating of their experiences. These interview data were used to address the quantitative findings that might not be explained through single subject design. All interviews were recorded and transcribed verbatim. See Appendix B for the interview protocols.

Teacher Instructional Behaviors

Partial interval recording was used to observe and code the teachers' writing instruction. Coders observed whether or not the target behavior (i.e., writing instructional techniques) occurred during a pre-determined interval (i.e., 60 seconds). See Appendix C for the full coding manual.

In short, during each interval, observers coded whether any of the following behaviors occurred: (a) developing background knowledge (e.g., identify characters of a story), (b) discuss it (e.g., discuss what good writers do), (c) model it (demonstrate verbally and visually how to write an essay), (d) memorize it (e.g., memorize steps of the strategy), (e) support it (e.g., monitor student performance), (f) self-statements (e.g., develop self-speech that helps students cope with difficulty), (g) independent practice (e.g., students perform a task independently).

Development of instructional codes. Previous research on writing professional development models has not included rigorous measures of actual teacher writing instruction. Because of this lack of previous coding protocols, the lead researcher of the study had to develop a novel coding protocol. First she defined seven instructional codes based on the conceptual and operational definitions of SRSD. While it is possible there may be other effective and desired writing instructional behaviors, the lead researcher chose to use the seven instructional behaviors of SRSD because it is the only writing instructional approach that has been conducted with students with EBD. Furthermore, Harris et al. (2012) suggests that SRSD includes many instructional techniques found in other writing approaches (e.g., 6 + 1 traits of writing, writers workshop), so it is more than a set of narrow procedures to follow.

Examples and non-examples of each code were generated by imagining all different types of writing instruction that might occur in a classroom. The lead researcher then observed in general and special education classrooms to test the seven codes and the examples and non-examples. She also evaluated different lengths of intervals to determine which length would best capture the behavior of interest. It was observed that longer

intervals captured the behaviors more frequently than shorter intervals and that the behaviors tended to have reasonably long duration (e.g., 60 seconds or more), unlike a rapidly changing construct such as student engagement. Consequently, it was determined that a longer interval (e.g., 60 seconds) was required so that the seven instructional behaviors would not be under or over estimated. Then, the lead researcher refined the codes based on these observations and field-tested the codes at several more sites using the current definitions, examples, and non-examples and 60-second intervals. The field protocol was tested in a total of five classrooms before the study began.

Partial interval coding. Teachers' writing instructional behaviors were measured using partial interval recording (Kazdin, 1982). Partial-interval recording is a recording strategy that involves recording whether or not a behavior occurred at any point during a specific time period, in this case, whether target writing instructional behaviors occurred during each minute (e.g., 60 seconds) of their instruction. Each interval was indicated to the researcher by a timer that sounded every 60 seconds and behaviors were coded using the Behavior Coding Form (see Appendix D). It is possible for more than one behavior to occur during the interval; however only one interval was counted. In addition, teachers may demonstrate the same behavior over several intervals. Once the session was completed, the number of intervals when any of the target behaviors occurred was added together, divided by the total number of intervals and multiplied by 100 to yield the percentage of intervals where at least one of the target behaviors occurred. This percentage was reported for each writing session that was observed.

SRSD writing instructional behaviors. Partial interval coding only measures whether or not a behavior occurred. Therefore, the intervals were examined to determine

which behaviors (e.g., *Background knowledge, Discuss it, Model it*, S*upport it*, *Self-statements*, *Independent practice*, or *Memorize it*) the teachers used to teach writing using SRSD. For each of the seven writing instructional behaviors, a percentage was computed by adding together the *target* writing instructional behavior (e.g., *Develop Background Knowledge*) and dividing it by the total number of instructional behaviors that occurred throughout the entire session. In this way, we were able to look at the characteristics of the target behaviors in relation to each other rather than the number made by each person.

Duration of data collection sessions. The teachers' writing instruction ranged from 35 minutes to approximately 1 hour in length. Teacher B and Teacher C had longer writing periods in comparison to Teacher A. Teacher B taught high school and class periods ranging from 30 minutes to 60 minutes. Teacher C's writing periods were of longer duration because he only taught writing two days a week. Since the writing instructional periods were not of equal duration, it was determined to evaluate the first 30 minutes of each writing instructional period. This decision was based on several factors. First, for consistency, it was desirable to include behaviors during the same amount of time. Second, previous investigations suggest SRSD lessons usually last 30 to 40-minutes and additional instructional time was often spent on other activities; this proved to be the case in the current study. Finally, comparisons of behavior during the first part of sessions with the middle and/or last part of a session have found no significant differences between scores from the first part of a session and second part of a session (Hughes, Carmichael, Pinkerton, & Tizard, 1979; Johnson & Bolstad, 1975; Kier, 1996).

Recording device. Sony Digital video cameras were used to capture the full writing instructional period 2 to 3 days a week. The cameras were set up in the back of the

classroom near the teacher's desk. The lead researcher of the study, a research assistant, or the classroom teacher set up the video camera before the writing lesson began.

Observer training. While much of the video was coded by the first researcher, two research assistants helped with the project. These assistants were rigorously trained before they collected data from the video. First the lead investigator held a discussion with the observer trainees about the seven coding categories followed by video clips for each code. The second step of the training involved showing the recording method to the trainees. The trainees were asked to engage in an exercise to use the coding method so that questions could be addressed. The trainees were required to independently and accurately use the coding recording method before they could move to the next step. Finally, trainees independently coded two writing lessons using the coding form and compared the results with the lead researcher. The trainees were trained to 85% reliability on the coding manual. Then the lead researcher and the observer trainees discussed any discrepancies with the codes.

Interobserver reliability. Reliability was evaluated to assess whether there was agreement on each instance of the observed writing instructional behaviors for each teacher's writing lesson. The lead investigator of the study and the trainees independently viewed 33% of the sessions during baseline, Phase I, and Phase II of intervention. Then the scoring of the trainees' responses were compared to estimate reliability using the point-by-point method on the type of behavior coded in which the number of agreements was divided by total (agreements plus disagreements) during each phase of the study. The overall reliability at baseline was 86%. For the first phase of intervention, the overall reliability was 89% and for the second phase of intervention, 93%. Disagreements were

discussed and the appropriate code was assigned to the behavior, bringing the final agreement to 100%. See Table 3 for a summary of reliability scores for each SRSD instructional behavior across phases.

Table 3
Reliability of Writing Instructional Behaviors

	K	D	L	M	P	S	I
Baseline	85% 66%-100%	84% 62%-100%	88% 83%- 100%		72% 66%-80%	100%	
Phase I	95% 75%-100%	89% 77%-100%	85%	100%	78% 71%-84%	78% 71%-100%	100%
Phase II		87% 75%-100%	91% 88%-93%	100%	87% 85%-90%	100%	

Codes. **K** = Develop Background Knowledge; **D** = Discuss It; **L** = Model It; **M** = Memorize It; **P** = Support It; S = Support It; I = Independent Performance

Student Writing Outcomes

Writing outcomes were evaluated in baseline, Phase I, and Phase II of the study. Writing was measured by providing a persuasive prompt to students and asking them to write an essay about it. Written essays were evaluated based on the number of essential essay elements in each essay. These scores were then averaged together for each classroom. Each student completed at least one persuasive essay during baseline and the first phase of intervention. During the second phase of intervention only students in Teacher A and Teacher B's classrooms responded to persuasive writing prompts because of end of the school year constraints.

Persuasive writing prompts. Teachers were given a list of 22 persuasive writing prompts (see Appendix E) in the form of a question soliciting an opinion on home or school issues (e.g., Should children go to school in the summer?). On the days students responded to writing prompts, the teachers chose which prompt the students would respond to. The persuasive writing prompts have been validated in previous investigations (Saddler, Moran, Graham, & Harris, 2004). Teacher B and C chose to develop their own prompts for students to write about that they thought were more relevant to their secondary students (e.g., should kids have to take state tests?). The prompts that they created were a variation of the list of prompts that were given to them.

The teachers administered the writing prompt to the students during daily writing instruction and informed them that they could take as much time as they needed. Students were also informed that the teacher could assist them with spelling a word. After each essay was written, the teacher read through the student's essay to make sure all words were legible. If there were any illegible words, the teacher wrote the word legibly next to the illegible word. The teacher then made copies for the researcher and kept copies of the students' essays for them to graph on their goal sheets.

Essay elements. Each essay was scored to determine the number of essential persuasive elements included: (a) topic sentence (e.g., statement indicating what the author believes); (b) more than three reasons (e.g., explanation as to why an author believes a particular premise) or an explanation of why they refute using a counter-reason; (c) ending sentence (e.g., a closing statement or a statement that brings the author's ideas together); and (d) elaboration (e.g., additional information or examples for a premise, reason, or conclusion). A score of a 1 was awarded if an element was present, and a score of

a 0 if it was not present. A total of 8 elements could be earned for each essay. Next, each student's score was added together to compute the mean and standard deviation for the class.

The lead researcher of this study scored all essays. In addition, in order to establish inter-rater reliability, a person blind to the purpose and conditions of the study scored 33% of the essays. This research assistant was trained using essays not related to the current study by (a) discussing the essential elements, (b) practice scoring 4 unrelated persuasive essays, (c) and resolving conflicts between the primary and secondary scorer. Reliability estimates were calculated using the point-by-point method in which the number of agreements was divided by total (agreements plus disagreements), and multiplied by 100. The inter-rater reliability across all essays was 89%. Disagreements were discussed and the appropriate code was assigned to the behavior, bringing the final agreement to 100%.

Procedural Reliability

A researcher-developed checklist was created to assess the extent to which the professional development leader adhered to the intervention guidelines for professional development (see Appendix F). The professional development session was video recorded and evaluated for the following elements: (1) providing teachers with background knowledge and research on SRSD, (2) genre-specific information related to opinion essays, (3) SRSD content that included specific information on the seven instructional writing behaviors, and (4) materials for each teacher. Procedure fidelity estimates were calculated by dividing the number of correct professional development tasks ("yes" or "no") by the total number of items, and multiplying by 100. Procedural fidelity was calculated for two of

the three professional development sessions. Procedural fidelity for professional development was 100%.

For coaching, a researcher-developed checklist was created to assess the extent to which the coach adhered to the intervention guidelines for coaching. Each coaching session was audio recorded and evaluated for the following elements: coaching tasks and coaching behaviors (see Appendix G). Coaching tasks included: (1) asking the teacher what they would like to discuss, (2) asking the teacher what further assistance they would like with the content, (3) providing teachers with reflection time, and (4) helping teachers set goals for their writing instruction and following up on those goals. The coaches behavior was assessed by: (1) allowing the teacher to choose what they would like to discuss, (2) providing teachers with opportunities to express their point of view about the content, (3) engaging in dialogue, and (4) allowing the teacher to reflect and think about ideas for future instruction. Procedural fidelity estimates were calculated by dividing the number of "correct" coaching tasks and behaviors ("yes" or "no") by the total number of items, and multiplying by 100. Procedural fidelity for coaching tasks was 93%.

Social Validity

Social validity assessments evaluate the acceptability of a programmed intervention (Schwartz & Baer, 1991). The purpose of these measures was to assess teachers' and student's acceptability of the program, goals, methods, and outcomes related to SRSD on two occasions. Teachers completed the *Intervention Rating Profile* (IRP-15; Martens, Witt, Elliot, & Darveaux, 1985) during baseline after being provided with a description of the purpose and design of the study intervention. Students completed the *Children's Intervention Rating Profile* (CIRP; Witt & Elliot, 1985) during baseline after a description of

the purpose and design of the study intervention. After the completion of the first and second phases of intervention, the teachers and students again completed the IRP-15 and CIRP rating scales (see Appendix H) to obtain their opinion regarding the social significance of the intervention goals, the acceptability of the procedures, and social importance of the intervention outcomes.

Intervention Rating Profile-15 (IRP-15). The IRP-15 consists of 15 items that assess treatment acceptability. Teachers rate 15 statements about procedures and outcomes (e.g., "I liked the procedures used in this intervention.") on a six point Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree). Total scores range from 15 to 90, with higher scores indicating high acceptability. Internal consistency estimates range from .88 to .98. Teachers completed one rating profile for their entire class rather than for individual students.

Children Intervention Rating Profile (CIRP). The CIRP assesses students' perceptions of treatment acceptability. Students rate seven items on a 6-point Likert scale ranging from 1 (I do not agree) to 6 (I agree). Total scores range from 7 to 42, with high scores indicating high acceptability. Internal consistency reliabilities range from .75 to .89. Teachers were told not to guide student answers. Teachers administered the CIRP to students before participating in the PD and after the last collective participation ended. Teachers provided students with directions for completing the survey and read each item aloud. Teachers were instructed by the lead research to avoid guiding students' answers.

Chapter Four: RESULTS

The purpose of this study was to examine the effects of high quality professional development with coaching on teachers' dispositions, writing instructional practices, and student outcomes. Data were collected via teacher interviews, observations of teachers' instructional behaviors, students writing samples and student and teachers perceptions of the intervention. The following research questions were asked:

1. What are special education teachers' knowledge, attitudes, and beliefs about their writing instruction prior to attending a professional development workshop on SRSD?
2. What effect does a professional development workshop with coaching have on special education teachers' use of SRSD instructional elements during their writing instruction?
3. What are the changes in special education teachers' knowledge, attitudes, and beliefs about their writing instruction after attending a professional development workshop on SRSD?
4. What effect does professional development and coaching on SRSD have on students' persuasive writing essays?

This chapter addresses the results of the study in four sections. The first section will describe the data analyses used in the study. The second section will report the results of the experimental examination of the effects of the professional development and coaching on each teacher's writing instruction. In addition, this section presents the results from teacher interviews related to special education teachers' beliefs, and knowledge about their writing instructional practices in their classrooms prior to receiving intervention and

following the professional development. The third section will present results on students' writing achievement. The fourth section of this chapter will present the results of both teachers and students perceptions of learning about strategy instruction.

Data Analyses

Writing Instruction

Teacher's writing instruction was analyzed using visual analysis. Kazdin (1982) describes visual analysis of single case data as "reaching a judgment about the reliability or consistency of intervention effects by visually examining graphed data" (p. 232). Single case researchers rely on visual analysis of the data to determine whether there is (a) evidence of a relationship between and independent variable and an outcome variable and (b) the strength or magnitude of that relation (Kazdin, 1982; Kennedy, 2005; White & Haring, 1980).

The visual analysis for this study was conducted according to four rules proposed by Kratochwill, Hitchcock, Horner, Levin, Odom, Rindskopf, & Shadish (2010). First, a predictable baseline pattern of data was documented. Since a convincing baseline pattern was documented, the lead researcher then examined the data within each phase of the study to assess the within-phase patterns. It is important to assess whether there are enough data with sufficient consistency to demonstrate a predictable pattern of responding. Third, she compared the data from each phase with the data in the adjacent phase to assess whether manipulation of the intervention was associated with the effect. An effect is demonstrated if the manipulation of the intervention (professional development plus coaching) is associated with a predicted change in the pattern of the dependent variable (teacher instructional behavior). Finally, she integrated all the information from the phases

of the study to determine whether there are at least three demonstrations of an effect at different points in time. Following these four rules, the lead researcher used the following five features to examine within- and between phase data patterns: (a) level, (b) trend, (c) immediacy of effect, overlap, and (d) consistency of data patterns across similar phases (Kazdin, 1982; Kennedy, 2005).

