COMPONENT ANALYSIS OF SELF-REGULATED STRATEGY DEVELOPMENT:
EFFECTS OF SELF-STATEMENTS ON STUDENT WRITING

by

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Abstract

The Self-Regulated Strategy Development (SRSD) model of writing instruction, which has been successfully used to improve student writing, is a multi-component, instructional model that combines explicit writing task strategy instruction with implicit instruction on self-regulation. One component of self-regulation identified in the model is self-instruction (i.e., students’ use of self-statements to regulate their emotions and behavior during the writing process). Recent research is unclear regarding the effectiveness of explicit instruction on self-statement use. The current study used a between groups design across six instructional pairs of students in grades 5 to 7 to determine if self-instruction is a critical component of the SRSD model. Three pairs of students received explicit instruction on the use of self-statements (SRSD+ group), the other three pairs did not (SRSD- group). Between groups differences in change were examined using a mixed effects, repeated measures ANOVA with a random intercept at the pair level. Results indicated that all groups showed significant improvements across most measures over time; however, there were no statistically significant differences in change between the SRSD+ and SRSD- groups. When effect sizes were examined, students in the SRSD- group showed large improvements relative to the SRSD+ group in self-efficacy, and small improvements in writing duration, Correct Writing Sequences (CWS), Percent Correct Writing Sequences (PCWS) and scores from British Columbia Performance Standards in Written Expression (BCPS-W) when compared to the SRSD+ group.
Preface

This thesis, *Component Analysis of Self-regulated Strategy Development: Effects of Self-statements on Student Writing*, is the original, unpublished work of the author, Rhonda Geres-Smith, under the supervision of Dr. Sterett Mercer. The project and associated methods were approved by the University of British Columbia’s Research Ethics Board [certificate # H13-03430]. Data collection was supported by a grant from the National Association of School Psychologists to the author, Rhonda Geres-Smith. The basic design of the study was created collaboratively by the author and Dr. Mercer with input from Dr. Nancy Perry. Specific instructional procedures were developed by the author with input from Dr. Mercer. All instructional materials described in the Methods section were adapted from work published by Harris, Graham, Mason, & Friedlander (2008). Scoring of writing probes and fidelity checks of instructional procedures were completed by the author in collaboration with Catherine Archambault and Jamie Bartfai, respectively.
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I. Introduction

Writing is an essential skill. Within the academic domain, writing serves many important functions. Students who are proficient writers are more able to take coherent notes, complete class assignments, and use writing to support learning. Additionally, written work is often the primary method by which teachers assess student knowledge; therefore, students who are skillful writers are more likely to obtain high grades, achieve academic success, and attend college (Graham & Perin, 2007). Beyond academia, proficient writing is a necessity for employment and promotion within industry. Employees are increasingly expected to compose well-written documents in the form of reports, summaries, and correspondence. Individuals who do not write proficiently are less likely to be hired in industry and, if they are employed, are less likely to be promoted (National Commission on Writing, 2006). Writing has become a critical life skill and as such it needs to be effectively developed throughout a student’s educational career.

Learning to write effectively, however, is a complex and demanding task with which many students struggle. Many students in both Canada and the United States do not possess the level of writing ability needed for success in school and the workforce. College teachers estimate that 50% of graduating high school students are inadequately prepared for the demands of college writing (Achieve, Inc., 2005). Results of national testing for writing in both the United States and Canada indicate that a large proportion of students have writing abilities below what is expected for success at their grade level. For example, The National Assessment of Educational Progress Report (U.S. Department of Education, 2011) indicated that 73 percent of American students in grades 8 and 12 perform below the proficiency level for writing at their grade. Similarly, the School Achievement Indicator Program for Writing (2002) indicated that 40 percent of 16-year-old Canadian students have not reached expected writing levels. Although it
is clear that the ability to write skillfully is important for both academic and employment success, many students within the educational system are still unable to obtain a minimum level of proficiency. Educators, governments, and researchers must examine current writing instructional practices to determine how to better support students who are struggling to acquire this necessary skill.

One instructional approach that has been well-researched and successful in improving student writing is the Self-Regulated Strategy Development (SRSD) model. Recent research has demonstrated that the SRSD model of writing instruction has repeatedly been successful in improving student writing across genres at the elementary, middle and secondary level (Chalk, Hagan-Burke, & Burke, 2005; Graham, Harris, & Mason, 2005; Graham & Perin, 2007; Mason & Graham, 2008; Tracy, Reid & Graham, 2009). This multi-component instructional model utilizes self-regulated learning theory and combines specific writing task strategy instruction with strategies designed to promote self-regulated learning (Mason, Harris, & Graham, 2011). The complete model has had much success in improving student writing, but a clearer understanding of the relative impact of various aspects of the model would inform educators about how to focus instructional time and resources on critical aspects of writing instruction.

**Self-Regulated Learning Theory**

According to Self-Regulated Learning Theory, self-regulated learners systematically use metacognitive, behavioral and motivational strategies to achieve their learning goals (Zimmerman, 1990; 2008). Research has shown that the self-regulation of learning is not a specific trait or mental ability that an individual possesses or does not possess, but rather involves the selective use of specific processes that are adapted to the task at hand (Zimmerman, 2002). The phases of self-regulation include forethought, analyzing the task and setting goals
prior to strategy implementation; performance, choosing the appropriate strategies to accomplish the task and implementing those strategies; and self-reflection, assessing progress toward the goals and determining whether to alter behavior or strategy use (Zimmerman, 2002). Compared to poor self-regulators, good self-regulated learners set better goals, more efficiently assess progress, create more effective environments for learning, are more likely to seek assistance when needed, expend more effort, use learning strategies more effectively, and show greater persistence (Zimmerman & Schunk, 2008). The SRSD model incorporates aspects of self-regulated learning theory to encourage students to purposefully use self-regulatory strategies such as goal setting, self-monitoring and self-statements throughout the writing process.

**Goal setting.** Goals are good regulators of human behavior because they can enhance motivation and provide information about progress by allowing a comparison to be made between the student’s present performance and the goal performance. Research on goal setting and self-regulation has shown that students who set specific, proximal goals show increased achievement and self-efficacy (Zimmerman, 2002). When students set attainable short-term goals and develop strategies to achieve those goals, they are more likely to produce behavior that results in goal attainment. If a student observes sufficient progress being made toward the goal, feelings of self-efficacy and motivation usually increase (Harris & Graham, 1996).

Additionally, goals are most effective when they are participative and process-oriented. Participative goals are those goals that students and teachers set collaboratively; these types of goals are emphasized in the SRSD model because beginning writers often have difficulty setting realistic goals (Harris & Graham, 1996). Furthermore, student participation in the goal setting process leads to stronger student commitment and helps to scaffold students in creating their own future goals (Harris & Graham, 1996). Process-oriented goals are those goals based on executing
the learning strategy, whereas product-oriented goals are those based on the final outcome of the strategy. Research has shown that process-oriented goals are more effective in improving student performance when learning a new skill than product-oriented goals (Kitsantas, Reiser, & Doster, 2004; Schunk & Swartz, 1993; Zimmerman, 2008).