Condition length. The length of a condition refers to how long the condition is in effect. This was calculated by determining the number of data points plotted in the condition.

Level. The term level refers to the mean score for the data within a phase. Level stability refers to the amount of variability or range of data point values in a data series. A small range of values is considered stable. If 80% of the data points of a condition fall within a 20% range of the median level of all data point values of the condition, applied researchers considered the data stable (Gast & Spriggs, 2009). In order to calculate the median level of a data series, the lead researcher sequenced the data point values from low to high and determined the median data-point value. She then drew the median line parallel to the abscissa at that value and placed a stability envelope over the median line. The stability envelope refers to the two parallel lines where one line is drawn above and one line is drawn below the median line and the distance or range between the two lines indicates how much bounce or variability there can be in the data series to be considered stable (Gast & Spriggs). The stability level was calculated only once for a behavior and was placed over the median line of the original condition and all other phases (Gast & Spriggs).

Trend. Trend refers to the slope of the best fitting straight line for the data within a phase; typically a trend is accelerating (increasing) or decelerating (decreasing). The split-

middle method, as described by White and Haring (1980) provides a reliable estimate of trend, and, therefore is recommended for use with variable data patterns. This method was used in this study.

Immediacy of effect. The immediacy of effect refers to the change in level between the last three data points in one phase and the first three data points of the next. The more rapid or immediate the effect, the more convincing the inference that change in the outcome measure was due to manipulation of the intervention (e.g., professional development).

Overlap. The percentage of non-overlapping data points (PND) refers to the proportion of data from one phase that overlaps with data from the previous phase. The smaller the proportion of overlapping data points, the more compelling the demonstration of an effect. PND was calculated by (a) determining the range of data point values of the first condition; (b) counting the number of data points of the second condition; (c) counting the number of data points of the second condition that fall outside the range of values of the first condition; and (d) dividing the number of data points which fall outside the range of first condition by the total number of data points of the second condition and multiplying this number by 100 (Scruggs & Mastropieri, 1998).

SRSD instructional elements. A secondary analysis of teachers' writing instruction was conducted to examine the specific SRSD instructional behaviors for each teacher across each phase of intervention. Descriptive analysis was used to describe teachers' use of each type of writing instructional behavior. For each session, the percentage of each SRSD instructional behavior were computed by adding together the number of writing instructional behaviors by category and dividing by the total number of writing

instructional behaviors that occurred. Next, the mean percentage of instructional behaviors was calculated for each category across all three phases.

Teacher interviews. Teacher interviews were used to inform the quantitative findings and took place before teachers participated in the professional development and after Phase I. After all interviews were completed and transcribed, common threads were identified. Each recorded transcript was read through several times during the process of identifying common themes in order to prevent any inadvertent omission of less expected or less obvious data themes. The researcher did not predetermine categories in which to place data, but chose to allow the categories to emerge upon reading the transcripts. The researcher used the following set of questions suggested by Seidman (1988) in order to help with data analysis:

> What connective threads are there among experiences of the participants they interviewed? How do they understand and explain these connections? What surprises have there been? Have their interviews been consistent with the literature? How inconsistent? Have they gone beyond? What do they understand now that they did not understand before they began the interviews? (p. 111)

Broad themes were identified and other useful information was gathered. Further analysis using the constant comparison method began with low inference codes, grouping of codes into themes, followed by relating of themes (Miles & Huberman, 1994). The data were then organized into a table, which allowed for quick scans of the data, comparisons across data elements, and clustering ideas together. This process allowed the researcher to select from the interviews illustrative details and reflect on them so the interview data could further

enrich the quantitative data. Wolcott (1994) describes the examination of interview data as a three-part process including description, analysis, and interpretation.

Student outcomes and social validity measure. Descriptive analyses were used to describe students' writing performance on writing prompts and treatment acceptability. The number of persuasive writing elements per phase is reported by means and standard deviations.

Results

Question 1: What are special education teachers' knowledge, attitudes, and beliefs about their writing instruction prior to attending a professional development workshop on SRSD?

Teachers were interviewed prior to participating in the PD to illuminate the quantitative findings at baseline. The following four themes emerged: (a) instructional practices; (b) implicit beliefs about writing instruction; (c) students' self-efficacy towards writing; (d) resources to teach writing.

Instructional practices. During the individual interviews, all three teachers discussed how they teach writing. The teachers repeatedly discussed looking at the individual learner and the task or skills of writing. Teacher B spoke about "going back to the basics of paragraph writing and then really individualizing it because that's what works for these kids." Furthermore, she expressed using a direct instruction approach to teach writing with her students. "This is what you do first, then this, then that….so they can memorize the parts because EBD kids struggle with the organization of writing not the ideas so I have to go step by step which seems monotonous and boring but once they get it, they are like, oh!"

Teacher C used rubrics to let the students know the expectations of a writing assignment. He taught students how to plan, draft, and edit papers on the computer. Teacher C thought of writing instruction as "A gradual release of control by working together in groups and scaffolding the process together." Teacher C stated that modeling is tough because "my students do not listen a lot and have short attention spans…so if I talk about my thoughts that are in my head they are not going to process or internalize the ideas." Similarly, Teacher A commented that he designs mini lessons to teach his students how to plan, prewrite and draft, however… "Each of these is a separate lesson and not something they will automatically do on their own."

Teacher A expressed his desire to make writing fun and invest students in learning how to write to make the process more enjoyable. Teacher A explained "When I first think about writing I think how can I make it something they are going to buy into and after how can I get a decent product from them and then what can I do to have them reflect on their writing."

Implicit beliefs about writing instruction. Teachers expressed their attitudes about teaching writing. Teacher C expressed that he did not like to teach writing… "I would tell you I enjoy teaching history, science, reading, or even math. Writing would be at the bottom." Teacher C explained that he had majored in writing in college and viewed himself as a perfectionist, then proceeded to articulate during the interview that… "Maybe my own personal writing process inhibits the way I teach it because I edit as I am going and won't put words down and then I will go back and redo it. Ironically, it is my least favorite subject to teach." During the interview with Teacher A, he explained that writing was one of his least favorite subjects to teach even though he likes writing, "I think it is one of the subjects

in elementary school where there is the least amount of guidance and the biggest gap in achievement levels between students."

In contrast, Teacher B expressed interest in teaching writing even though she admitted it is a lot harder than she ever thought it would be. She further explained, "I think it is because there [is not] a lot of writing curriculum for special education kids. There is writers workshop but that is geared toward lower grade students so for older students that have writing goals there is not a lot out there."

Students' self-efficacy toward writing. It is worthy to note that during the interview teachers felt that their students did not enjoy writing. Teacher A commented, "Writing is a chore, something they have to do… Some students will write to relieve stress but at that point it's not the same as academic writing." Furthermore, Teacher A goes on to mention they just want to get it done. "I mean I try really hard to get them to slow down and go through a process, but usually they want to know what they need to do to get this done, the steps they need to do to be finished with it." Teacher B also found that her students find writing difficult:

> This is dumb, why is it this hard to write…they hate everything about it! They don't see a point in it and I think a majority of them are not good at it. Now they have this massive test ahead of them and it is like a black cloud over their head so they just shut down and don't write because it is tough.

Teacher B further explained that some of her students have already taken the state test and failed it once so they do not see the point in learning to write because they have failed at it for so many years. Teacher C mentioned his students had similar thoughts about writing… "A lot of them have an innate reluctance for writing. Their knowledge is pretty limited

when it comes to writing…there is a lot of reluctance to even write one sentence or a complete thought." Teacher C thought that his students' knowledge in writing is limited because of their reading ability… "Students with little exposure to different types of literature have less exposure to different forms of writing and sentence structure so the two go hand in hand and of course students would be reluctant to write."

Resources to teach writing. Teachers often identified bits and pieces of curriculum or materials they have used to teach writing. Teacher B explained,

> I just went to a Step Up to Writing Workshop, but the material is just so young that I end up having to differentiate it completely and then I ask myself 'why am I using this?' It is hard to balance language arts standards and curriculum that match my student's level.

Teacher B articulated… "I usually find all of the ideas of other general education language arts teachers and then I adapt what they've done. Sometimes I realize something went terribly wrong in the lesson and I go back and adapt it." Teacher A also credited the Internet to make his own materials. Teacher C similarly mentioned that he found materials on the Internet or from classes where he received his Masters Degree. Teacher C discussed his knowledge of teachers in the district using Writers Workshop but he did not use the curriculum in his class. Furthermore, he expressed, "I really want them to perform well on state test but as far as district and a pacing guide and a curriculum there's just not as much as there are in other areas."

Strategy Instruction. All three teachers acknowledged they had received some sort of training on strategy instruction in their pre-service teacher education and that incorporating it into their writing instruction would benefit their students. Teacher C

commented… “Ughh! I actually only spend 25% of my writing time on strategies. Guiltily, I wish I reflected on my practice more, my instruction is more grammar or functionally based but I absolutely think strategies will benefit my students.” Similarly, Teacher A admitted,

> I don't spend as much time as I should. We’ve all learned some writing strategies that we can use in a form of writing and help students generalize to other areas but we don't spend as much time on strategies in writing.

Teacher B admitted having learned about them in college, “but never been like specifically trained in depth on how to use them.” However, Teacher C articulated that he had used the strategy TREE in the past but had not used it this year.

Question 2: What effect does a PD workshop plus coaching have on special education teachers’ use of SRSD instructional elements during their writing instruction?

Professional development had an effect on teachers’ writing instruction, while the results from coaching are less clear. It is possible that coaching maintained teachers’ implementation of SRSD writing instructional elements. Figure 4 displays teachers’ writing instructional behavior across each phase of intervention. Each teacher’s writing instruction was analyzed using visual analysis of single case data.

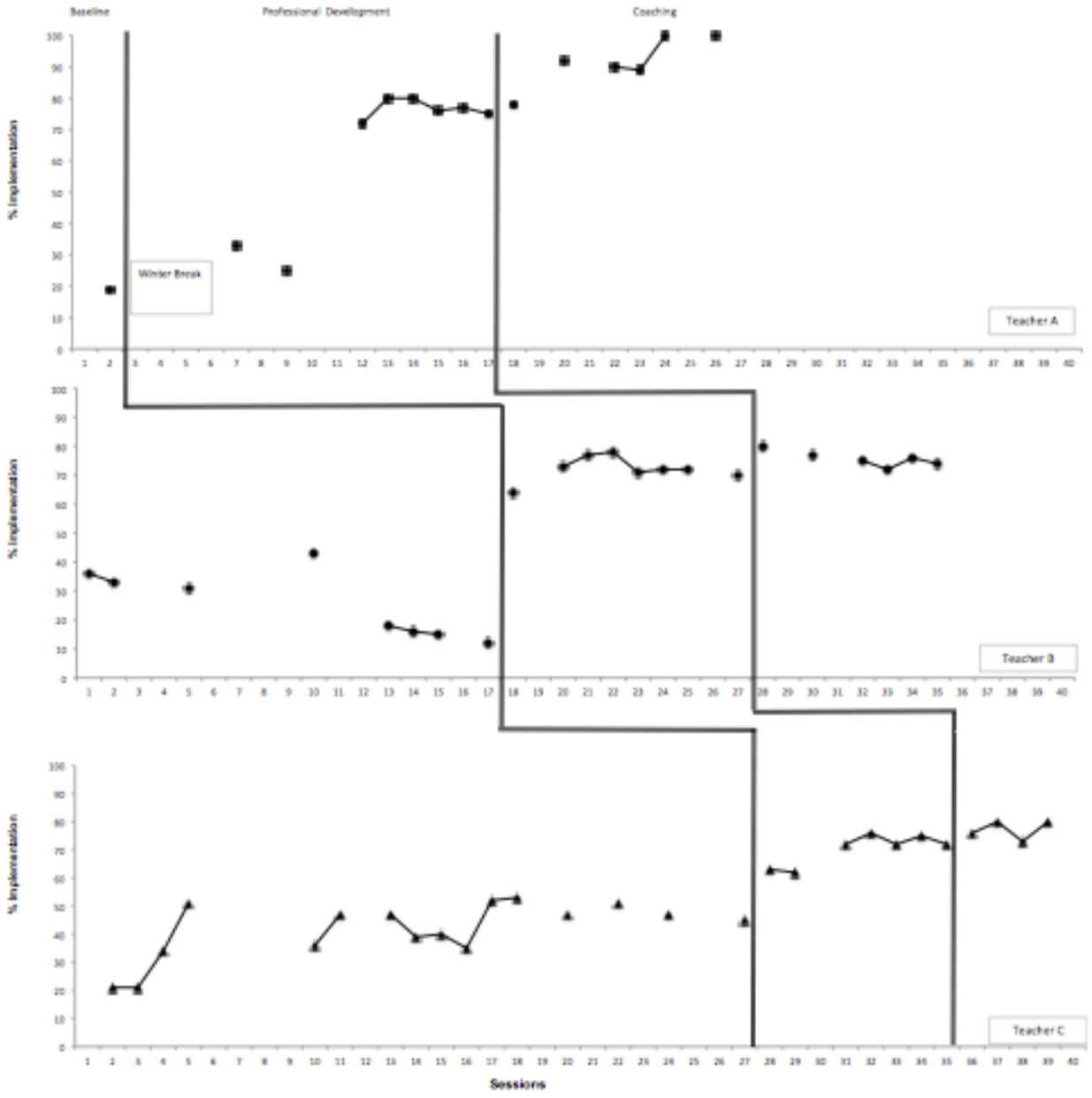

Figure 4. Percentage of Intervals with Target Teacher Instructional Behaviors

Teacher A. Only one baseline measure was collected for Teacher A. The researcher had used live coding for the first two observations and afterward determined it would be best to use video for coding; therefore, the first two observations were not included in the study. Following the professional development workshop, the data demonstrate a delayed

effect, 33% (up from 19%) in level. The teacher mentioned that his students have difficulty adjusting back to a school schedule after extended breaks such as winter break and that writing instruction was difficult during those sessions. The percentage of instructional behaviors ranged from 33% to 75%, demonstrating a wide range of variability. On session 12, Teacher A showed a significant increase in the percentage of writing instructional behaviors, 72% (up from 25%). He demonstrated an increasingly stable trend during the next 6 sessions and 75% of the data points fell within the stability envelope. The PND between baseline and the first phase of intervention was 100%, demonstrating the PD had a large effect on Teacher A's writing instruction.

The second phase, coaching, was introduced and the data demonstrate a small but immediate effect, 78% (up from 75%). The percentage of intervals with SRSD elements ranged from 78%-100%, with a mean of 92%. The data demonstrate an accelerating trend during coaching; in fact, Teacher A implemented 100% of the writing instructional behaviors over two consecutive sessions. However, as indicated by a stability envelope of 50% there was greater variability than during Phase I. The PND between the first and second phase of intervention was 83%, showing a small effect due to coaching.

Teacher B. During baseline, Teacher B implemented a wide range of SRSD instructional elements and her scores ranged from 0% to 43%, with a mean of 22%. While initially there was large variability, the last four sessions during baseline demonstrate a relatively stable or possibly decreasing trend. Visual inspection of the data shows that Teacher B used a small percentage of instructional elements during the last four writing sessions. Following the professional development workshop, Teacher B demonstrated an immediate change in the percentage of writing instructional behaviors, 64% (up from

12%), with a mean percentage of 72%. The percentage of SRSD instructional elements ranged from 64%-78%, and 63% of the data points fell within the stability envelope of the median line, indicating there was still considerable variability. The first four data points in this phase demonstrate an accelerating trend followed by a stable trend in data. The PND between baseline and the first phase of intervention was 100%, indicating the PD workshop had a large effect on her writing instruction.

The second phase of intervention, coaching, was introduced, and the data demonstrate a small but immediate level change to 80% (up from 70%). The percentage of writing instructional behaviors ranged from 72%-80%, with a mean of 76%. Visual inspection of the data demonstrates a very stable trend during coaching, and 100% of the data points fell within the stability envelope. However, the PND was 16%, which demonstrates that coaching had very little effect on her writing instruction.

Teacher C. Teacher C exhibited a wide range of SRSD instructional elements during baseline. Scores ranged from 21%-53% of intervals, with a mean of 41%. Following the professional development, Teacher C demonstrated a small change in his writing instructional behavior, 63% (up from 45%). The percentage of intervals with target instructional behaviors ranged from 63% to 76%, with a mean percentage of 70%. Visual analysis of the data suggests 100% of the data points fell within the stability envelope demonstrating a stable trend line. The PND between the baseline and the first phase of intervention was 100%, indicating the PD workshop had a large effect on the percentage of SRSD instructional elements used to teach writing.

When Teacher C moved to the next phase of intervention, coaching, the percentage of writing instructional behaviors increased slightly, 76% (up from 72%). Scores ranged

from 72%-80%, with a mean of 77.5%. Visual inspection of the data demonstrates a stable trend during coaching, and 100% of the data points fell within the stability envelope. However, the PND was 50%, which demonstrates that coaching had very little effect on Teacher C's writing instruction.

Summary. Teachers' average writing instructional behavior across baseline was 27% (range 0% to 53%). Only one baseline measure was collected for Teacher A, however, observational data show that the percentage of intervals with target SRSD instructional elements during intervention sessions were comparable to that of Teacher B and Teacher C. Teacher B and Teacher C's writing instruction was highly variable at baseline possibly due to the range of behaviors exhibited by the students. Baseline observations show low to mid levels of teacher implementation of SRSD instructional elements (Teacher A = 19%; Teacher B = 23%; Teacher C =41%) followed by an increase in implementation after the professional development session (Teacher A = 65%; Teacher B =72%; Teacher C = 70%). Visual inspection demonstrates an increase in their use of SRSD writing instructional elements following the PD workshop for all three teachers, although Teacher A did not show an immediate effect. The delayed effect for Teacher A compromises the internal validity of the design, however it appears that the professional development had an effect on all three teachers' writing instruction based on the PNDs, the consistency in data patterns, and the unsurprising delayed effect for Teacher A. The PND from baseline to the first phase of intervention was 100% for all three teachers.

All of the teachers maintained a high percentage of intervals with SRSD instructional elements during coaching. Observations during the first phase of intervention show mid-to high levels of using SRSD instructional elements (Teacher A = 64%; Teacher B = 72%;

Teacher C = 70%) followed by increased in overall implementation during phase II (Teacher A = 92%; Teacher B = 76%; Teacher C = 78%). Visual inspection across all three teachers demonstrates that coaching did not have as high of an effect on teachers' use of SRSD instructional elements as the initial workshop did because the data patterns during the second phase of intervention did not differ much from the first phase of intervention, except for Teacher A. However, the data show that the teachers continued to implement the writing instructional behaviors during coaching. The proportion of data that overlapped from the first phase of intervention to the second phase was 83%, 16%, and 50% for Teacher A, B, and C, respectively.

Teacher's Use of Seven Writing Instructional Behaviors

During the professional development workshop, teachers were taught how to teach writing using specific writing strategies to promote student ownership and independent use of writing and self-regulation strategies. These six stages provide a general format to teach writing and can be reordered, combined, revisited, modified, or deleted based on students needs. A secondary analysis examined each teacher's use of SRSD instructional elements during each phase of intervention. The target writing instructional behaviors were observed during each teacher's writing instructional session. The percentage of writing instructional behaviors was computed for each category (e.g., *develop background knowledge, discuss it, model it, memorize it, support it, independent practice, self-statements*) during each phase of intervention. Often, teachers' demonstrated use of more than one behavior during an interval and therefore, the percentages for each category do not add to 100%. Figure 5 displays the mean percentage of target SRSD instructional element across each phase of intervention.

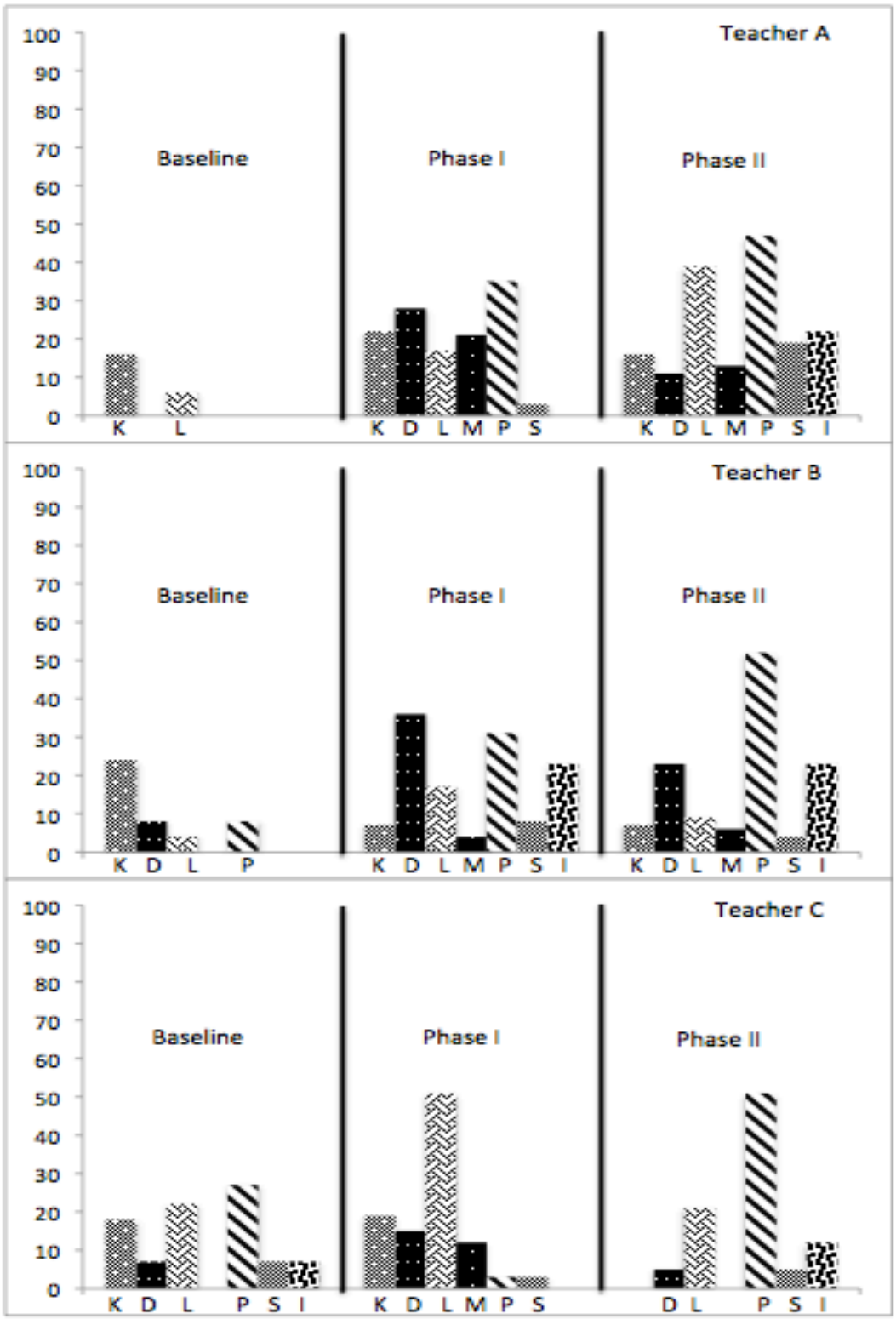

Figure 5. Percentage of SRSD Instructional Behaviors

Teacher A. During baseline, Teacher A used the target behaviors *Developing Background Knowledge* (16%) and *Modeling* (6%) to teach writing. After attending the PD workshop, these behaviors increased (*Developing Background Knowledge* = 22%, *Modeling* = 17%). In addition, he used the writing instructional behaviors: *Discuss it* (28%), *Memorize It* (21%), *Support It* (35%), and *Self-Statements* (3%) to teach writing. When examining the writing instructional behaviors used during phase II, Teacher A continued to increase the amount of *Modeling* (39%), *Support It* (47%), and *Self-Statements* (19%) during his writing instruction. Teacher A also demonstrated use of the behavior, *Independent Performance* (22%).

Teacher B. During baseline, Teacher B used *Developing Background Knowledge* (24%), *Modeling* (4%), *Discuss it* (8%), and *Support It* (8%) to teach writing. After attending the PD workshop, the use of the behaviors *Modeling* (17%), *Discuss It* (36%), and *Support it* (31%) increased. Teacher B used a small percentage of *Self-Statements* (8%) during the first phase of intervention. When examining additional writing instructional behaviors during phase I, Teacher B used two additional behaviors, *Memorize it* (4%) and Independent *Performance (23%)*. During the second phase of intervention, Teacher B increased her use of the behavior *Support It*, 52% (up from 31%) and maintained the percentage of time she used *Independent Performance (23%)*.

Teacher C. During baseline, Teacher C demonstrated use of the behaviors: *Developing Background Knowledge* (18%), *Modeling* (22%), *Discuss It* (7%), *Support It* (27%), *Self-Statements* (7%), and *Independent Performance* (7%) to teach writing. After attending the PD workshop, Teacher C increased his use of the behaviors *Modeling* (51%), *Discuss it* (15%), and *Support it* (30%). During Phase I, Teacher C continued to use a small

percentage of the instructional behaviors, *Develop Background Knowledge (19%)* and *Self-Statements* (8%). When examining his writing instructional behaviors during the second phase of intervention, Teacher C decreased the amount of *Modeling* (21%) and increased his use of the instructional behavior, *Support It* (51%). He also exhibited use of *Independent Performance* (12%), which was not used during the first phase of intervention.

Summary. During Baseline, all three teachers demonstrated use two writing instructional behaviors, *Developing Background Knowledge* and *Modeling*. In addition, Teacher B and C exhibited use of several other SRSD elements such as *Discuss It* and *Support It*. Teacher C was the only teacher to exhibit the use of two additional writing instructional behaviors, *Self-Statements* and *Independent Performance*.

After participating in the professional development workshop, all three teachers increased their use of *Modeling* (Teacher A = 17%, Teacher B = 17%, Teacher C = 51%). When examining the instructional behavior *Developing Background Knowledge*, Teacher A and Teacher C increased their use of this element (Teacher A = 22%, Teacher C = 19%), however Teacher B decreased the use of it, 7% (down from 24%). All three teachers used a higher percentage of the writing instructional behavior *Support it* (Teacher A = 35%, Teacher B = 31%, Teacher C = 30%) during the first phase of intervention. Additionally, Teacher A included the SRSD instructional behavior *Discuss It* into his writing instruction and Teacher B and Teacher C increased their use of the behavior (Teacher A = 28%, Teacher B = 36%, Teacher C = 15%). During the first phase of intervention, all three teachers taught students how to use *Self-Statements* and provided opportunities for students to *Memorize* the strategy.

During coaching, all three teachers continued to increase their use of the instructional behavior, *Support It* (Teacher A = 47%, Teacher B = 52%, Teacher C =51%). Teacher A demonstrated an increase use of the instructional behavior *Modeling*, 39% (up from 17%), however Teacher B and Teacher C decreased their use of *Modeling*. Teacher A and Teacher B continued to use the instructional element, *Develop Background Knowledge* throughout all three phases of intervention. Teacher A also exhibited the highest percentage of teaching *Self-Statements*, (19%) during coaching (Teacher B = 4%, Teacher C = 5%). All three teachers decreased the use of *Discuss It* during coaching.

Question 3: What are the changes in special education teachers' knowledge, attitudes, and beliefs about their writing instruction after attending a professional development workshop on SRSD?

The teachers were interviewed again at the end of Phase I. At this time, teachers described changes to their writing instruction and their student's attitudes towards writing. The themes that emerged from the interviews include: (a) student growth and telling of specific success stories; (b) reports of students' motivation towards writing; (c); reports of SRSD instructional behaviors.

Changes in student growth. During the individual interviews, each teacher discussed how strategies supported students' growth in writing. Teacher A explained…. "I always thought they could be good writers if you give them the tools and you get them motivated." Teacher A shared a success story about the amount of growth he has seen:

> The kids before were basically refusing to do any writing and are now writing and this is one strategy that has helped them grow. They definitely like it and it definitely works for them in writing…the evidence shows that it is working well.

Teacher B returned to this theme of growth upon reflecting how surprised she was that her students caught onto using the strategy…. "I thought for sure they would get sick of hearing me ask them to use the strategy." Furthermore, she continues to tell a story about a student who really struggled with writing…" and you know the other day I was like oh my gosh is this hard and she was like no! And she wrote an entire essay on her own." Teacher C explained how evident student growth is by the writing samples even though he wasn't expecting it…

> Look at how much they were able to complete and organize their thoughts…I think this was our first litmus test about independent practice of the strategy without me guiding instruction or collaboratively writing or modeling and I would say the two results that came in were pretty impressive….it was better than I expected.

Teacher B mentioned one student in particular that was the most surprising to her because last year he would not do any writing. She continued to discuss how learning the strategy might have actually helped him be able to write. "I think he might finally feel some success in it so maybe it will help in multiple paragraph writing next!"

It is worthy of noting that during the interviews, the interviewer never mentioned the concepts of student growth or asked for success stories. These responses, while concordant, were spontaneous comments initiated by the teachers in response to different questions about their writing instruction. Telling success stories seemed to be a way for teachers to communicate the results of their practice.

Changes in student's motivation. Teacher B claimed SRSD strategies have given her students the confidence to write... "Like I don't need to ask what to do next because I have this strategy and I can use it." Teacher B also thought strategies were helpful for high

school students because they do not like to ask for help and mentioned that strategies have really helped give her students a concrete way to think about writing rather than writing being so abstract.

Teacher B also mentioned during the interview seeing changes in her student's attitudes towards writing… "I don't hear them whining or complaining everyday and for this group – it's shocking!" Teacher A explained that his student's attitudes have changed.

> They know exactly what is expected of them and they feel successful when they know the expectations. At first two students threw their papers off the table and now they have taken to the strategy and are doing a good job.

Similarly, Teacher C summed up his students attitudes by attributing it how focused his students were when he taught writing using SRSD…

> A pretty focused group and how long the students spend writing now…I think you could see it in one of the students today, I mean he modeled what I do during instruction…really taking the time to think through the whole process. Both students today were so far beyond what they wrote the first time we gave them a writing prompt and I independently heard one student say the pieces of the strategy.

Changes in SRSD instructional techniques. One instructional behavior that teachers frequently reported using was modeling. All three teachers discussed it in their interviews using specific examples. Teacher A and B discussed how important it is for them to write with their students to demystify the process. Teacher B explained, "I've been trying to be more consistent doing the review of what the strategy means and talking myself through it with them rather than just doing it and the students talk about it….I'm modeling

what I am doing for each step." Teacher A described how he wants to spend even more time modeling the writing process and using self-talk,

> It's something I don't feel very comfortable with and talking out loud about what my writing process is in my head. I know that is a big part of SRSD and I trip on my own words when I do that…which means I should practice it beforehand but time gets away from you.