The SRSD model includes goal setting with students prior to learning and using a task strategy. By collaborating with students to set goals for using writing task strategies, teachers can ensure that students understand the purpose of the task strategy, choose a proximal process goal, and identify a standard of behavior that students can compare their writing behavior to as they practice. Teachers are encouraged to conference individually with students prior to the writing process to discuss and choose writing goals.

**Self-monitoring.** A central feature in most definitions of self-regulated learning is the self-oriented feedback loop. This refers to the cyclical process by which students monitor the effectiveness of the learning strategies employed and respond to feedback by changing their behaviors and perceptions (Carver & Scheier, 1981; Zimmerman, 1989). This self-monitoring often influences the types of task and self-regulatory strategies students choose to use (Zimmerman, 2008). Self-monitoring often includes self-recording and self-assessment where a student records and assesses their behavior to determine whether or not, how often, or how long a behavior occurred. Students can then compare their present behavior to their learning goals and evaluate their learning progress (Harris & Graham, 1996).

The SRSD model emphasizes the use of student self-monitoring during the writing process. For example, during persuasive writing instruction, students are encouraged to monitor their behavior by identifying and counting the number of parts that their persuasive essays have and compare their work to the goal of producing essays with all five of the essay parts. After
each writing activity, students identify the parts of their essay, count the parts, graph the data, and observe their progress over the successive weeks. If the student is showing consistent growth on a particular goal, writing achievement should increase until the goal is met and a new goal developed. If the student is struggling with a particular goal or concept, the teacher and the student can work together to choose a more effective strategy or to ensure that the student completely understands the concept (Harris & Graham, 1996; Harris, Graham, Mason, & Friedlander, 2008).

**Self-statements.** Self-regulated learners use self-instruction in the form of self-statements to guide their thoughts and actions. This means that self-regulated learners talk to themselves to aid in the problem solving process. A variety of types of self-statements have been studied from mnemonic rehearsal to self-reinforcing statements. Research has demonstrated that verbalizing thought processes during problem solving activities can improve student performance and reduce hyperactivity (Meichenbaum, 1977; Schunk, 1987; Schunk & Cox, 1986). Self-statements can help students to focus attention, define problems, control impulses, generate ideas, plan, remember and performs steps in procedures, cope with emotion, and reinforce positive behaviors (Harris et al., 2008; Meichenbaum, 1977; Schunk & Cox, 1986).

The SRSD model incorporates the use of self-statements to help students understand writing tasks, use writing strategies effectively, cope with writing anxiety or frustration, and monitor writing behaviors. Using the SRSD model, teachers may teach self-instruction strategies by discussing self-talk with students, modeling self-instruction and self-statements during class, and encouraging students to create and use their own self-statements (Harris et al., 2008).

Use of self-statements can influence student motivation by reinforcing behavior, strengthening attributional beliefs and aiding in coping (Harris et al., 2008; Sawyer, Graham &
Harris, 1992). By discussing the importance of self-statements with their students, modeling the writing process using a talk aloud strategy, and encouraging students to develop their own motivational and procedural self-statements, teachers can explicitly teach students how to regulate their own writing process (Harris et al., 2008).

**Motivation.** Although motivation is not a self-regulatory strategy or process, it is an important aspect of self-regulated learning. Motivated students are more attentive to cognitive processes, more inclined to closely monitor progress, more likely to achieve mastery, and more likely to expend effort on learning tasks than less motivated students (Zimmerman & Schunk, 2008). In fact, motivation and student learning are interdependent processes that cannot be completely understood unless they are examined together (Zimmerman, 1990). In order for students to effectively use self-regulating strategies such as self-statements, self-assessment, and goal setting, they must not only understand these strategies, but they must also possess the motivation to diligently implement them.

There are a number of elements or beliefs that affect student motivation for a particular task; two of these elements are self-efficacy beliefs and causal attributions (Zimmerman & Schunk, 2008). Recent research suggests that teachers can encourage students to hold beliefs and attributions that increase self-efficacy and are self-motivating.

**Self-efficacy.** Students’ willingness to work hard to attain a goal also depends on their beliefs about their own capabilities. Self-efficacy is domain specific and refers a student’s beliefs and judgments about his/her ability to organize and perform the behaviors necessary to accomplish a specific goal within a particular contextual circumstance (Bandura, 1997). Self-efficacy beliefs predict many motivational outcomes for students such as the types of activities they are willing to engage in, the amount of effort they are willing to expend, and the amount of
persistence they are willing to demonstrate (Pajares, 2008). Self-efficacy beliefs have been found to affect all phases of self-regulation including forethought, performance and self-reflection. Students who are self-efficacious use more effective self-regulatory strategies (Schunk & Ertmer, 2000).

Self-efficacy beliefs are developed as a student evaluates information from a number of sources, including previous successful experiences, observation of others’ experiences, and emotional responses. The most influential source is through successful mastery experiences. When students believe that their effort has made them successful at a particular academic task, they are more confident when they approach similar tasks. Experiencing mastery for a task has long-term effects on self-efficacy (Bandura, 1997). To increase students’ beliefs of self-efficacy, teachers should strive to create classroom experiences that emphasize mastery. Additionally, teachers should ensure that successful mastery experiences are not forgotten or minimized (Pajares, 2008).

Another way to influence student self-efficacy is through modeling. Research has shown that observing coping models, where the individual struggles through problems before they reach a successful end, are more likely than mastery models, where it appears that the individual never makes mistakes, to increase student confidence (Schunk, 1987; Schunk & Hanson, 1988). To increase student self-efficacy, teachers should model coping behaviors and identify that making errors is part of learning. Effective models not only instruct but also give explicit details, expose the strategies they have used, and clarify difficult issues.

Self-efficacy is also influenced by the affective domain. Students judge their self-efficacy partly by reflecting on the emotions they experience as they think about a difficult task. Some students experience anxiety and frustration prior to and during the writing process. Teachers can
help students identify feelings such as anxiety and help students to find strategies to deal with these emotions (Pajares, 2008), and in so doing, bolster their perceived self-efficacy.

**Attribution.** Student adoption of self-regulated learning strategies and student persistence can be influenced by attributional beliefs (Zimmerman & Schunk, 2008). Students can attribute the causes of important academic outcomes to internal factors, such as abilities and motivation, or external factors, such as environmental conditions. These attributions are influenced by personal factors, such as self-efficacy beliefs, and environmental factors, such as rewards. If students attribute success or failure to factors over which they have little or no control, such as luck or ease of task, they will believe they cannot control the outcome regardless of how much effort they expend and will be less likely to engage in effortful practice. If students attribute success or failure to factors over which they have control, such as use of effective strategies or effort, they will be more likely to work harder and persist (Schunk, 2008).

Research on the effect of providing students with attributional feedback has shown that feedback can affect student attribution, self-efficacy, and self-regulated learning behaviors (Schunk & Cox, 1986). Additionally, positive relationships between effort attributions for success and self-efficacy have been observed, while negative relationships were noted between self-efficacy and luck attributions (Schunk & Gunn, 1986). Teachers can encourage self-regulated learning by providing attributional and process feedback that focuses on factors that the student can control such as strategy use and effort (Schunk, 2008).