Teacher C described the importance of metacognition during his interview. "I think a requisite skill to share your thinking is to have good metacognition about your thinking."

Teacher B reflected on her teaching during the interview and how she planned to move students from writing a single paragraph to multiple paragraphs… "I want to do a lesson on how you would break a paragraph apart and which pieces would be your intro first, second, and third and how you would add reasons….so maybe a class essay first where I model for them." Teacher C discussed using strategy instruction to teach other types of writing.

> I mean now that I've done this PD and strategy instruction… a lot of what we did earlier in the year would have been nice to have a strategy. I think I did a lot of guided practice but not a lot of independent practice and I'm not sure they could generalize what we did.

Teacher C explained that his students did some writing to explain in the beginning of the year but he did not think they were able to generalize this type of writing to other assignments, specifically the state writing test. Teacher C shared with the interviewer that his students had to write a narrative essay and persuasive essay on the state writing test and that his students were able to respond easily to the persuasive writing prompt but not

the write to explain prompt. He claimed that, "having a strategy to write to explain would have been really useful."

During the interview, Teacher C discussed his writing instructional behavior after participating in the PD. Teacher C explained that to teach writing well (e.g., persuasive writing), "you have to choose your idea, making sure you explain counter points, and sift through ideas…it takes a lot of time because we have more than one person's ideas to sift through."

> I think in order to go through the strategy (POW + TREE) and give it it's true treatment… in order to, discuss ideas, talk about choosing an idea, organizing and writing and saying more, and then planning…if you want to talk about drafting and do this in 40 minutes it doesn't happen.

Duration. Another emergent theme that developed from the interview with Teacher C but not with the other teachers was his commitment to make time to teach writing regardless of other curricular requirements. In response to the question, "What changes have you made to your instruction since the PD?" Teacher C responded,

> I would say there has been far more rigor with the instruction and the amount of time I spend teaching writing. And that's pretty remarkable that my students are engaged for an hour and ten minutes and exhibiting very little behaviors not just for a full hour but for an academic hour and ten minutes.

One finding of the study that Teacher C highlights is the increase in the amount of time he devoted to his writing instruction. Despite the fact that none of the other teachers mentioned this in their interviews, teachers did devoted more time to writing instruction after participating in the PD. Teacher's writing instruction increased between phases (an

average of 35 minutes at baseline to 45 minutes in phase 1 and phase 2) which was unexpected given the teachers' comments at the beginning of the study stating that writing was their least favorite subject to teach.

Question 4: What effect does professional development and coaching on SRSD have on students' persuasive writing essays?

While teachers received professional development on their writing instruction, student's writing performance was measured on persuasive writing prompts. This section will present results on each writing prompt across all three phases. Table 4 presents the results for each individual classroom across phases, while Figure 6 presents the cumulative results for all three classrooms on student performance.

Table 4.
Mean Number of Persuasive Essay Elements by Classroom Across Writing Prompts

Classroom	Baseline *M (SD)*	Phase I *M (SD)*	Phase II *M (SD)*
Classroom A	0.6 (.58)	3.07 (1.64)	4.25 (1.36)
Classroom B	2.67 (.58)	4.5 (.87)	5 (0)
Classroom C	.89 (.60)	4.5 (3.53)	

Classroom A (n = 5). During baseline, student essays were short and incomplete. Some essays included one reason. Essays did not include topic sentences, explanations of their reasons, counterarguments or an ending. Teacher A's students included 0 to 1 essential essay elements (M = .6; SD = .58).

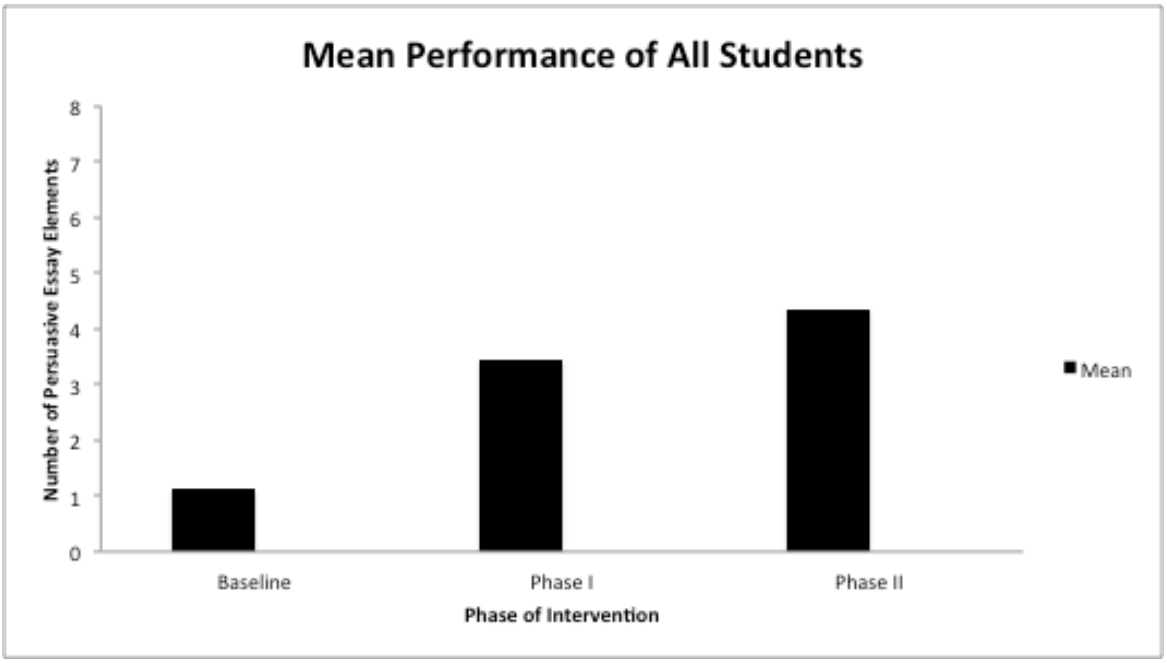

Figure 6. Classroom Performance on Persuasive Essay Prompts

During the first phase of intervention, each student participating in Teacher A's classroom demonstrated an increased understanding of how to write persuasive essays. For the first essay, the students included 1 to 3 essential essay elements (M = 2.25; SD = 1). These essays included either a topic sentence, one to two reasons, and one student included an ending sentence. On the second essay, the students included 1 to 6 essential essay elements (M = 3.4; SD = 2.16). Students included a topic and ending sentence, offered one to three reasons, and one student provided an explanation for his reason. On the third essay, the students included 1 to 5 essential essay elements (M = 3.4; SD = 1.91). Every student wrote a topic sentence and several students provided one to two reasons and two students explained their reasons. Three out of four students provided endings to their essays.

Students continued to make small improvements on their essays during the second phase of intervention. Students included 0 to 5 essential essay elements (*M* = 3; *SD* = 2.16). Students included 4 to 5 essential essay elements (*M* = 3.8; *SD* = 1.73) on the second essay. On the final essay, every student wrote a topic sentence and included at least two reasons in their essays. Students used conclusions and one student attempted a counterargument on the last essay. Students included 4 to 6 elements (*M* = 4; *SD* = 2.45).

Classroom B (n = 3). During baseline, the students in Teacher B's classrooms wrote one essay that contained some reasons and one student included a topic sentence. The students included 2 to 3 essential essay elements (*M* = 2.67; *SD* = .57). During the first phase of intervention, the students responded to three essay prompts. On the first essay, the students included 2 to 6 essential essay elements (*M* = 4; *SD* = 2.83). Students included a topic and at least one reason. On the second essay, the students included 5 to 6 essay elements (*M* = 5.5; *SD* = .71). Students included a topic sentence, three reasons, and an ending. One student provided an explanation for one of his reasons. On the third essay, one student responded to the writing prompt and included 4 essential essay elements. During the second phase of intervention, students responded to one writing prompt and included a total of 5 essential essay elements (*M* = 5; *SD* = 0).

Classroom C (n = 6). At baseline, students in Teacher C's classrooms wrote essays that contained some reasons and one student included a topic sentence. On the first essay, students included 0 to 1 essential essay elements (*M* = .67; *SD* = .58) On the second essay; three students included 1 to 2 essential essay elements (*M* = 1.33; *SD* = .58). On the third essay, students included 0 to 1 essential essay elements (*M* = .67; *SD* = .58). Students in Teacher C's classroom wrote one essay during the first phase of intervention. Two out of 6

students responded to the writing prompt and included 2 to 7 essential essay elements (*M* = 4.5; *SD* = 3.53). Unfortunately, state testing occurred during this study and on days the students were not testing the teacher taught writing. Therefore, the students did not have an opportunity to respond to as many persuasive writing prompts and no conclusions can be drawn about the effectiveness of SRSD on student's persuasive writing samples.

Social Validity

Teacher perspective. Teachers were asked to think about SRSD instruction before and after the study using the Intervention Rating Pofile-15 (IRP-15). Respondents were asked to rate the extent to which they agreed to statements about SRSD on a 6-point scale (1=strongly disagree; 6=strongly agree). Specifically, teachers were asked about the acceptability of the goals of SRD, the methods SRSD, the effectiveness of SRSD for students with emotional behavioral disorders, and ease of integration of SRSD elements into their classroom instruction.

Prior to intervention, each teacher rated the intervention and scores ranged from 66 to 80 (*M* = 75, *SD* = 7.81). Teachers viewed SRSD as having acceptable procedures and socially significant goals. After the last coaching session, teachers were asked to complete the IRP-15 again. Two out of three teachers completed the rating scale. Overall mean social validity scores increased and the variability in the scores decrease from baseline, ranging from 85 to 90 (*M* = 87.5; *SD* = 3.54), suggesting that the SRSD met or exceeded teacher's expectations. Teacher A gave the intervention a perfect score.

Student perspective. Students were asked to think about their experience before and after learning how to use SRSD and rate the extent to which they agreed to statements about the intervention on a 6-point scale (1=strongly disagree; 7=strongly agree).

Specifically, students were asked about SRSD techniques in terms of ethics, effort, discomfort, and acceptability of the program goals and objectives.

Students with EBD generally rated the intervention favorably prior to the intervention (M = 27.72; SD = 6.02). Students agreed that the writing program sounded fair and would help other kids too. Students somewhat agreed that learning how to write persuasive essays would help them do better in school. After participating in the intervention, the students were asked to rate their experience with SRSD. The average response (mean), range, and most frequently cited response (mode) for each statement are depicted in Table 5. A full range of responses was represented in the feedback. Overall, the students agreed that the program was fair and would help other kids too. Students generally thought the program would help them do better in school and liked the program they used. Interestingly, half of the students agreed and half disagreed on whether or not there were better ways for teachers to instruct them on how to write.

Table 5.
Student's Perspective of SRSD Intervention Across Classrooms Post Intervention

Statement	Mean	Range	Mode
The program we used was fair.	5.87	5-6	6
I think my teacher was too harsh on me.	2.14	1-6	1
Being in this program caused problems with my friends.	2	1-6	1
There were better ways to teach me to write better.	3.43	1-6	1,6
This program could help other kids, too.	5.57	4-6	6
I liked the program we used.	4.57	1-6	6
I think being in this program will help me do better in school.	4.43	1-6	6

CHAPTER FIVE: DISCUSSION

The present study examined how professional development with coaching affects special education teachers' writing instruction and students' writing performance. This section is divided into four parts (1) an interpretation of the findings, (2) a discussion of study limitations, (3) directions for future research, and (4) implications for practice.

Interpretation of Findings

Most adults do not naturally develop the ability to perform the tasks required of teachers (Ball & Forzani, 2009). Given the broad scope of teaching practice and the time constraints of initial teacher education, teachers need additional opportunities to learn and carry out instructional techniques. The current study found that professional development (PD) tailored to a small group of special education teachers had an impact on the way these teachers taught persuasive writing to students with EBD.

Prior to the beginning of the study, the teachers reported that they had been exposed to strategy instruction in their teacher preparation program. Therefore, it was hypothesized that the teachers would use the writing instructional behaviors to teach writing. During baseline, teachers were instructed to "teach writing as they typically do to students with EBD." Observations during baseline writing sessions demonstrated that teachers did not use a high percentage of writing instructional behaviors to teach writing. A distinct and large improvement in implementation of writing instructional techniques occurred after the PD workshop for Teacher A, and Teacher B, and Teacher C, however immediate effects were not observed for Teacher A. At the beginning of this phase, students exhibited challenging behaviors that disrupted writing instruction. Consequently, Teacher A's writing instructional behavior did not differ much from baseline. It is plausible that the

challenging behavior precluded Teacher A from using the newly learned behaviors rather than Teacher A not integrating them into his writing practice. Teacher C had the highest implementation of instructional behaviors of all three teachers across baseline with a resulting smaller gain at phase I. This may be due to the teacher's prior knowledge of SRSD. Teachers continued to maintain a high percentage of instructional elements during coaching.

In addition to positive effects on teacher behaviors as a result of PD, there were positive effects on the number of persuasive elements in student essays when the teachers taught writing using SRSD. This also indicates that SRSD, if implemented with fidelity, can influence student outcomes.

The Effects of PD Elements on Teachers' Writing Instruction

It has been suggested that PD is perhaps one of the most important bridges from research to classroom practice (Kretlow, Cooke, & Wood, 2012). In the current study, the PD consisted of providing three special education teachers with opportunities to learn the six stages of SRSD instruction (*content*) that are used to teach writing and self-regulation strategies. The teachers were provided with opportunities to learn through demonstrations, discussions, and interactive feedback about their current writing instruction *(active learning).* The workshop lasted approximately 4 hours *(duration)* and was aligned to each teacher's classroom practice and individual student needs (*coherence*). Desimone (2009) asserts that high quality professional development activities such as *content*, *duration, active learning*, and *coherence* can increase teachers' knowledge of the academic subjects taught.

Content. In this study, *content* (SRSD instructional techniques) may have been the most influential feature of the conceptual model. Desimone (2009) suggests that professional development focused on *content* can increase teacher knowledge and skills, improve practice, and to a more limited extent, student achievement. Teachers were provided with specific examples of how to teach a persuasive writing strategy to their students through demonstrations using a commercially produced video, discussion about implementation, and SRSD materials. The lead researcher shared information about the effectiveness of SRSD for students with EBD based on the eleven previously conducted studies and discussed several seminal models of skilled writing. After attending the PD workshop on SRSD, teachers demonstrated a higher percentage of instructional behaviors when compared to baseline or *typical writing instruction*. This finding suggests that *content* might be considered one of the core features of the PD that positively influenced teachers' writing instruction. However, these findings must be interpreted with caution given the lack of follow up data that were collected and that the complex nature of the professional development package that was delivered.

Active learning. Teachers acquire new practices and knowledge when they have opportunities to *actively engage in learning* those practices and situate them in classroom settings (McCutchen et al, 2002). Teachers had an opportunity during the PD to discuss with the lead researcher how they would implement SRSD with their specific group of students. This element of PD may not always be possible with large groups of teachers attending PD workshops. In this study, it may have been an important feature of the PD because Teacher B and Teacher C demonstrated changes in their writing instructional behavior when the next writing session was taught. Perhaps, discussing how they would

integrate SRSD instructional techniques made it easier for the teachers to implement. Teachers of students with EBD build and sustain best practices when they have opportunities to actively engage in learning those practices and to situate them in classroom settings (Desimone, 2002). For the small group of teachers in this study, *active learning* seemed to be an effective feature of the PD because it provided teachers with explicit instruction by a researcher, and opportunities to discuss implementation and receive feedback.