**SRSD Model of Writing Instruction**

Self-regulation is an important aspect of learning that is taken into consideration in the SRSD model of writing instruction. This multifaceted model includes six strategy acquisition stages that are designed to improve student writing by not only explicitly teaching writing task
strategies but also by encouraging the use of self-regulation strategies. The six essential stages of strategy acquisition include: developing background knowledge, discussing the task writing strategies, modeling the strategies, memorizing the strategies, collaboratively practicing, and independently performing the strategies (Harris et al., 2008; Mason et al., 2011). Teachers cover these six stages over the course of their writing lessons. During these lessons, students are taught the background knowledge they need to understand the importance of writing and how to use a specific writing task strategy; additionally they are implicitly engaged in goal setting, self-monitoring, and self-instruction activities to regulate their own learning behavior (Chalk et al., 2005; Graham, Harris, & Troia, 2000).

**Writing task strategies.** The SRSD model requires the teacher to provide explicit writing instruction including the use of particular writing task strategies. The writing task strategies are overt, often including genre specific techniques for generating, planning, composing, and revising. The teacher follows a number of steps to teach a specific type of writing including: explaining the type of writing and the task strategy to be used, using an acronym to help students remember the steps in the strategy, having students memorize the strategy, demonstrating the use of the strategy, scaffolding the students while they use the strategy, providing feedback about student writing and strategy use, and having students use the strategy independently.

Depending on the age of the students and the genre of writing, there are a variety of different writing task strategies that can be taught. One general writing strategy often used in the SRSD model across multiple genres is the POW strategy (Harris et al., 2008). The student Picks an idea, Organizes notes, Writes and says more. The acronym is explained, memorized and used; it helps students to remember what actions they need to take when they begin to write. First they
must choose an idea to write about and brainstorm all of the information they know about the subject. Then they must organize the notes they made about the topic. Next they must write down the ideas that they had about the topic and then write even more about it. This simple acronym can help struggling students to remember what actions they need to take when they start writing.

There are a number of common planning and composing task strategies used for persuasive and narrative writing. For example, two common strategies for persuasive writing include the 5-Part TREE and 8-Part TREE strategies (Harris et al., 2008). Older students use the 8-Part TREE strategy to guide their persuasive writing. First the students develop a Topic sentence that states their opinion on the subject. Next they must provide three Reasons for their opinion and for each reason they need to provide one sentence that Explains each reason more fully. Finally, they have to provide an Ending or concluding sentence. Younger students use the 5-Part TREE strategy that does not need an explanation for each reason but instead requires that students Examine their writing to ensure they have all of the necessary parts (Chalk et al., 2005; De La Paz & Graham, 1997; Mason et al., 2011).

**Self-regulation strategies.** Strategies for self-regulation are intended to help students regulate their own writing behavior and increase motivation. These strategies may or may not be explicitly taught and include student goal setting, self-monitoring, and self-instruction (Graham & Harris 1987; Mason et al., 2011). Across the six SRSD stages, these strategies are less well defined and although they are modeled, they are not necessarily completely explained nor are acronyms used to help students remember the strategies or how to use them. In fact, the depth of self-regulation strategy instruction may vary greatly depending on the needs of the students and the teacher (Harris et al., 2008; Graham & Harris, 1996). The teacher helps students set and
monitor goals as well as develop and use self-statements. In some cases goal setting strategies are explicitly introduced to students in the ‘discuss it’ stage of the instructional model. Later, in the ‘support it’ stage, self-monitoring is incorporated. Self-statements are usually introduced in the ‘discuss it’ and ‘model it’ stages of instruction; students are encouraged to create and use their own self-statements and verbalize their own self-instructions (Graham & Harris, 1989a; Sawyer et al., 1992). Although not always explicitly taught, these self-regulation strategies can help students focus behavior toward learning goals.

**Collaborative practice.** The current SRSD model includes collaborative practice as one of the six essential stages of writing instruction. In this stage, teachers scaffold students in their use the writing task and self-regulation strategies. The teacher interacts with and provides the student with guidance using the strategies, students are allowed to use physical prompts (e.g., charts and graphic organizers) and students are encouraged to collaborate with peers to complete a specific writing task (Graham & Harris, 1987; Graham, Harris, Tria, 2000). The process of peer collaboration is supported by theories of social learning.

Social learning theory suggests that mental sharing and collective thinking can be helpful when students engage in a complex task (Hastie & Pennington, 1991; Salomon, 1993). Having two or more students working together to promote strategy use appears to have a number of advantages. Peer support encourages students to spend more time composing, enhances student knowledge regarding planning and aids students in generalizing their knowledge (Graham, et al., 2005).

**Research Using the Complete SRSD Model**

Several meta-analyses have been conducted that demonstrate that the SRSD model is an effective method of improving student writing across grade levels and genres (Baker, Chard,
Ketterlin-Geller, Apichatabutra, & Doabler, 2009; Graham, Kiuhara, McKeown, & Harris, 2012; Graham & Perin, 2007). A majority of the studies examine the effect of this model on the writing ability of students with learning disabilities or those who were identified as struggling writers. These studies include single-case design research as well as between-group research designs.

**Single-case designs.** A number of research studies using multiple baseline designs across participants have examined the efficacy of the SRSD model for persuasive writing. Grade ranges for these studies include grades 5 to 7 and although the SRSD framework and self-regulating strategy use in these studies seems to be similar, the explicit writing task strategies taught vary. For example, Graham and Harris (1989a) used the POW + TREE writing strategies to examine the effect of SRSD on writing abilities of three grade 6 students. De La Paz and Graham (1997) use the STOP + DARE essay planning strategies to examine the effect of SRSD on the persuasive writing of three grade 5 students. Students are taught to use the mnemonic to write essays by Suspending judgment, Taking a side, Organizing ideas and Planning more as they write. Students are also reminded of the four essay parts and asked to Develop their topic sentence, Add supporting ideas, Reject possible arguments and End with a conclusion. De La Paz (1999) used the PLAN + WRITE strategy to examine the effect of SRSD on the persuasive writing of 22, grade 7 and 8 students. The PLAN + WRITE mnemonic is used to help students remember the steps they need to take when writing a persuasive essay and stands for: Pay attention to the prompt, List the main ideas, Add supporting ideas, Number the major points in order, Work from a plan to develop a thesis, Remember goals, Include transition words, Try to use different kinds of sentences and use Exciting and interesting words. Finally, Mason and her colleagues (2011) completed two studies examining the effect of using the POW + TREE writing strategies to improve the writing fluency of 16 grade 7 students.
Although different writing task strategies were taught across the studies, in each case the post intervention measures showed that students produced higher quality and longer pieces of writing after the SRSD instruction. In addition to observing increases in writing quality and length, two studies (De La Paz & Graham, 1997; Graham & Harris, 1989a) measured the number of functional elements contained in the writing and found that post-intervention the number of these elements increased. One study (De La Paz, 1999) also measured the amount of time students spent planning pre- and post- intervention and determined that student planning time increased after SRSD instruction. Finally, most of the studies (De la Paz, 1999; De La Paz & Graham, 1997; Mason et al., 2011) included maintenance probes anywhere from two to six weeks post intervention and student writing improvements were found to be maintained in each case. This research suggests student persuasive writing improved after SRSD instruction, regardless of the particular task writing strategy used.