Coherence. Fullan (2007) states that "belief in an instructional practice or technique" is necessary for the implementation to be successful. Prior to the PD, one of the teachers described her participation in a district writing workshop that she had previously attended and stated how she had to spend copious amounts of time adapting the materials to make them relevant for her students. This disconnect between the PD and *content* led to a situation where the teacher made comments about the workshop such as "…it was too difficult for students…I spent all my time looking for sample materials on the Internet" which implies that knowledge of *content* alone is insufficient for teacher implementation. PD must provide teachers with opportunities to learn the content and methods to teach the content to their students for particular purposes in their classrooms (Ball & Forzani, 2009). The present study assisted teachers in understanding how the *content* (SRSD techniques) they learned in the PD is *coherent* with their current writing instructional methods and beliefs. PD that is *coherent* with teachers' classroom practice develops a more meaningful sense of the *content* and triggers creative ways to implement and teach the material. Teachers in this study demonstrated a higher percentage of instructional behaviors after participation in the PD when compared to baseline or *typical writing instruction*. This

finding suggests the PD aligned with the teachers' goals and needs because they used the *content* learned from the PD to teach writing to their students. Penuel et al. (2007) suggests that effective PD must align with teachers' goals and needs, local, state, and national standards and accountability methods, and school-wide curriculum.

Collective participation. In order to sustain teacher performance, a second intervention, *coaching,* was included in the study. This coaching provided teachers with a chance to reflect on their writing instruction and engage in dialogue with the lead researcher about SRSD. This feature was added to the model to determine the effects of on the teachers' writing instruction. Each teacher demonstrated a slight increase in the percentage of instructional behaviors implemented during writing instruction as demonstrated by the change in level. Teacher A demonstrated a higher percentage of SRSD elements during coaching in comparison to Teacher B and Teacher C. It is worthy to note that *coaching* increased the percentage of target instructional behaviors during writing instruction for Teacher A (up to 100%). It can only be speculated that coaching assisted Teacher A individualize SRSD techniques to his individual students in his classroom as he moved to instruction in a different genre.

The small increase in percentage of instructional behaviors indicate extended time and practice through coaching assists teachers in maintaining use of *content* learned in PD. Previous research has indicated that in-service training alone is not sufficient to prompt teacher change (Kohler, Crilley, Shearer, 2011; Yoon et al., 2007). The slight improvement seen in each teacher's writing instruction is promising; however, further research is needed to determine if teachers maintain high levels of implementation after a PD workshop and *coaching.*

A second possible explanation for these results may be the previous knowledge of strategy instruction the teachers mentioned in their initial interviews. Prior to the PD, teachers were employed by schools and had received training to work with students with high incidence disabilities through a Masters program in Special Education. Given the training that the teachers in the study may have previously received, it is possible that the PD reminded them of the skills and knowledge they already possessed, and coaching facilitated implementation of the writing instructional behaviors. These results align with previous studies that have found high levels of accuracy in teaching procedures (e.g., 85% or higher) after approximately 4 hours of in-service professional development and coaching (Kretlow et al., 2012; Kretlow et al., 2010; Maheady, Harper, Mallette, & Karnes; 2004).

It is also possible that while coaching did not result in a large increase in level right away, a study of longer duration might have found increases over time as the coach supported more and more use of the SRSD strategies through other types of writing. It is likely that the initial burst of new teaching behaviors might not have been sustained over time without coaching.

Summary of Effective PD Elements

Given the large public investment in PD, there is much to gain from research that addresses practical questions faced by those who design and adopt PD programs, especially in the area of writing. Prior to attending the PD, the teachers attributed a lack of curriculum, guidance, and balancing language arts standards with their student's level of achievement to teach writing. In the present study, three core features (e.g., *content, coherence, active learning*) of PD provided teachers with initial opportunities to learn how

to teach writing to students with EBD using SRSD. These three features appear to be effective elements of the conceptual model to train special education teachers of students with EBD how to use SRSD.

Teachers in the present study reported that the PD had an effect on their writing instruction and writing samples demonstrate that the performance of their students improved. These findings are similar to the results of the National Writing Project (NWP) that professional development influenced their writing instruction and their student's performance (Berry, 1991; Carter, 1992; Dimililer, 1991; Fischer, 1997; Hampton, 1990; Marsh, 1987; Marsh, Knudsen, & Knudsen, 1987; Nilsson, 1981; Pritchard & Marshall, 2002a, 2002b, 2005; Wilson, 1988; Zbikowski, 1991). However, the findings from the current study differ from the NWP because they show direct measurement of teacher's writing instructional behavior and their student's writing performance on persuasive writing samples.

A second intervention, coaching, was used to provide teachers with follow up support to the initial PD workshop. Despite the small amount of coaching sessions, teachers demonstrated a slight increase in their use of instructional behaviors. It is unclear if more *coaching* would have lead to higher levels of implementation of SRSD instructional behaviors or sustained teacher practice.

The Effects of PD Content on Teachers Writing Instruction

Recently, Borko, Jacobs, Eiteljorg, and Pittman (2008) indicated that there is little agreement about how to assess the quality of PD. Previous investigations of PD have used self-reports (Burns & Ysseldyke, 2009; Gagnon & Maccini, 2007; Greenwood & Abbott, 2001; Greenwood & Maheady, 2001) and surveys (Borko, 2008; Fishman, Marx, Best, & Tal,

2003) to measure teachers' practice. Similarly, previous writing PD studies conducted through the NWP have used self-reports (e.g., Dimililer, 1991), surveys (Nilsson). This study used a direct behavioral measurement to assess teacher's writing instructional behavior as a result of PD. This is a more sensitive and objective way to evaluate teacher effectiveness rather than rating scales or surveys (Cohen, 1990; Mayer, 1999; Spillane & Zeuli, 1999; Yoon et al., 2007). Teachers' writing instructional behavior was measured at baseline and during the first and second phase of intervention. In addition, follow up interviews with the teachers' after participation in the PD reveal a very clear and distinct picture about their thoughtful and skillful adaptions to their writing instruction and provide support for the quantitative findings.

Model It. Modeling is one of the methods teachers use to promote self-regulation during writing (Zimmerman & Kitsantas, 1999). Students get information from watching a model, such as the teacher, who shows the student how to organize a sentence or write a composition.

Prior to participation in the PD workshop, teachers used *Modeling* on average 10% of the time. After the PD, teachers included *modeling* in their writing instruction on average 30% of time. The increase demonstrates that teachers were using *Modeling* to show students how to work through problems and plan and implement strategies to manage the writing process. Research suggests simply being exposed to the writing process is insufficient for most students and that they will benefit from explicit *Modeling* (Dowell, Storey, & Gleason, 1994; Gambrell & Chasen, 1991). Teachers continued to use *Modeling* during the second phase of intervention on average 32% of the time, indicating coaching may have maintained teachers' use of the behavior. Most of what goes on during writing is

not visible and occurs inside the writer's head. Teachers can help writers develop skills and strategies for writing by *Modeling* the writing process (Graham, 2008). Furthermore, *Modeling* is a well-established method of learning (Daiute & Dalton, 1993) because it gives writers ideas and helps them with particular problems during writing (MacArthur, 2006). Based on the current findings, *Modeling* was the writing instructional behavior most influenced by the PD.

During the follow-up interviews, all three teachers consistently described using the instructional behavior, *Modeling*, more than they had before the PD. One teacher mentioned in his initial interview that he did not *Model* the writing process because "my students don't listen a lot so if I talk and express the thoughts in my head it's a group that has a very short attention span and isn't going to process or internalize it." When asked how the PD influenced his classroom practice after participation in the PD, this same teacher discussed spending a significant amount of time *modeling* the writing process. The teachers explained, "Talking through the writing process with their students rather than just doing it…I'm *Modeling* what I am doing for each step."

Self-Statements. Demonstration using overt mental dialogue (e.g., *Self-Statements*) is a particularly effective method because it permits novice writers to observe the tactics and motives of more experienced authors and to appropriate more sophisticated thinking and language to guide their independent writing endeavors (Englert, Raphael, & Anderson, 1992). During baseline, only one teacher taught students how to use *Self-Statements* (Teacher C = 7%). As well, the follow up interview supports these quantitative findings. One teacher described *Self-Statements* as one of the teaching behaviors that he would like to teach his students. "We have discussed self-talk (e.g., *Self-Statements*) when it comes to

behavior and students know what it means, but we haven't used it in writing and they don't have something written down they can take ownership of." Following the professional development, all three teachers incorporated *Self-Statements* (Teacher A = 3%, Teacher B = 8%, Teacher C= 3%) into their writing instruction, indicating the PD content on *Self-Statements* had a small affect on their use of this target behavior. Teacher A and Teacher C continued to increase the amount of time they spent teaching students to use *Self-Statements* (Teacher A = 19%, Teacher C = 5%) while Teacher B maintained some use of self-statements (Teacher B = 4%) during coaching. This finding suggests that coaching was an effective intervention that sustained and possibly increased teachers' use of *Self-Statements*.

Students who struggle with writing are often not motivated to write. They perceive themselves as incapable of becoming better writers given their sense of powerlessness and lack of awareness of the utility of strategic effort (Troia, 2007). Teachers can help counteract these students' motivational problems using *Self-Statements* that reflect positive attributes (e.g., "Good writing takes hard work") and provide mechanisms for problem-solving (e.g., I guess I should start with the topic sentence; Troia, 2007). During the follow-up interviews, teachers provided stories of how they used modeling to teach *Self-Statements*. Providing students with instruction how to use of *Self-Statements* is critical to helping them learn how to use the statements effectively (Harris & Graham, 1996).

Support It. The writing instructional behavior, *Support It*, requires teachers to support students' use of writing strategies, *Self-Statements*, and other self-regulation procedures that apply to writing. The teachers demonstrated little use of the instructional behavior *Support It* at baseline (Teacher A = 6%, Teacher B = 4%, Teacher C = 22%).

Following participation in the PD workshop, teachers increased the amount of *Support* they provided to students (Teacher A = 17%, Teacher B = 17%, Teacher C = 32%). Observations of writing instruction showed that teachers provided their students with opportunities to complete writing tasks that were interesting and connected to their prior knowledge. The teachers encouraged their students to further explore topics through discussions, media, and technology as a mechanism to *support* use of the writing strategy and self-regulation. Teachers continued to *support* the use of strategies during coaching as well. In fact, the three teachers on average demonstrated using this target instructional behavior 50% of the time during writing instruction.

This finding is not surprising given that the heart of the SRSD method is for teachers to provide as much *support* as needed with students until they reach mastery. Harris et al. (2008) state that *Support It* is longest of the six stages of SRSD because students must be given adequate time and support to master the strategy. Students with EBD need direct assistance to apply the skills they are learning effectively. Data from the current study demonstrates that teachers provided *support* through opportunities to practice applying the strategy to their writing, giving assistance as needed, and continuing instruction until the students can use the strategy independently (Rogers & Graham, 2008).

As well, teachers described how strategies *supported* student's growth in writing and their motivation to write. Teachers used student success stories to describe the effects of SRSD instruction. The teachers stated that their students' abilities were strikingly different prior to learning strategies than afterward. These findings make sense when one considers the cognitive work of writing and how strategy instruction might assist with

reducing the load on working memory (McCutchen, 1996; Schunk & Zimmerman, 1998; Zimmerman & Risemberg, 1977).

Summary of SRSD Instructional Behaviors

Prior to attending the PD workshop, teachers described the approach they used to teach writing. Teachers did not identify a specific writing instructional approach; instead, they discussed skills, rubrics, and techniques they used to teach writing. One teacher did mention one of the target instructional behaviors, *modeling*, and explained that he did not use it because his students would not process or internalize the ideas. While not done in previous studies, the current study used a direct behavioral measurement to assess the effects of PD and coaching on teacher's writing instructional behavior. Findings from this study demonstrate that teachers can integrate SRSD instructional behaviors with their existing writing instruction to create a more effective writing program and maximize students' performance. This is an important finding as previous studies of writing PD have relied on surveys, teacher self-report, and student outcomes. This study lacked the resources to investigate whether SRSD instruction behaviors were sustained in teachers' writing instruction after coaching ended.

The Effects of SRSD on Student Writing Samples

Students with EBD struggle academically, and academic interventions targeting written expression occur less frequently than other academic areas like reading and math (Lane, 2004). This lack of emphasis on writing is not surprising in light of previous research that suggest students with EBD have problems with cognitive organization, anxiety and affect, perceptions of reality, and aggressive conduct disorders that might make writing particularly challenging to teach (Mastropieri et al., 2012). Students with EBD

unquestionably require instruction that is based on effective methods implemented by well-trained professionals (Algozzine, Serna, & Patton, 2001; Kostewicz & Kubina, 2008; Nelson, Leone, & Rutherford, 2004). The findings of this study suggest that SRSD is one such effective instructional method in writing to increase student performance on persuasive writing prompts.

Like previous SRSD studies for students with EBD (Lane et al., 2011; Mason & Shriner, 2008; Mason et al., 2010; Mastropieri et al., 2009; Mastropieri et al., 2010; Mastropieri et al., 2012), the students included a low percentage of persuasive essay elements at baseline, which confirms that students had difficulty planning (e.g., coming up with ideas), organizing (e.g., arranging ideas logically in one's head), and producing a written composition (Hayes & Flower, 1980). Student responses usually included a topic sentence followed by a list of disorganized reasons that may or may not have related to the topic. Explanations, counterarguments, and endings were often omitted or students would attempt to argue both sides of the topic and omit explanations and endings. Furthermore, during the baseline writing sessions, students spent a substantial amount of time off-task or out of the classroom altogether, which resulted in a considerable loss of instructional time.

During the first phase of intervention, students increased the number of persuasive elements in their essays. The improvements were consistent with other investigations (Lane et al., 2011; Mason & Shriner, 2008; Mason et al., 2010; Mastropieri et al., 2009; Mastropieri et al., 2010; Mastropieri et al., 2012; Mason & Shriner, 2008). While the sample size was too small for statistical analysis, the data suggested that students had increased knowledge and ability to write persuasive essays and by the end of the study, the writing

samples of many of the students reflected their ability to pick a side to an argument, provide at least one reason for their argument and conclude their essays. However, despite instruction in counterarguments, students still had difficulty explaining their reasons and providing counterarguments. In some instances, students continued make improvements in their writing of persuasive essays when the teacher collaborated with a coach during the second phase of intervention.

In addition, while writing samples were not collected as frequently as the researcher had hoped, teachers reported that their students spent much more time and effort with their writing in phases 1 and 2 than during baseline. For example, Teacher B has asked her students to write a multiple paragraph essay on a school or home issue and communicated that her students were doing really well even though it took them multiple days to complete (personal communication, May 29, 2013). A few of the writing samples that students turned in demonstrated that they had planned in advance of writing, a skill that none of the students did during baseline.

In a previous investigation, Mastropieri (2012) reported that students with EBD were able to write multiple paragraphs after learning the POW + TREE strategy. The present study had different findings as students in the present study encountered difficulty applying the strategy to multiple paragraph writing. This could be due to several reasons such as differences in student cognitive and social skill characteristics, amounts of instruction, or the type of instruction provided by the teachers.

The changes in student writing achievement are encouraging given that the goal of all intervention research is to provide meaningful, lasting change (Baer, Wolf, & Risley, 1987). Writing plays a major role in learning and is not limited to academic tasks. It is

important for students with EBD to be able to express their ideas in writing and it is also an essential skill job skill. These findings demonstrate that students with EBD can be taught to write persuasive essays if they are provided with effective instructional strategies that address the affective, behavioral, and cognitive needs of this population of students that experience trouble with learning.

Student writing samples were not collected at maintenance so it is unknown whether these skills would be maintained over a sustained period of time. It is also encouraging that both teachers and students rated the intervention as socially valid, meaning that they were comfortable with the intervention, goals, procedures, and outcomes. For some students and teachers, the intervention exceeded their initial expectations.

Limitations of the Study

As with all investigations, this study has certain limitations that should be noted and addressed in subsequent investigations.

One large limitation of the study was the lack of sufficient baseline data for Teacher A to fully demonstrate experimental control. While this is a major problem, Teacher A continued in the study because his students had identified writing difficulties and could benefit from the intervention. Teacher A also demonstrated the highest implementation of SRSD instructional techniques (100%), suggesting that the intervention had an effect on his teaching practice.

An additional limitation was the strong possibility of teacher reactivity to the video data collection and the likely presence of a Hawthorne effect. The teachers were all personally known to the lead researcher and their desire to help the researcher with the

project might have affected the results of the study. As well, the presence of the video camera can lead people to act differently when they are being watched. This was an unavoidable part of conducting this type of research.

Another limitation related to data collection is that teacher instructional practices were only recorded on days when the lead investigator was able to observe the writing lesson. It is possible that the data may exhibit a different pattern of results if they were collected on a daily basis.

The lack of maintenance data on the teachers and students is another limitation of this study. Therefore, no conclusions can be drawn about how well the teachers' behaviors would continue into the future. As well, no conclusions about maintenance of improvements in student achievement can be made.

In addition, while the results of the PD are promising, the study involved a small number of teachers clustered in two schools. This study would have more of an impact if it took place in multiple different settings. Future research using experimental designs to replicate the present study with larger samples of teachers is needed.

The coaching in Phase II was quite limited in duration and was only provided one time a week for one to three weeks in this study. While the amount of coaching in this study is within the wide range of coaching sessions (from one coaching session to weekly coaching sessions across an entire school year) documented by Kretlow and Bartholomew (2010), it is possible that more coaching sessions would have led to higher levels of implementation of the target writing instructional practices by the teachers.

It is difficult to draw a strong causal relationship between the PD plus coaching and student outcomes because of the limited amount of writing samples collected throughout

the study. In some instances, students were absent from school on the days teachers taught SRSD or asked students to respond to a writing prompt. This was not surprising given the dropout rate for this population is higher compared to other students with disabilities (U.S. department of Education, 2009). In addition, more than one to three samples of students writing should be collected across phases in order to demonstrate the level of experimental control needed to determine the effects on student achievement.

Despite these limitations, this study advances the field in the following ways. The current study provides preliminary evidence about the effectiveness of a multicomponent professional development intervention designed to support special education teachers' implementation of SRSD writing instruction. It is one of the first investigations to examine PD for special education teachers of students with EBD on SRSD. The intervention included effective elements of PD, materials, resources, and coaching designed to support teacher implementation of a writing instructional strategy. Perhaps, even more importantly, special education teachers were able to implement an evidence-based writing instructional method after 4 hours of initial training and report changes in their students writing performance. These finding suggests that a content-focused professional development increased special education teachers' content and pedagogical knowledge of SRSD. Special education teachers had the opportunity to collaborate with a coach, which provided a space for them to reflect on their practice and engage in continued learning how to teach writing to students with EBD. It seems likely that this partnership sustained special education teacher's implementation of strategies into their writing instruction. Finally, this study used observation protocols and instruments to measure the effects of professional

development on teachers, improving the field's understanding of effective components of professional development and coaching.

Directions for Future Research

Somerset Maugham, the renowned novelist, once joked, "There are three rules for writing a novel. Unfortunately no one knows what they are." While we may not know how to turn a good writer into a great novelist, we do know how to help developing writers become competent writers and the next step is to make sure that all students are taught how to write using effective practices (Graham, 2008). Writing instruction research is relatively immature and receives far too little attention from key stakeholders (Graham, 2008), making it a critical area for additional research, especially for teachers of students with students with EBD.

Given the lack of studies that have examined models of professional development in the field of special education, this study should be replicated again to determine if this is an effective way to provide teachers with the necessary content knowledge to teach writing to students with EBD.

An implication for future research is to determine whether coaching is a necessary component of professional development for special education teachers who participate in professional development. Coaching is an expensive; time consuming approach and examining the best way to provide teachers with professional learning has implications for districts and policy makers of teacher education. Future research should compare multicomponent professional development interventions that are designed to support teacher's implementation of SRSD. This intervention would include training, workshops, materials, and resources to support classroom implementation.

Future research is also needed to examine different models of coaching that are used to provide training to teachers. A limitation of the coaching literature is the exact amount of dosage that is needed to ensure teachers reach criterion levels of implementation and maintain these levels over time. Examining a conceptual model of coaching and comparing effective elements of coaching might provide some insight into the amount of time a coach would need to spend in a classroom with a practicing teacher.

A limitation of the present study was the need to end the study due to time constraints and the end of the school year. As previously mentioned, maintenance data were not collected. Beginning a study in the fall to allow for extended coaching and maintenance phases would allow maintenance data to be collected at consistent intervals and enhance future investigations. In addition, it would also be useful to determine the sustainability of SRSD outcomes by examining long-term maintenance (e.g., onset of the following school year). Perhaps, teachers would benefit from booster sessions to continue use of evidence-based strategies they learn in professional development. These type of data are critical to local, state, and national discussions about how to support teacher's use of such practices.

Another implication for future research would be to examine what percentage of instructional behaviors led to gains in students' performance. If research can identify the level at which students benefit substantially, coaching can be more focused on increasing accuracy to a specific level of behavior following professional development (Kretlow et al., 2012).

One of the biggest limitations to this study was the small number of student writing samples across each phase of intervention, which made it difficult to draw conclusions

about the effects of SRSD on student achievement. Future research should replicate this study and collect both student-writing samples and perhaps a more distal outcome measure such as results on state testing.

Furthermore, students with EBD demonstrated difficulty understanding the element of a counterargument. Perhaps, this is attributed to students of this populations' difficulty to consider other perspectives that are different from their own. Alternatively, with more coaching sessions, the teacher and coach might have been able to develop additional lessons to teach students about counterarguments. Future research is need on how to teach students with EBD to include counterarguments into their essays.

SRSD instruction did not (and does not typically) include explicit instruction of on-task behavior or engagement. Although increased engagement was not targeted directly in intervention, it was observed anecdotally that students seemed more engaged during writing once teachers started teaching students to write using strategy instruction. Making students aware that they can carry out tasks successfully (via self-monitoring) increases persistence and engagement (Schunk & Zimmerman, 1994). One implication for future research is to assess student engagement during writing instruction to determine the amount of time a student with EBD spends actively engaged attending to and working on relevant academic material.

Implications for Practice

Results of this study have educational implications worth considering. SRSD instruction can be highly effective in increasing the writing performance of students with EBD. The current study found that teachers were able to learn and apply the use of SRSD techniques into their writing instruction following training on SRSD. Teachers had a chance

to share a strategy for writing persuasive essays with their students and students appeared to be more engaged while learning the strategy. Compared to baseline measures, teachers demonstrated instructional behaviors such as *Modeling, Self-Statements*, and *Support it*, which were effective techniques to teach children to write. Furthermore, children showed an improvement in their writing samples. Although no causal conclusions can be made, change in both teacher behavior and student performance was observed. It is reasonable to conclude that providing special education teachers with professional development was an effective way to share a research-based writing intervention. This is an important accomplishment given the lack of academic writing interventions available for students with EBD and the lack of professional development that is available to special education teachers on how to teach writing.

Furthermore, special education teachers must be provided with content knowledge training in all academic areas, especially in writing. It is equally important for teachers to understand the importance of an instructional technique and how the student will learn and process the content. Developing this level of knowledge can influence teachers' attitudes skills, and beliefs about their instruction and their student's achievement.

Designing a comprehensive professional development that included effective PD elements for special education teachers was a success of the current study. Furthermore, results of this study suggest that when designing teacher training, small group workshops may be one way of giving critical information to teachers in a way that is feasible, cost-effective, and appealing to teachers. Furthermore, selecting a writing strategy that was appealing to teachers may make professional development more effective.

Involving teachers in the research bridges the research to practice gap. Teachers reported satisfaction with the professional development experience and their students' achievement. Strategy instruction is an effective writing instructional technique that can lead to improved student outcomes in writing for students with EBD and teachers should have opportunities to learn content that will benefit their students. Finally, teachers were provided with professional development with their team of instructional assistants in their classroom suggesting that teacher and school culture are important considerations for professional development and perhaps even more so for special education teachers that work in self-contained settings.

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Appendix A

SRSD Materials

POW + TREE Lesson Plans

WRITING TO PERSUADE
POW + TREE with TRANSFER: LESSON # 1 – Part 1

Teacher: _____

Date:_____

Student(s): _____

Purpose: Develop Background Knowledge, Discuss It

Objectives: Introduction to POW, writing to persuade, and TREE

Materials needed: Mnemonic charts and paper example (for recess), TREE graphic organizer, transition word chart, POW practice cards, pencils, scratch paper, and student folders

____ I. Introduce Yourself

Introduce yourself as a writing teacher. Tell the student you're going to teach him/her some of the "tricks" for writing. First, we're going to learn a strategy, or trick, that good writers use **for everything** they write. Then we are going to learn the trick, or strategy, which helps you write a paper that tells the reader what you believe or what you think about something. This is called **writing to persuade.**

____ II. Introduce POW

A. Put out the POW + TREE chart so that only POW shows.

B. Emphasize: POW is a trick good writers often use, for many things they write.

C. Go over parts of POW, discussing each. (P = Pick an idea to start with – this is an idea in our head; O = Organize my notes – I will teach you a trick for organizing your notes later; W = Write – we will use our notes to help us say more as we write). Describe and discuss the concept of notes. Use examples; "Your teacher uses notes when she creates a web on the board; your parents use notes when they write things on a calendar or a grocery list." Have the student generate some examples on their own. Emphasize that a good way to remember POW is to remember that it **gives them POWer for everything they write.**

D. Practice POW; Turn the chart over. Practice reviewing what each letter in POW stands for and why it is important (good writers use it often, for many things they write). Help as needed. Have the student write out POW on scratch paper and explain out loud what each letter stands for. Repeat until the student knows what POW stands for and why it is important.

_____III. Discuss Writing to Persuade

Discuss the word persuade to be sure this makes sense to them. Ask if they have heard this word. Discuss what makes writing to persuade powerful- they may not be at all familiar with this, so help and be sure to include:

A. Writing to persuade that is powerful tells the reader what I believe, gives the reader at least three reasons why I believe it, and has an ending sentence. **(You will be practicing this with them, so you just want to be sure they have the idea here).**

B. Writing to persuade that is powerful **makes sense and has several parts** - we will learn a trick for remembering the parts of writing to persuade. This trick is the trick we will use to help us organize our notes.

_____IV. Introduce TREE

Introduce TREE- uncover the rest of the chart. "Let's look at what the parts of writing to persuade are." Have students look at the chart. Go over each part of TREE, and how it relates to a living TREE.

A. The topic sentence is like the trunk – it is strong and every part of the tree is connected to it.

B. The reasons are like the roots. They support the trunk. The more roots (or reasons) the stronger the trunk will be.

- Next, we need to explain the other side of the reason. This is called a counter reason. This makes the trunk stronger too.

C. The ending is like the earth. It wraps around the tree (like wrap it up).

D. The last part of TREE is **examine**. Look at the picture of the girl. She is looking carefully at the tree with a telescope making sure all the parts are there. Spend some time discussing the word **examine**. **Examine means to look closely.** Examples: examining something with a microscope, you can examine something closely using a magnifying glass etc. **We will be looking closely - examine - with our eyes.**

_____V. Find TREE

Now we're going to read and **examine** a writing to persuade paper to find out if the writer used all of the parts - what I believe, at least three reasons why, an explanation, and an ending sentence. (Leave out the TREE chart where students can see it.)

A. Give each student a copy of the first writing to persuade paper; ask students to read along silently while you read the paper out loud. Tell them to raise their hands when they hear what the writer believes, each reason why, and an ending sentence. Be sure each part is identified.

B. Give each student a pencil. When they have identified the topic sentence have them underline it.

C. Next tell the students that you will be looking for transition words – **the words the writer used to show that a reason is being given**. Show them the chart of transition words and have them locate the ones in the paper. Have the students circle the transition words. Reinforce that the transition words help you to find the reasons in the paper! Spend some time discussing this. Label each reason with a number.

D. Also note how the writer gives the reason and then tells more about the reason (expands on it). Be sure to point out the counter reason and how the author explains it! It is OK to move around the chart out of order as you find the parts – they don't have to be found in order.

E. Have the students locate the ending sentence and underline it.

F. Examine the parts - are they all there?

VI. Introduce TREE Graphic Organizer

Introduce the TREE graphic organizer. Show the students how to write the parts in **note form** on the organizer. Make sure you **number the reasons** as you are doing this. It is OK to move around the chart out of order as you find the parts - they don't have to be found in order. When all parts have been identified complete the last step – **examine** – checking the "yes" space.

_____VII. Practice TREE Reminder

Practice the TREE reminder and what each letter means. Turn over chart. Ask student to tell you the "writing to persuade parts reminder", and what each letter stands for. Then, ask student to write the reminder on scratch paper, and tell what each letter stands for. If student have trouble, turn chart back over and allow them to look. Repeat several times till the student gets comfortable. If you have extra time, use POW cards for extra practice.

_____X. Lesson Wrap Up

A. Announce test! (no grade!) next session. They will come and write out POW and TREE and tell what they mean from memory.

B. Give each student their own folder and a copy of the TREE parts reminder chart. Have student put today's work and their charts in their folder and give the folder back to you ~ explain you will bring the folder to every class.

Should Children Have to Go Outside for Recess?

Everyone should have to go outside for recess. One reason everyone should go outside is because children need to move their bodies. Another reason for going outside is it is hard to sit in one place all day. Another good reason for going outside is that you get to meet kids from different grades and classes. A final reason for going outside is to play sports. These are the reasons why I believe kids should go outside for recess.

Should Children Have to Go Outside for Recess?

Everyone should have to go outside for recess (topic). **One** (transition word) reason everyone should go outside is because children need to move their bodies. **Another** (transition word) reason for going outside is it is hard to sit in one place all day. **Another** (transition word) good reason for going outside is that you get to meet kids from different grades and classes. A **final** (transition word) reason for going outside is to play sports. These are the reasons why I believe kids should go outside for recess (ending).