Despite the positive findings, these studies (De La Paz & Graham, 1997; De La Paz, 1999; Graham & Harris, 1989a; Mason et al., 2011) have limitations that are important to consider. It is unclear which specific self-regulation strategies were taught and to what extent in each study. For example, Graham and Harris (1989a) had students create and sign contracts indicating their goal and commitment to learning; however, it is difficult to determine if explicit instruction on goal setting was used and whether self-monitoring took place. In this same study, however, explicit instruction on the use of self-statements did take place including modeling self-statements, discussing the importance of using self-statements and student generation of their own self-statements. Conversely, De La Paz (1999) had students complete teacher-student conferences to choose two goals for their writing and, although use of self-statements was modeled, it is unclear if it was discussed or if students created their own self-statements. In this
study it is also difficult to tell if any self-monitoring was completed. Additionally, many of the studies using single-case designs used writing measures that included number of essay or story elements, number of written words, amount of planning time, and quality ratings. None of the studies used a standardized measure of writing such as the Oral and Written Language Scales, Second Edition (OWLS-II; Carrow-Woolfolk, 2011) or the Test of Written Language, Fourth Edition (TOWL-4; Hammill & Larsen, 2009). Instead they used both researcher generated rubrics specific to the study as well as quantitative measures such as of numbers of words written.

**Between-groups designs.** A few studies using experimental or quasi-experimental designs have been recently conducted using comparison groups to examine the effects of SRSD on student writing (Ennis, Jolivette, & Boden, 2013; Graham et al., 2005; Tracy et al., 2009). Two of these studies have been conducted with students in grade 3 and both studies compared the writing performance of an SRSD instructional group with a control group. In one case, a traditional skill-based model of instruction was used with the control group; this type of instruction consisted mostly of teaching basic writing skills such as spelling, grammar, punctuation as well as sentence construction skills (Tracy et al., 2009). In the other case, a Writers’ Workshop model of instruction was used with the control group; this type of instruction consists mostly of students writing about their own lives in authentic ways and being supported with mini lessons about the writing process throughout the instruction (Calkins, 1986; Graves, 1983). The third experimental study (Ennis et al., 2013) examined the effect of SRSD on the writing performance of students with emotional and behavioral disorders in grades three to six. The study compared the writing performance of two SRSD instructional groups with a control group that received traditional writing instruction including essay components and revision.
In these studies the writing performance of students in the SRSD groups post instruction was significantly better than the writing of the control group in regards to length, functional elements, and quality. As in the single-case design studies, although all studies stated that self-regulation was taught in the SRSD groups, it is unclear that strategies or exactly how the strategies were presented and to what extent students in these groups were encouraged to engage in the use of goal setting, self-monitoring or self-statements.

Because all of the studies explained thus far have included the use of both writing task strategies and self-regulation strategies together, and because it is unclear to what extent the self-regulating strategies were implemented in each study, it is difficult to determine which components of the intervention are most important for writing improvement. It is important to determine if self-regulation strategies significantly augment the effectiveness of writing task strategies used. If self-regulation strategies do augment the effectiveness of writing task strategies, then it is also important to identify which of the self-regulating strategies used in the SRSD model are most effective in improving student writing.

**Research Using Component Analysis**

When investigating the effectiveness of a multi-component model, such as SRSD, it is useful to establish the relative effectiveness each individual component of the model. Understanding the active ingredients affecting change within the model allows educators to maximize the effect of an intervention relative to the cost of intervening (Kazdin, 2000). There are a number of components within the SRSD model that may impact student writing. One or all of the self-regulation components may augment the effectiveness of writing strategy instruction. Additionally, the SRSD model also contains motivational components; all or some of these elements may also augment the effectiveness of regular writing strategy instruction. There are a
few studies which have examined the effect of a specific self-regulation or motivational component on student writing skills.

**Self-regulation components.** In the area of SRSD, there has been some research completed in regards to the effectiveness of some of the self-regulation components. Two studies used component analysis to determine precisely which aspects of SRSD were effective in improving student writing. Both of these studies focused primarily on the effects of goal setting and self-monitoring on student writing achievement.

In the first study, Graham and Harris (1989b) examined the effect of writing instruction on the narrative writing of grade 5 and 6 students. The study included two treatment groups comprised of students with learning disabilities and one control group of normally achieving students. The control group did not receive SRSD writing instruction. Both treatment groups were provided with instruction covering the six strategy acquisition stages of SRSD and also received explicit instruction on writing task strategies. One of the treatment groups (SRSD+) received instruction with goal setting and self-monitoring, while the other group (SRSD-) received no instruction on goal setting and self-monitoring. Both groups used self-statements. After the intervention, there was no significant difference between the SRSD groups; both showed improvement in writing structure and writing quality. Additionally, self-efficacy measures for both SRSD groups increased significantly post intervention. Moreover, after SRSD instruction there were no significant differences in writing structure between the treatment groups and the normally achieving control group. Results suggest that explicit instruction on goal setting and self-monitoring may not augment the effectiveness of SRSD instruction.

In the next study Sawyer, Graham, and Harris (1992) utilized three treatment groups and one practice control group of grade 5 and 6 students to examine the components of the SRSD
model. One group of students were provided with special education support but no genre specific writing instruction (practice control condition), the second group received no self-regulation strategy instruction at all (direct instruction), the third group was given SRSD instruction without goal setting and self-monitoring (SRSD) and the final group was provided with complete SRSD instruction which included goal setting, self-monitoring and self-instruction (SRSD+). Results indicated there were no differences between the groups in student self-efficacy; however, students in both of the SRSD instruction groups had significantly higher schematic structure scores than students in the practice control condition. These results indicated that the critical component in the SRSD Model may not be goal setting and self-monitoring but rather the self-instruction component.

None of the component studies directly examined the effect of self-instruction as it was used to some extent in all SRSD conditions. Because the results of the second study (Sawyer et al., 1992) suggest that use of self-statements may be an important component to writing instruction, it is necessary to confirm this suggestion by conducting a study which compares student writing achievement between a condition which contains explicit self-instruction and a condition that does not. Additionally, self-efficacy was measured in both studies. In the first study, SRSD instruction appeared to improve student self-efficacy, but in the second study there was no difference between the self-efficacy levels in the control group. Strict control of the nature of self-instruction and degree of motivational factors used in SRSD may assist researchers in determining if and how self-instruction and motivation influences self-efficacy.

**Motivational components.** Self-regulated learning theory identifies the importance of motivation to student learning (Zimmerman, 1990), and the SRSD model implicitly fosters motivation by embedding components such as self-monitoring and self-statements within the
model (Graham, Harris & Mason, 2006). Self-monitoring allows students to concretely observe their writing improvement and self-statements can help students to talk themselves through difficult or frustrating activities as well as allow students to provide praise to themselves for hard work. However, very few studies isolate the motivational components of SRSD to understand how they affect student writing development.