WRITING TO PERSUADE
TREE with TRANSFER: LESSON # 1 – Part 2

Teacher: _____

Date:_____

Student(s): _____

Purpose: Develop Background Knowledge, Discuss It Objectives: Review and practice POW, writing to persuade, TREE; identification of persuasive writing elements in paper example; establish concept of transfer

Materials Needed Mnemonic charts and paper example (for country), TREE graphic organizer, transition word chart, POW practice cards, "I transferred my strategies" chart, pencils, scratch paper, student folder

____ I. Test POW and TREE

Test to see if the student remembers **POW** and the **TREE reminder.**

Rapid Fire Practice
Give the student a set of cue cards (for POW/TREE, start practice with cue cards with picture cues then wean the student to cards without picture cues). Say, "To help you remember the parts, we are going to do an exercise called rapid fire. We will take turns saying the parts. This is called rapid fire because you are trying to name the parts as rapidly as you can. If you need to look at the cue card, you may; however, don't rely on the card too much because I am going to put the card away after several rounds of rapid fire." Allow the student to paraphrase but be sure intended meaning is maintained. Do with cue cards and without. If response is correct, make brief positive comment. If incorrect, prompt by pointing to cue card.

A. Give the student a piece of scratch paper. Ask the student to **write down POW** – then ask student what each letter stands for, and why it is important for writing stories. If student has trouble remembering POW, practice it using rapid fire with the cue cards.

B. Remind the student that **O** needs a trick for organizing. Ask the student what the trick is for organizing my notes for writing to persuade. Ask student to **write out the writing to persuade reminder mnemonic/trick** on the scratch paper. The student should write: **TREE**. If the student has trouble, be supportive and prompt as needed.

C. Now **ask the student what each part of the writing to persuade reminder stands for**.

D. It is essential that the student memorize the reminder. If the student is having trouble with this, spend a few minutes practicing it using rapid fire with the cue cards.

E. Tell the student you will test him/her on it each day to make sure he/she has it. Remind the student that he/she can practice memorizing it.

_____II. Find TREE

Now we're going to read and **examine** a writing to persuade paper to find out if the writer used all of the parts - what I believe, at least three reasons why, and an ending sentence. (Leave out the TREE chart where students can see it.)

A. Give each student a copy of the first writing to persuade paper; ask students to read along silently while you read the paper out loud. Tell them to raise their hands when they hear what the writer believes, each reason why, a counter reason, and an ending sentence. Be sure each part is identified.

B. Give each student a pencil. When they have identified the topic sentence have them underline it.

C. Next tell the students that you will be looking for transition words – **the words the writer used to show that a reason is being given**. Show them the chart of transition words and have them locate the ones in the paper. Have the students circle the transition words. Reinforce that the transition words help you to find the reasons in the paper! Spend some time discussing this. Label each reason with a number.

D. Have the students locate the ending sentence and underline it.

E. Examine the parts - are they all there? As the student examines to be sure all parts are there: what I believe (topic), reasons why (at least 3), and ending; you write each in the appropriate space on the graphic organizer: **do not use full sentences – do this in note form.** Be sure that the student understands that you are writing in **note form!**

____ III. Introduce Transfer

Tell the student: **"We have a goal for our POW and TREE strategies."**

A. **Goal 1 for next time: use all or parts of POW and/or TREE in other classes or for other writing tasks. Brainstorm together some classes or other writing tasks they could use both POW and TREE for, being sure to note that we should use POW with TREE whenever we use TREE. Other ideas could be: letters to friends, reports on special topics, writing for a school newsletter, writing to a leader like the principal or the president; any writing where you wanted to tell someone your opinion or convince them you are right. Briefly note that for some tasks, all parts of the TREE trick might not be right to use - so what could we do? (Change TREE to fit the kind of paper we need to write; don't use all of TREE if it doesn't make sense).

B. **Tell them to report back to you on using all or any parts of POW/TREE next time (for example, students might report making notes for a writing task before they wrote, this would count). Show student the "I transferred my strategies" chart and explain that **once a week** you will write down each time he/she tells you about using all or any part of POW/TREE outside of this class. Briefly discuss the word **"transfer"** – transfer means to move (like I transferred schools means that I moved from one school to another). Emphasize that you want him/her to **transfer** what they learn about POW and TREE from this class to other classes and other writing tasks.

___ IV. Lesson Wrap Up

A. Announce test! (no grade!) next session. He/she will come and write out POW and the writing to persuade reminder and tell what they mean from memory.

B. **Remind the student to transfer the strategy, that you will ask him/her next time if he/she transferred, and that you will be recording on their chart later in the week.

C. Give the student his/her folder, a copy of the writing to persuade reminder chart, and a copy of the "I transferred my strategies" chart. **Have them put today's work and charts in their folder and give the folder back to you – explain that you will bring the folder to every class.**

Is it better to live in the city or the country?

I think it is better to live in the country than the city. First, country living is fun because you can play in the fields and woods. Second, when you live in the country you get to work with the animals. Third, the country has clean air. Finally, the country is so quiet at night that you can hear the bugs sing. The country is where I would like to live because then I would have more fun, feel better, and get to be with the animals.

Is it better to live in the city or the country?

I think it is better to live in the country than the city (topic). **First** (transition word), country living is fun because you can play in the fields and woods. **Second** (transition word), when you live in the country you get to work with the animals. **Third** (transition word), the country has clean air. **Finally** (transition word), the country is so quiet at night that you can hear the bugs sing. The country is where I would like to live because then I would have more fun, feel better, and get to be with the animals (ending).

Appendix B
Interview Questions

Interview Questions (Prior to PD)

1. How many years have you been teaching, including this year? What grade(s) do your currently teach?
2. How many children are currently in your classroom? How many children have behavior and writing difficulties?
3. What are you own thoughts, knowledge, and beliefs, about writing?
4. Tell me about your writing instruction for students with EBD?
5. Do you like teaching writing?
6. What is the process your students go through when they compose?
7. Have you received training on writing strategies before? If yes, how much of your instructional time in writing involves teaching writing strategies?
8. Do you feel the instructional strategies would be beneficial for your students?
9. What do you use to teach writing?
10. What kinds of conversations do you have with other teachers at your school about how to teach writing?
11. Describe the ideal professional development you would want to go attend to learn more about how to teach writing?

Interview Questions (After PD)

1. How has participation in the PD changed your beliefs about your writing instruction?
2. Tell me about any changes you have made in your writing instruction?
3. What do you like most about this type of instruction?
4. How do you feel the instruction could be improved?
5. Have your students been able to generalize self-regulation strategies to different tasks?
6. Have you shared any of your writing instructional approaches with any of your colleagues?
7. Do you think you will continue to integrate strategy instruction into your writing instruction?

Appendix C
Behavior Coding Manual

Dimension A	Subtype	Descriptors
1. Develop and Activate Background Knowledge	**Definition: Previous background knowledge is activated and discussed to ensure students have the background knowledge and skill necessary for the writing task.**	
	1. Opinion Essays	· Basic reading skills – *"Teacher asks students knowledge of each component of an opinion essay."* · Writers Beliefs – *"Teacher discusses with students that a good opinion essay tells the reader what the writer believes."* · Reasons – *"Teacher discusses that an opinion essay gives three reasons why they believe an issue or topic to be true and provides an explanation for each reason."* · Ending – *"Teacher discusses that an opinion essay has an ending."* · Teacher can ask students to identify elements of persuasive essays that they are reading in class or essays written by other children. · Teacher can ask students to identify ideas for each part of opinion essays. **NOTE**: the intent is not asking students to memorize each step but helping determining which parts (or terms) students know and introduce parts (or terms) that the student does not know to make the next stage easier for the student to learn all of the parts.
	2. Story Writing	· Basic reading skills – *"Teacher asks students their knowledge of and ability to identify the components of a story."* · Story characters – *"Teacher asks students if they can identify the main character of the story?"* · Story setting – *"Teacher asks students if they can identify where and when the story takes place?"* · Story actions – *"Teacher asks the students to identify what the main characters do?"* · Knowledge of emotions – *"Teacher asks students if they can identify how the main character feels?"* · Endings or resolutions – *"Teacher asks students to identify how the story ends?"* **NOTE**: the intent is not asking students to memorize each step but helping determining which parts (or terms) students know and introduce parts (or terms) that the student does not know to make the next stage easier for the student to learn all of the parts.
	3. Elaborating Sentences	· Teacher discusses with the student how to elaborate a sentence – *"Today we are going to stretch out our sentences by elaborating. Elaborating means making sentences more interesting to read by adding specific information."* · *Let's take a look at this sentence - The airplane. If I want to know more information about the airplane, like when it lands, I need to add more detail to the sentence. The airplane landed at 1:30pm. Do you see how I added more detail to the sentence? I added the time that it landed.* · Teacher identifies situations when it is appropriate to elaborate a sentence. · Teacher asks students to commit to writing detailed sentences.
	4. Brainstorming Ideas	· Teacher checks students knowledge of the term brainstorming – *"What does the word sound like? It is like a storm in your brain that makes you think about lots of ides? We can brainstorm ideas of things we like to write about."* · Teacher checks to see if students are familiar with different ways to generate

		ideas (e.g., cubing, freewriting, listing, and mapping). · Cubing – examine a topic from different viewpoints (what is it? How can it be used? What does it make you think of?) · Freewriting – write for a certain amount of minutes, number of pages, do not go back and edit or worry about spelling. · Listing – What do you want to communicate and what elements will you convey? The list can consist of opinions, arguments, facts, questions etc. · Mapping – This is known as clustering or webbing and is a graphic form of listing that involves jotting down ideas and making connections **NOTE**: Teacher can discuss just one of the ways to generate ideas.
Dimension A	**Subtype**	**Descriptors**
2. Discuss It	**Definition: The teacher discusses the student's current writing performance and the current strategies that the student uses to write. The teacher can also discuss the new strategy that they will use for future writing.**	
	1. Writing Performance	· Student and teacher discuss current writing performance using a previous writing sample. · "The reason I want to talk with you is that we have been doing a lot of writing this year and I know sometimes writing can be a difficult thing to do. Let's take a look at some of the papers that you wrote this month. You really did a nice job _____ [points out positives]. However, if I try and understand what your opinion is on _____ [topic of the paper], it is difficult for me."
	2. Things Good Writers Do	· Teacher and students discuss what good writers do? – *"Good writers use capital letters, write neatly, and put a period at the end of a sentence."* · The teacher shows students a story and points out good things that the writer did writing a story, essay etc. · *"Good writers brainstorm ideas…then think about it and write it…look it over to see how to make it right…then they do a final copy and go over that; and then, if it is still not right, they do it again."* · Teacher asks students to commit to being good writers in class. **NOTE**: there are many other things good writers do and this is just an example.
	3. Strategy for Writing Opinion Essays	· Teacher introduces a new strategy and discusses with the students how and when to use the strategy – *"I have an idea how we can make your opinion clearer in your writing. You know how you use tools in shop class to make your projects better? The tool is a strategy called POW + TREE. The POW part of this strategy gives you the power when you write, and the TREE part helps you to remember all the parts to a good opinion essay."* · Teacher shows the students a mnemonic chart to reveal TREE. – *"Let's look at the parts that make up a good opinion essay."* · T: *The topic sentence is like the trunk. It is strong, and every part of the tree is connected to it.* · R: *The reasons are like the roots. They support the trunk. The more roots (or reasons) a tree has, the stronger the trunk will be.* · E: *The next part of TREE is explain. Explain means to tell more about your reasons. The more explanations, the stronger the reasons and the stronger the trunk.*

		▪ E: *The ending is like the earth. It wraps around the tree, as in wrap it up.* ▪ *Teacher identifies situations or various tasks when the student can use the strategy being taught – "When would it be appropriate for you to write a persuasive opinion essay?"* ▪ Teacher asks students to commit to learning the strategy.
	4. Strategies	▪ Teacher discusses meaning of a strategy – "A strategy is a set of operations or actions that person consciously undertakes in order to accomplish a desired goal. ▪ Strategies involve "how to" to accomplish the desired goal. This can consist of more general guidelines, such as advice given to beginning reporters to include information about who, what, where, when, why and how when describing an event. ▪ Step-by-step technique for accomplishing a specific objective. ▪ For writing this may include knowledge about how to write a certain type of poem, such as a haiku. ▪ Discusses strategy for tackling hard problems like writing an entire essay. ▪ Strategies are purposeful, procedural, willful, and effortful. Strategies include a procedure or plan for accomplishing a desired objective and must be deliberately activated and require commitment and effort to be effective.
	NON-EXAMPLES	▪ Teacher discusses a lesson, unit, topic that pertains to writing. ▪ The teacher does not discuss students' current writing performance. ▪ The teacher does not discuss goals for learning the strategy. ▪ The teacher does not discuss how and when to use the strategy.
Dimension A	**Subtype**	**Descriptors**
3. Model It	**Definition: The teacher models the writing strategy while writing a composition and refers to wall charts, cue cards, or graphic organizers to prompt each step of the writing process. The teacher can model working trough a problem, planning a writing composition, self-evaluation, and self-reinforcement. The teacher must think-aloud to demonstrate use of the strategy. Teachers that model how to use a writing strategy make mental actions more transparent by demonstrating verbally and visually how to do them.** **Note: the teacher must think aloud while modeling one or several of the strategies.**	
	1. Think Aloud	▪ Explain to students the kinds of things you say to yourself when you want to think of good essay ideas or parts – *"What do I have to do? I have to write a good opinion essay. My essay needs to make sense and have all the parts. Remember P in POW – Pick my idea. I have to let my mind be free. Take my time and think about what I believe and some good reasons will come to me."*
	2. Follow Steps of Strategy	▪ Explain to students how you are going to plan your essay – *"Now I can do O in POW, which stands for Organize my notes. I can write down ideas for each part. I can write ideas down in different parts of this page as I think of them."* ▪ Talk out and briefly write notes for the topic sentences – *"First, what do I believe? What do I want the reader to believe? What do I want to tell the reader I believe?"*
	3. Self-Reinforcement, Self-Statements	▪ Talk out and briefly write notes for at least three reasons in note form and use coping statements – *"Good! I like this idea! Now I need to come up with at least reasons and give an explanation for each reason. Let my mind be free. Think of good ideas."* ▪ Model coping statements after generation notes for all essay parts – *"Now I*

		can look at my notes and see if I can add more notes for my essay arts. I can also look for ideas for good choices or million-dollar words." • Model talking yourself through writing the essay – *"Now I can do W in POW, which stands for Write and Say more. I can write my opinion essay and think of more good ideas or million-dollar words as I write. How shall I start? I need to tell the reader what I believe, so I'll need a topic sentence. Am I using all of my parts so far? Does my essay make sense? Will the reader believe my reasons? Good work! I'm done. It'll ne fun to share my essay with others."*
	4. Model Task	• Model how to stretch out a sentence and make it more specific – *"The plane landed. When did the plane land? The plane landed at 1:30pm. I elaborated my sentence by adding the time that plane landed. Good work!*
	NON-EXAMPLES	• If the teacher does not think aloud during modeling then it should not be coded. • The teacher will tell students they are going to write an opinion essay and use a strategy to help them. The teacher will tell them what each part stands for and then ask them to try it on their own. • Teacher asks the students to stretch out a sentence. The teacher provides them with sentences on a worksheet and asks them to elaborate.