A number of studies have measured the self-efficacy of students before and after instruction using the SRSD model. Self-efficacy theory suggests that as students become better self-regulated learners, their levels of self-efficacy should increase; however, the effects of SRSD instruction on student self-efficacy for writing have been varied. In some cases student self-efficacy increased post-instruction (Graham & Harris, 1989a, 1989b) and in other cases there were no differences in self-efficacy measures (Graham et al., 2005; Sawyer et al., 1992). These discrepant findings may result from any number of factors, such as differences in the measures of self-efficacy used, the age ranges of the children who participated, the writing interventions used, the length of the intervention period, and in how attentive instructors were to motivational aspects of instruction.

Sexton, Harris and Graham (1998) examined the effect of student attribution on writing instruction within the SRSD model. In a multiple-baseline across subjects design, they examined the writing ability of six students with learning disabilities in grades 5 and 6. Student instruction covered the six strategy acquisition stages of the SRSD model and included explicit instruction on the TREE writing strategy. During the modeling stage, the instructor used a variety of attribution self-statements that demonstrated that success in writing was due to effort in the use of the strategy. Additionally, during error correction and self-assessment, positive attribution statements were made. Students’ attribution beliefs were measured before and after writing.
Results indicated that all students perceived effort to be an important ingredient to writing success or failure. Five out of the six students spent more time planning writing, and all post instruction essays had more important parts, the papers were longer and writing quality improved. Although the design of the study was not conducive to determining if explicit instruction, modeling, and feedback focusing on attributions would enrich SRSD instruction, the study was able to demonstrate that motivational components can be explicitly taught.

**The Current Study**

Explicit instruction in the use of self-statements may improve student learning (Sawyer et al., 1992), and encouraging students to attribute their writing improvement to strategy use could improve motivation (Zimmerman, 1990; Zimmerman & Schunk, 2008). Most studies examining the effectiveness of self-regulation components in the SRSD instructional model have focused on goal setting and self-monitoring (Graham & Harris, 1989b; Graham et al., 2005; Sawyer et al., 1992). Results have suggested that these elements alone may not add value to the effectiveness of SRSD instruction, but that explicit use of self-statements may be important elements for improving student writing ability.

Using a between groups design across six instructional pairs of students, the current study examined the effects of explicitly teaching students how to use self-statements while attributing writing improvement to the implementation of a writing task strategy. Instruction was provided to pairs of students to facilitate collaborative practice, an element of the SRSD model. Three of the student pairs, received explicit instruction on self-statements across all stages of SRSD instruction (SRSD +). Additionally these students were also encouraged to attribute improvements in writing to adherence to the writing strategies they had been learning. The other three pairs, received SRSD strategy instruction (SRSD –) without instruction in the use of self-
statements and without being encouraged to attribute improvement in writing to adherence to the writing task strategy use. Measures of writing ability and self-efficacy for writing were taken before and after writing instruction for all groups. Two research questions were addressed:

1. Does explicit instruction on the use of self-statements and attributing writing improvement to writing strategy adherence augment SRSD instruction? It is hypothesized that explicit instruction using these self-regulating elements will enhance the regular SRSD instruction.

2. Does explicit instruction on the use of self-statements with a focus on attributing writing improvement to writing strategy adherence increase student self-efficacy compared to regular SRSD instruction? It is hypothesized that the focus on motivation will produce increases in student self-efficacy for persuasive writing.
II. Method

Participants

Twelve students from a small, independent, elementary school in Vancouver, British Columbia (BC), participated in the study. This school had an enrolment of less than 200 students from kindergarten to grade 7 with approximately 63 percent of the students identified as English Language Learners (British Columbia Ministry of Education, 2014). According to the 2014 BC Ministry of Education’s Foundational Skills Assessment (FSA) data, 29% of grade 4 students and 7% of grade 7 students in this school were not yet meeting writing expectations for their grade.

Teachers of grades 5, 6 and 7 were asked to nominate students from each of their classes who struggled with paragraph writing. Consent forms were sent home to the parents of these students that explained the purpose and process of the study. Out of the 16 consent forms sent home to parents, one was not returned. Of the fifteen that were returned, three withheld parental consent and twelve provided parental consent. Ultimately, parental consent to participate in the study was received for four students in each grade level. All students participating in the study spoke English at school; furthermore, all students identified that an additional language was spoken in their home. These languages included: Filipino (41.67% of the participants), Vietnamese (41.67% of the participants), Polish (8.33% of the participants), and Cantonese (8.33% of the participants). Student demographics and selected screening results are presented in
### Table 1.
**Student demographics & screening results**

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Grade</th>
<th>Age</th>
<th>Gender</th>
<th>Verbal Knowledge KBIT-2 (SS)</th>
<th>Matrices KBIT-2 (SS)</th>
<th>Writing Samples WJ-III ACH (SS)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>12</td>
<td>F</td>
<td>85</td>
<td>93</td>
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<tr>
<td>4</td>
<td>7</td>
<td>12</td>
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<td>95</td>
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<td>5</td>
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<td>11</td>
<td>M</td>
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<td>6</td>
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<td>M</td>
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<td>11</td>
<td>M</td>
<td>90</td>
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<td>104</td>
</tr>
<tr>
<td>Mean</td>
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<td>92.08</td>
<td>91.33</td>
<td>104.17</td>
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<td>1.09</td>
<td></td>
<td>9.16</td>
<td>10.42</td>
<td>9.08</td>
</tr>
</tbody>
</table>


The inclusion criteria required that participant scores on standardized tests of sentence writing skill and cognitive ability fall within one and a half standard deviations of the mean for the student’s age group. Students with scores below this range for sentence writing ability may be unable to write a grammatically correct sentence, and would likely require intervention at the sentence level rather than the paragraph level instruction provided by this study. Similarly, students with low scores on the cognitive abilities subtest may be less able to think metacognitively about their writing process, in which case instruction in self-talk and self-regulating strategies may be less effective (Bryce & Whitebread, 2012; Veenman, Wilhelm, & Beishuizen, 2004).

**Measures**

**Screening measures.** Three screening measures were used to ensure that the selected students met the inclusion criteria for the study and had the cognitive and sentence writing ability needed to benefit from the interventions used within the study. These measures included the

Sentence writing. To ensure the participants in the study possessed adequate sentence writing skills to benefit from the study, the Writing Samples Test from the WJ-III ACH was administered. The WJ-III ACH is a standardized, norm-referenced battery of achievement tests designed for individuals ages 2 – 90+ years of age. The Writing Samples Test of the WJ-III ACH demonstrates acceptable reliability (internal consistency > 0.69). Convergent validity is also acceptable as the correlation between the Writing Skills Test of the WJ-III ACH and the Writing Composite of the Wechsler Individual Achievement test is 0.69 (Woodcock et al., 2007).

The Writing Samples test is a measure of written expression at the single sentence level. The first set of items on this test requires students to complete sentences, the second set of items requires students to write a sentence that complies with teacher directions, and the third set of items requires more complex sentence construction. Because of their age and ability levels, all students in this study completed part of the second and third sets of items.

Cognitive functioning. To ensure that participants in the study possessed adequate cognitive development to support the writing process, the Verbal Knowledge and the Matrices subtests of the KBIT-2 were administered. The KBIT-2 is a brief standardized, norm-referenced measure of cognitive ability that examines both verbal and nonverbal abilities. It is designed to test individuals from 4 to 90. According to Madle (2007), the composite score of the KBIT-2 demonstrates good internal consistency with a coefficient of > 0.92 across ages. It also shows adequate validity with average correlations of 0.77 with the Wechsler Intelligence Scale for
Children, Fifth Edition (WISC-IV). The Verbal Knowledge subtest requires the students to point to one picture from a group of six pictures that best represents a word or phrase the examiner says. The Matrices subtest presents the students with an abstract design that follows a pattern but with one missing element. Below the pattern are a number of individual design elements. The examiner asks the student to point to the picture that would complete the pattern.

**Outcome measures.** Persuasive writing ability was measured using scores obtained from written expression curriculum-based measures (WE-CBM; Hosp, Hosp, & Howell, 2007), scores obtained from a writing rubric based on the British Columbia Provincial Performance Standards for Writing (British Columbia Ministry of Education, 2009), and scores derived from the number of persuasive elements present in the writing samples (Graham et al., 2005). Expository writing ability was measured using student scores on an item from, the Oral and Written Language Scales, Second Edition (OWLS-II; Carrow-Woolfolk, 2011). Finally, writing self-efficacy was measured using scores from an adaptation of the Self-Efficacy for Writing Scale (SEWS) for Middle School Students (Bruining, Dempsey, Kaufman, McKim, & Zumbrunn, 2013). A copy of the rubric based on the B.C. Performance Standards and the adapted SEWS measure can be found in Appendix A and B respectively.

**Persuasive writing measures.** Student persuasive writing skill was measured for process as well as product quality. The process of persuasive writing was measured by counting the number of basic elements present in the writing sample. The quality of the persuasive writing samples was measured quantitatively using WE-CBM and holistically using the British Columbia Performance Standards for Writing (BCPS-W).

**Basic writing elements.** To measure the basic writing elements present in student writing, writing samples were scored by counting the number of TREE elements used in the writing. A
score of 1 was given for each element that was present. For example, if a topic sentence expressing the student’s opinion and an ending sentence summarizing this opinion were present, but only two unique reasons were given to support the opinion, the sample would receive a score of 4. A student could receive a maximum score of 5 if all of the elements (topic sentence, reason one, reason two, reason three, and ending sentence) were present.

*Curriculum-based measures.* Curriculum-based measures (CBM) are standardized measures that are brief and repeatable (Hosp, Hosp, & Howell, 2007). Three Written Expression CMB (WE-CBM) scoring methods were used to evaluate the student writing samples: Total Words Written (TWW), Correct Writing Sequences (CWS) and Percent Correct Writing Sequences (PCWS). TWW and CWS were used because they are production-dependent measures that correlate strongly to both standardized writing measures and teacher qualitative measures of writing (Jewell & Malecki, 2005; Malecki, 2008). PCWS, a production-independent measure was also used. Research suggests that, in middle school, production-independent measures are more strongly related to standardized achievement scores and classroom grades than production-dependent measures because they take into account spelling, grammar and sentence structure which become more important as students enter higher grades (Amato & Watkins, 2009; Jewell & Malecki, 2005).

To score the TWW, the evaluators counted the total number of legible words written and recorded the score. A word was considered any letter or group of letters, including misspelled words that had a space before and after them. To score the CWS, the evaluators counted and recorded the number of adjacent word sequences that used correct spelling, syntax, semantics, punctuation and capitalization. Evaluators also counted the number of incorrect word sequences (IWS), the number of adjacent word sequences that had incorrect spelling, syntax, semantics,
punctuation or capitalization (Research Institute of Progress Monitoring, 2003). To calculate the PCWS, the CWS and IWS were added to obtain the total word sequences (TWS), then the CWS score was divided by the TWS and multiplied by 100; this provided a measure of accuracy (Jewell & Malecki, 2005).

*British Columbia Performance Standards for Writing.* Persuasive writing samples were assessed analytically for writing quality using the BCPS-W Quick Scale Rubric for personal writing for the 6th grade. The BCPS-W rubric for personal writing was chosen as an ecologically valid measure of writing because it is a criterion-referenced assessment tool created for and used in BC schools. It provides a qualitative measure of student writing across four areas including: ideas and meaning, clarity and style, form and organization, and mechanics and conventions. The BCPS-W were created to allow teachers to compare student personal writing performance to provincial standards and it was developed with input from teachers across the province of BC based on what they perceived to be standard writing characteristics for students within and across (developmental) grades (British Columbia Ministry of Education, 2009).

The BCPS-W rubric allows the measurement of personal writing across four aspects of personal writing. Each aspect is divided into four categories including: *not yet within expectations, minimally meets expectations, fully meets expectations,* and *exceeds expectations.* Under each category is a list of qualities that describe the characteristics of personal writing that falls into each category. For example, for the aspect of conventions, the characteristics of a writing sample that would fall into the *not yet within expectations* category includes the writing sample containing frequent errors in spelling, punctuation, sentence structure and grammar such that the errors interfered with the meaning of the writing. A writing sample that would fall into the *fully meets expectations* category for this same aspect would have few errors in spelling,
punctuation, sentence structure and grammar and these errors would not interfere with the meaning of the writing.

To quantify the descriptors in the BCBP-W rubric for the current study, a value was given for each category of writing ability: *not yet within expectations* = 1, *minimally meets expectations* = 2, *fully meets expectations* = 3, and *exceeds expectations* = 4. Each of the four aspects of the writing, meaning, style, organization, and conventions, was scored using these values. The maximum score that a student writing sample could achieve was 16, meaning the sample exceeded what would be expected for a personal writing sample across all four areas. The minimum score a sample could receive was 4 meaning it minimally met expectations across all aspects of personal writing.

**Writing Duration.** Research suggests that students spend more time planning and composing their sample after receiving SRSD instruction (De La Paz & Graham, 1997; Graham et al., 2005). Therefore, in the current study, the persuasive writing process was measured for writing duration, how much time students spent planning and composing their writing sample. This was measured using a stopwatch. Immediately after the students had viewed the writing probe and heard it read out loud, they were instructed to begin writing. Timing was started as soon as students were told to begin writing and timing stopped when the students handed in the completed writing sample.

**Expository writing measure.** Student expository writing skill was also measured because persuasive writing, which involves explaining an opinion about something, and expository writing, which involves providing information about something, are similar in structure. The expository measure was used to determine if the writing skills taught during the persuasive writing intervention (developing a topic sentence, providing reasons or steps, and creating an
ending sentence) could be generalized to a similar writing form. One subtest from the OWLS-II was used to as an expository writing measure. This subtest was chosen because it required students to write a paragraph describing how to do a simple task. Because expository writing was not a focus of this study, the expository measures were only taken before and after the intervention.

The OWLS-II was well suited for both the purpose and the repeated measures design of the study. The OWLS-II is one of the few standardized tests with two forms (A and B) that measures paragraph-level, expository writing. Additionally, the OWLS-II is a norm-referenced, individually administered test of oral and written language for children and adolescents. The Written Expression Scale is designed to measure the written communication skills of students between the ages of 5 to 21 years of age. Both Form A and B of the Written Expression Scale of the OWLS II show good reliability for individuals ages 8 – 13 (internal consistency > 0.93). Validity of the original OWLS Language Composite was good with a correlation to other standardized writing measures (average r > 0.77).