Dimension A	Subtype	Descriptors
4. Memorize It	**Definition: The teacher asks the students to memorize the steps in the composing strategy and the meaning of any mnemonics that represent the strategy steps.**	
	1. Facilitate Memorization	• Teacher plans an activity that facilitates memorization – *"Teachers asks students to recite the strategy with a partner."* • Teacher plans and prepares and activity so students can monitor each step. • The teacher might give each student a checklist that lists all of the steps of the strategy so students can check off each step that is competed. • The teacher might give the student card prompts that have the strategy and meaning of each part. The students will use this to practice memorizing each step. • Partners typically will practice together by quizzing each other. Note: If you are unable to hear what the students are doing, that is ok. This can be coded as long as the teacher provides the students with directions and allows the time to practice.

Dimension A	Subtype	Descriptors
5. Support It	**Definition: The teacher should support or "scaffold" students' strategy use. The teacher should provide as much support or assistance as needed and should write collaboratively with any students that need this level of assistance.** **Note: The goal of this stage is to support the students' effort as they are learning the procedures. Support might look different for individual students as they become more adept at using the strategies.**	
	1. Content Scaffolding	<u>Opinion Essays</u> • The teacher directs the process and the students provide answers to teacher-directed questions.

		▪ The teacher provides students with a simple opinion essay and the teacher and students go over the opinion essay and find all of the parts. ▪ The teacher could provide considerable support by developing a writing outline. The teacher can act as the lead collaborator while planning the essay. As the students and teacher are planning, the teacher might commit an error, such as forgetting a strategy step. The teacher might discuss the error and then model how to correct the mistake. ▪ The teacher might model how to correct the mistake – *"I need to try to follow all of the strategy steps, so I can write a good essay."* ▪ Less intrusive forms of assistance include reminders to carry out a step, a prompt to devote more attention to a specific process (generate more possible supporting reasons), and feedback on the use of the strategy and accompanying self-regulation procedures. **Note:** The teacher's role may become less intrusive as students become more adept at using the strategy. <u>Writing Sentences</u> ▪ The teacher provides students with a sentence and the teacher and students come up with an idea to add to the sentence. ▪ The teacher shows students a sentence on the whiteboard, *"I go to the airport."* ▪ The teacher asks the students to come up with an idea how they will get to the airport. ▪ The teacher records the students' response on the whiteboard. <u>Domain Knowledge</u> ▪ The teacher and student discuss ideas related to the topic. ▪ The teacher uses audio or visuals to support students understanding on the content. ▪ The teacher records the students' response on the whiteboard and refers back to them during the discussion or while collaboratively writing an essay. ▪ Teacher can develop domain knowledge for any type of writing genre (e.g., not specific to opinion essays).
	2. Task Scaffolding	<u>Opinion Essays</u> ▪ The teacher prompts the student to name the steps in the strategy that should be performed; then the teacher describes the step and models it. ▪ The teacher might revisit the rationale underlying an individual step. ▪ The teacher might provide assistance about which self-statements would be helpful to each student. <u>Writing Sentences</u> ▪ The teacher describes where to place nouns and prepositions in a sentence – *"The teacher asks students to name the noun and preposition. The teacher provides students with a sentence and asks them to insert a noun and a preposition from the picture they are using for this task."*
	3. Material Scaffolding	<u>Opinion Essay</u> ▪ Teacher provides the student with a mnemonic prompt card to be placed at their desk. "The teacher fades parts of a prompt card, first the description of the prompt, the mnemonic that the strategy stands for, or the steps all together. ▪ The teacher will encourage students to use self-statements in their minds. <u>Writing Sentences</u>

		▪ The teacher provides students with a sentence strip, the sentence strip has a blank line where the student can insert a noun and a preposition and the student is asked to write the sentence in their journal and fill in a noun and preposition where there are blank spaces. ▪ The teacher can provide as much or little support as needed in helping students fill in a noun and preposition.
	4. Goal Setting and/or Graphing	▪ The teacher will encourage students to use goal setting and progress monitoring (counting and graphing elements) in conjunction with the writing strategy (Prior to writing the essay the students will have set a goal to include all of the parts of an opinion essay in their papers. ▪ Once the essay is completed, the students will review their papers and determine if any parts are missing as well as counting and graphing the number of essay elements). ▪ The students might be sharing their papers with each other and provide strengths and weaknesses of each other's arguments. **Note:** This should be coded if the teacher is encouraging the students to use goal setting and progress monitoring. It is not necessarily important to hear the information that students are providing to their peers.
Dimension A	**Subtype**	**Descriptors**
6. Independent Performance	**Definition: The teacher monitors the students' performance and checks to see if the student is using the strategy properly and consistently.**	
	1. Examine Students' Writing Performance	▪ Teacher and student look at writing students' writing samples from their portfolio to check for improvement in writing skills. ▪ The students will be able to plan and write essays without the teachers help. ▪ The teacher should provide positive and constructive feedback as needed. ▪ The teacher can facilitate a discussion how to use the strategy in other classes.
	2. Generalization of Strategy	▪ Teacher asks students to explain the purpose of the strategy and reiterate its basic steps. ▪ Teacher asks students to keep a log of each time they used the strategy effectively. ▪ Discusses importance of the strategy. ▪ Reminds student's to use strategy in class. ▪ Discusses how the strategy the students learn can be used in other classes. ▪ Discuss how to adapt what students have learned for future use of the writing strategy. ▪ Teacher asks students how they would change instruction for teaching the strategy.
	NON-EXAMPLES	▪ The teacher asks the students to complete a task but does not provide any feedback about the task. ▪ The teacher does not discuss the importance of strategy or elaborating sentences.

Dimension A	Subtype	Descriptors
7. Self-Statements	**Definition: These are referred to as self-speech. Teacher should help students develop self- speech statements that are relevant to the students' writing or individual needs. If the teacher uses self-speech, then that should be coded as modeling.** **Note:** This should only be if the student is using self-statements or self-instructions.	
	1. Self-Statements	· Easily frustrated student – *"I can do this if I use my strategy and take my time."* · Discusses how a statement they say can help or hinder the situation and shares some of the self-speech statements that he or she says while writing – *"This is kind of tough for me, but I know I can do it; I've come this far. I can't quite now."* · Defines the nature and demands of the task - *"What is it I have to do here?"* · Discusses how to attend to tasks and generate plans - *"I have to concentrate; first I need to…then…"* · *"I need to look at my picture first."*
	2. Self-Instructions (Strategy Steps or self-evaluation)	· Discusses how to use a strategy - "I need to write down my strategy reminder…" · Discuses error detection and correction - "Have I used all my parts – oops, I missed one, better add it in…"
	3. Self-Instructions (Coping and Self-control)	· Coping with difficulties and/or failure - "I can handle this; go slow and take my time…"
Other Codes	1. Transition	· Prepare and explain the writing activity and objectives, set-up time, student movement between activities, students getting or putting back materials, moving into groups or other classrooms.
	2. Behavior Management	· Non instructional time
	3. Other	· Non-writing instruction (e.g., incidental math, fire drill, announcements)
	4. Research	· Research on computer · Looking up facts in a book · Typing on computer
	5. Independent Seat Work	· Working independently at seat completing a task

Appendix D
Partial Interval Coding Observation Form

SRSD Title of Lesson: _____

Date: _____ **Start Time:** _____ **End Time:** _____ **Observer:** _____

School: _____ **Teacher:** _____ **Grade:** _____

Notes:

Dimension A: Content Category (K = Develop and Activate Background Knowledge to S = Self-Statements or O=All Other Instructional Content).
Sub-A: Subtypes of each dimension.

60 Second Interval	Example	Teacher Behavior			
		Dimension A (Sub-A)	Dimension A (Sub-A)	Dimension A (Sub-A)	Dimension A (Sub-A)
1					
2					
3					
4					
5					
6					

Appendix E
Persuasive Writing Prompts

Persuasive Writing Prompts

Do you think students should have to go to school in the summer?

Do you think teachers should give homework?

Do you think kids should be required to clean their room?

Should children be allowed to eat whatever they want?

Should kids be allowed to have their own pets?

Should parents give their children money for having good grades on their report cards?

Should kids be allowed to choose their own bedtimes on school nights?

Should students be able to choose the things they study in school?

Do you think kids should be punished when they do something wrong?

Should kids be required to learn how to use computers?

Should sports stars be treated as heroes?

Should students be required to wear uniforms to school?

Is it better to be an only child or to have brothers and sisters?

Should students be allowed to eat snacks in the classroom?

Do you think children should be allowed to choose the television they watch?

Do you think the school day should be longer?

Do you think parents should decide who your friends are?

Are school rules necessary?

Do you think teachers should give students homework?

Should teachers give students grades?

Should boys and girls go to different schools?

Should boys and girls play soccer together?

Scale for Scoring the Elements of a Persuasive Essay

Student: Coder: Date: Prompt letter: Essay and phase number:

TOTAL SCORE _____

Directions: Read the persuasive response once to get a general impression, then look at the story again to score each part. For each part, circle the appropriate rating. Total the sum of the ratings and enter the score in the space provided.

Score of 8. Persuasive response includes a belief/topic sentence, three or more reasons, an explanation for at least 3 reasons**, a counter reason & a refute**, and an ending sentence. Response is organized into a paragraph(s) with sentences.

Score of 7. Persuasive response includes a belief/topic sentence, three or more reasons, an explanation for at least 3 reasons, **a counter reason**, and an ending sentence. Response is organized into a paragraph(s) with sentences.

Score of 6. Persuasive response includes a belief/topic sentence, three or more reasons, **an explanation for at least 3 reasons**, and an ending sentence. Response is organized into a paragraph(s) with sentences.

Score of 5. Persuasive response includes a belief/topic sentence, **3 or more reasons**, **1 or 2 explanations**, and **an ending sentence**. Response is organized into a paragraph(s) with sentences.

Score of 4. Persuasive response includes a belief/topic sentence, **2 or more reasons**, and **2 or more elements of a persuasive response** (e.g., explanation(s) counter reason, ending). Response is organized into paragraph(s) with sentences.

Score of 3. Persuasive response includes a belief/topic sentence, 1 or more reasons, and **some other element of a persuasive response** (e.g., explanation or ending sentence). Response is organized into a paragraph(s) with sentences

Score of 2. Persuasive response includes a belief/topic sentence with a **reason** or a list of reasons. Response is not organized using paragraph structure.

Score of 1. Persuasive response includes a **belief/topic sentence** with no other persuasive elements; OR includes a belief/topic sentence, but then argues both sides of the argument (e.g., Student's position is not clear.)

Score of 0. No parts of a persuasive response are provided.

Appendix F
Professional Development Treatment Fidelity Form

Professional Development Tasks		
Discuss students of individual teachers	**Yes**	**No**
Share pre-service and in-service experience	**Yes**	**No**
Share examples of student writing before and after instruction	**Yes**	**No**
Explain the rationale behind SRSD	**Yes**	**No**
SRSD for Writing		
Provide overview of six stages	**Yes**	**No**
Discuss effective strategy instruction	**Yes**	**No**
Describe goal setting	**Yes**	**No**
Describe self-instructions	**Yes**	**No**
Describe self-monitoring	**Yes**	**No**
Describe self-reinforcement	**Yes**	**No**
Discuss genre elements for persuasive essays	**Yes**	**No**
Discuss characteristics of effective writing	**Yes**	**No**
Discuss current instructional elements teachers use	**Yes**	**No**
Materials		
Provide each teacher with instructional notebook	**Yes**	**No**
Orient teachers to content	**Yes**	**No**
Modeling and Supported Practice		
Watch SRSD Video	**Yes**	**No**
Practice	**Yes**	**No**

Appendix G
Coaching Fidelity Treatment Form

Fidelity Checklist for Coaching

Coaching Tasks		
	YES	**NO**
Ask teacher what they would like to discuss?		
Coach asks teacher what he or she would like further assistance with?		
Teacher asks coach how effective lessons are in helping students increase understanding of persuasive writing using SRSD? What areas they still need help with?		
Provides reflection time (e.g., what instructional modifications supported the students' learning of persuasive writing using SRSD?) using probing reflection questions.		
Set goal for next coaching session and follow up on previous goal.		
Coaching Behaviors		
Did the coach provide choice about what he/she wanted to discuss?		
Did the coach provide teacher with opportunities to express their point of view?		
Did the coach and teacher engage in conversation?		
Did the teacher reflect and think about ideas for future instruction?		
Did the teacher and coach work together and develop ideas for next writing lesson?		

Appendix H
Social Validity Measures

Adapted Version of the Intervention Rating Profile-15 –PRE

The purpose of this questionnaire is to obtain information that will aid in the selection of classroom interventions. These interventions will be used by teachers of children with identified needs. Please circle the number which best describes your agreement or disagreement with each statement.

	Strongly Disagree	***Disagree***	***Slightly Disagree***	***Slightly Agree***	***Agree***	***Strongly Agree***
1. This would be an acceptable intervention for the child's needs.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for children with similar needs.	1	2	3	4	5	6
3. This intervention should prove effective in supporting the child's needs.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The child's needs are severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the needs of this child.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention would *not* result in negative side effects for the child.	1	2	3	4	5	6
9. This intervention would be appropriate for a variety of children.	1	2	3	4	5	6
10. This intervention is consistent with those I have used in classroom settings.	1	2	3	4	5	6
11. The intervention is a fair way to handle the child's needs.	1	2	3	4	5	6
12. This intervention is reasonable for the needs of the child.	1	2	3	4	5	6
13. I like the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention would be a good way to handle this child's needs.	1	2	3	4	5	6
15. Overall, this intervention would be beneficial for the child.	1	2	3	4	5	6

Comments:

_____
_____
_____

Adapted Version of the Intervention Rating Profile-15 –POST

The purpose of this questionnaire is to obtain information that will aid in the selection of classroom interventions. These interventions will be used by teachers of children with identified needs. Please circle the number which best describes your agreement or disagreement with each statement.

	Strongly Disagree	***Disagree***	***Slightly Disagree***	***Slightly Agree***	***Agree***	***Strongly Agree***
1. This was an acceptable intervention for the child's needs.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for children with similar needs.	1	2	3	4	5	6
3. This intervention proved effective in supporting the child's needs.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The child's needs were severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the needs of this child.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention did *not* result in negative side effects for the child.	1	2	3	4	5	6
9. This intervention would be appropriate for a variety of children.	1	2	3	4	5	6
10. This intervention was consistent with those I have used in classroom settings.	1	2	3	4	5	6
11. The intervention was a fair way to handle the child's needs.	1	2	3	4	5	6
12. This intervention was reasonable for the needs of the child.	1	2	3	4	5	6
13. I liked the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention was a good way to handle this child's needs.	1	2	3	4	5	6
15. Overall, this intervention was beneficial for the child.	1	2	3	4	5	6

Comments: _____

_____

_____

Adapted Version of the Child Intervention Rating Profile–PRE

	I agree					***I do not agree***
1. The writing program we will use to learn persuasive writing sounds fair.						
2. I think my teacher will be too harsh on me.						
3. Being in this writing program may cause problems with my friends.						
4. There are better ways to teach me how to write better.						
5. This persuasive writing program will help other kids, too.						
6. I think I will like being in this program.						
7. I think learning how to write persuasive essays will help me do better in school.						

Comments:

_____

_____

_____

Adapted Version of the Child Intervention Rating Profile–POST

	I agree					***I do not agree***
1. The program we used was fair.						
2. I think my teacher was too harsh on me.						
3. Being in this program caused problems with my friends.						
4. There were better ways to teach me to write better.						
5. This program could help other kids, too.						
6. I liked the program we used.						
7. I think being in this program will help me do better in school.						

Comments:

_____

_____

_____