**Writing self-efficacy measure.** The Self-Efficacy for Writing Scale (SEWS) for Middle School Students (Bruining et al., 2013) was a self-report measure administered before and after the intervention. The measure contains 16 items measuring three factors of student self-efficacy: ideation, student ability to generate ideas; conventions, student ability to use correct capitalization, punctuation and grammar; and self-regulation, student ability to regulate the writing process. Factor analysis indicated a good fit for a three factor model (Bruining et al, 2013). Reliability within each of the three factors was good (internal consistency > 0.84) and the correlation between the three factors was moderate to strong (ideation and self-regulation $r > 0.72$; conventions and self-regulation $r > 0.46$; conventions and ideation $r > 0.52$). Additionally,
SEWS showed moderate positive correlations to other self-report measures such as self-reported writing performance and the Liking Writing Scale (LWS).

Sample items in the self-report measure include: “I can think of many ideas for my writing; I can spell my words correctly; I can avoid distractions while I write.” Students were asked to provide a rating from 0-100 of how confident they were that they could do each writing-related task (0 = Cannot do at all; 100 = Highly certain can do). Bandura (2006) recommended the use of this response format because it provides greater discrimination and allows for an increased level of prediction (Pajares, Hartley, & Valiante, 2001).

Materials

Writing prompts. The writing prompts used in the study were written questions or statements that provided students with a writing topic. Expository writing prompts are statements or questions that direct students to create a writing sample explaining how or why something is done. An example of an expository writing prompt is: “Explain how to make a peanut butter sandwich.” Persuasive writing prompts are statements or questions that require students to create a writing sample that would convince their audience to agree with their position on an issue. An example of a persuasive writing prompt is: “Should students be allowed to eat snacks in the classroom?” All writing prompts were presented visually as a sentence or question written on a piece of paper and orally with the interventionist reading the question out loud to the students.

Prior to the beginning of the study, 12 persuasive writing prompts were adapted from a set of previously published prompts (Harris et al., 2008). Initially, 12 writing prompts were generated and vetted by the classroom teachers who nominated the students. Teachers evaluated the prompts on level of difficulty, appropriateness of material, and likelihood to be of interest to their students. All of the suggested prompts were deemed acceptable so six of the prompts were
randomly selected to be used in the study. The order of the administration of the prompts across student groups was randomly assigned.

**Mnemonic chart, graphic organizers, and persuasive essay graphs.** All handouts including charts, organizers and graphs used in the intervention were adapted from lesson plans in *Powerful Writing Strategies for all Students* (Harris et al., 2008). A laminated poster that showed a pictorial representation of POW + TREE was also used as a visual representation that the interventionist could refer to during the instruction of the POW+TREE intervention, but was not visible to students during the composition of writing samples. A white board was also used to aid in instruction by displaying daily objectives, word definitions, and instructional information. Students also used the white board when asked to write out and explain POW+TREE to their partner.

**Procedure**

**Recruitment and screening.** The principal of a small private school was provided with information about the study and asked to consult with teachers in grades 5, 6 and 7 as to whether they could identify students that would be good candidates for the study. All teachers were able to identify four students in their class that they believed would meet the inclusion criteria and would benefit from the proposed writing intervention. Teachers were provided with consent forms to be given to the selected students to take home to their parents. After informed consent and student assent was obtained, the students underwent a brief cognitive and academic assessment to provide background information about their writing skills and to ensure their skills met the inclusion criteria.

**General procedures.** Four students from each of the grade 5, 6 and 7 classes were selected for the study and parental consent was received. Because the mean age of the
participants was 11.50 years, written assent was also obtained from the participants before the
students were then screened to determine if they met the inclusion criteria for the study. All
students met the eligibility criteria and were randomly assigned into a within-grade pair, and
each pair was randomly assigned into a SRSD- or SRSD+ condition. Prior to the intervention all
students completed the OWLS-II (expository writing measure), the SEWS (self-efficacy for
writing measure) and a persuasive writing sample based on one of the persuasive writing probes
generated prior to the study.

After the initial measures were taken, the pairs received approximately 30 minutes of
writing instruction, two times a week for approximately 5 weeks. A graduate student majoring in
school psychology who was also a teacher and the primary investigator for this study served as
the interventionist. All students received writing instruction from the same interventionist. A
notebook with step-by-step description of the 11 lesson plans and instructional procedures was
designed utilizing the lesson plans for persuasive writing provided in Powerful Writing
Strategies for All Students (Harris et al., 2008).

Once a week, prior to the lesson on writing instruction, persuasive writing probes were
administered to the students. On days that students were assigned to complete a writing probe
activity in class, the interventionist provided each student with two pieces of lined paper as well
as a second paper with the persuasive writing probe typed on the top. Students were instructed
to: “Look carefully at the sentence on this card and make up a good paragraph to go with it.” The
interventionist then read the probe to the students. The interventionist did not assist students in
the writing activity, nor did the students have access to any of the practice sheets, the
POW+TREE poster, or notebooks. Students were told they had 15 minutes to complete the
writing sample, but in fact this time limit was not absolute nor was it enforced. For example
during the last writing sample three of the grade 7 students exceeded the 15 minutes. The interventionist recorded the time that each student took to write their writing sample from the time the students were told to begin writing until the students handed in their finished work.

Immediately after the last intervention session, a final persuasive writing probe was administered as well as the second measure of writing self-efficacy (SEWS). Lastly, the second standardized measure of written expression (OWLS-II) was administered.

**Instructional procedures.** All student pairs in both conditions received persuasive writing instruction that included 6 SRSD stages of strategy acquisition including: developing background knowledge, discussing the strategies, modeling the strategies, memorizing the strategies, collaboratively practicing, and independently performing the strategies (Harris et al., 2008; Mason et al., 2011). These strategy acquisition stages were spread across 11 half-hour lessons. Lesson plans were adapted from the five lesson plans Harris published with colleagues (Harris et al., 2008). Table 2 summarizes the key differences across instructional conditions.

The SRSD + group was encouraged to attribute improvements in writing ability to adherence to the writing strategy they were being taught (e.g., “If you use POW+TREE, your writing will get better”). Additionally, this group received feedback on process (e.g., “You have worked hard to make sure you included all of the TREE parts in your paragraph). When you do this your paragraph has good organization. Good job.” The SRSD- group was not explicitly encouraged to attribute improvements in writing directly to the adherence to the writing strategy instruction. This group received product feedback and praise (e.g., “This is a well-organized paragraph, good work.”). Sample lesson plans can be seen in Appendix B.
Table 2.

*Differences between Instructional Conditions*

<table>
<thead>
<tr>
<th>Stage of SRSD</th>
<th>SRSD +</th>
<th>SRSD -</th>
</tr>
</thead>
</table>
| Background Knowledge: | • Self-statements were explicitly explained and encouraged  
  • Self-statement handout provided | • Self-statements were not explained nor encouraged  
  • Self-statement handout was not provided |
| Discussing the Strategy: | • Discussed the self-statements students used to help them remember POW+TREE | • Self-statements were not discussed |
| Modeling: | • Think aloud modeling strategy was demonstrated  
  • Interventionist modeled self-statement use (including self-statements used to aid student memory, coping and behavior reinforcement)  
  • Students identified self-statements used by interventionist  
  • Students created and used their own self-statements | • A descriptive modeling strategy was demonstrated  
  • Self-statements were not modeled  
  • Self-statements were not identified or created |
| Collaborative Practice: | • Students used the self-statements they created during practice | • Students practiced without using self-statements |

*Developing background knowledge.* Both the SRSD - and SRSD + groups were explicitly taught the purpose of a persuasive paragraph and the parts of the POW-TREE strategy.

Students used the TREE a graphic organizer to identifying the parts in sample paragraphs. All students were asked to describe what topic sentences, reasons, opinions and concluding sentences are. All students received the transition word list and the mnemonic chart. All students were asked to explain what a transition word is. Students were encouraged to use synonyms.

Only students in SRSD+ were told that writing is a skill that can be learned and success can be attributed to effective use of strategy as well as practice. This group was also told that even expert writers find writing difficult and frustrating at times use strategies such as self-talk to help them write. Only the SRSD+ group received the self-statement handout to prompt students to
think about and write down the self-statements they found useful. This handout was taken from lesson plans published by Harris and colleagues (2008).

*Discussing the Strategies.* Both groups of students discussed and explained the POW-TREE strategies. All students discussed the elements of a good topic sentence, a good reason, and a good conclusion. Both groups read samples of well written paragraphs as well as poorly written paragraphs; all students discussed and identified what elements went into a good paragraph. Both groups discussed how to improve their writing and identify aspects of their own writing that is good and aspects that they need to improve. All students charted their progress and established goals. Only the SRSD+ group discussed the self-statements they could use when they write. Only the SRSD+ group wrote down the self-statements they like to use.

*Modeling.* In both conditions, the interventionist modeled the POW+TREE strategy using the same writing prompt. For students in the SRSD+ condition, prior to the modeling, the interventionist asked students to listen for and note some of the self-statements they heard for discussion after the demonstration. During the modeling process the interventionist used the talk-aloud protocol and explicitly stated what she was thinking while she wrote. She made self-statements about process, attribution, and emotions. She made errors and corrected them. After the demonstrations the interventionist discussed the importance of self-statements and had students discuss the self-statements she used. Students shared some of their own self-statements.

For students in the SRSD- condition, prior to modeling, the interventionist asked the students to listen for all of the parts of POW-TREE. During modeling a talk-aloud protocol was not used, instead the interventionist simply described the steps as she wrote the paragraph. The interventionist did not make, nor did she demonstrate self-statements. After the demonstration SRSD- students discussed the parts of TREE and the paragraph that the interventionist wrote.
Memorizing. All students memorized POW-TREE and each was able to explain it.

Collaborative Practice. During collaborative practice, the interventionist worked with and provided scaffolding to all students. Additionally, students were instructed in pairs to facilitate peer support and practice. Each student in the pair took turns explaining POW + TREE to the group (i.e. their partner and the interventionist), explaining what an opinion was to the group, discussing the writing probe for the day and their opinion on the topic with the group, and brainstorming ideas together. The interventionist ensured that each student in the pair had an opportunity to express their ideas and present their writing in a supportive environment. All student pairs read each other’s work and were required on one occasion to provide a written note identifying one thing their partner did well one thing that confused them about their partner’s writing. All students appeared to enjoy this part of instruction and all students participated. Only the SRSD+ students generated self-statements and shared them with each other. The SRSD+ pairs used their self-statement sheets when completing collaborative practice and when evaluating their partners’ work.

Independent Performance. All students were asked to create their own graphic organizer and make their own notes on a blank paper before they begin to write. Students wrote independently without the assistance of the interventionist or their partner.

Feedback. There were some differences between the two groups in the feedback they received on their writing performance. Students in the SRSD+ group were given process praise, such as, “You have been working hard to include all of your TREE parts in your writing and you are improving, well done!” When the interventionist provided written feedback, process rather than product was emphasized. Students in the SRSD– group received product praise such as
“Your writing is improving. This is a good paragraph that is well organized!” When the interventionist provided written feedback, product rather than process was emphasized.

**Fidelity of Implementation**

To ensure that the intervention was completed with fidelity, a fidelity checklist including the important aspects of each lesson was created for each condition prior to the study. During implementation, the interventionist wrote the important steps on the white board prior to class. At the beginning of each class the interventionist identified the steps to the students. Throughout the lesson, the interventionist checked off steps in the notebook as they were completed. The self-report checklists were used to calculate the fidelity for each group across all intervention sessions; average self-report fidelity for the SRSD+ and SRSD- group was 99% and 98% respectively.

Each lesson was audio-recorded and the recordings were provided to a graduate student who completed the fidelity checks. This graduate student was not involved with the study prior to completing the fidelity checks. Recordings for 33% of the intervention sessions were reviewed and checked for fidelity. The graduate student identified each step of implementation that was covered in a lesson by checking off that step on the fidelity checklist. The total number of steps actually completed along with the total number that should have been completed were recorded for each session that was evaluated. Treatment fidelity was calculated for both conditions independently by dividing the mean number of steps implemented by the mean total number of steps present and multiplying by one hundred. Fidelity to the intervention for the SRSD+ and SRSD- groups was 100% and 98% respectively.
Inter-scorer Agreement

Two graduate students independently scored all writing samples. The primary rater was not involved with the intervention and was blind to the experimental conditions from which the samples were taken. Only scores from the primary rater were used in the data analysis. The interventionist acted as the secondary rater. Scores from the secondary rater were only used to calculate inter-scorer agreement.

Two graduate students independently scored the persuasive writing samples using a variety of measures including: WE-CBM (TWW, CWS, & PCWS), measures of persuasive writing elements, and quality measures derived from the BC Performance Standards. They also scored the standardized expository measure. To determine the absolute agreement between these continuous measures, the concordance correlation coefficient (CCC) was used (Table 3). All scores for continuous measures showed good inter-rater reliability ($R_c > 0.85$).

<table>
<thead>
<tr>
<th>Measure</th>
<th>Rater 1 Mean (SD)</th>
<th>Rater 2 Mean (SD)</th>
<th>$R_c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWW</td>
<td>81.31 (1014.41)</td>
<td>81.19 (1000.16)</td>
<td>0.99</td>
</tr>
<tr>
<td>CWS</td>
<td>68.98 (783.85)</td>
<td>69.78 (784.99)</td>
<td>0.99</td>
</tr>
<tr>
<td>ICWS</td>
<td>17.40 (271.12)</td>
<td>15.88 (256.76)</td>
<td>0.98</td>
</tr>
<tr>
<td>BCPS-W</td>
<td>8.35 (4.17)</td>
<td>8.17 (5.4)</td>
<td>0.86</td>
</tr>
<tr>
<td>OWLS-II</td>
<td>9.16 (2.23)</td>
<td>9.00 (3.04)</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Table 3. Concordance for Continuous Measures using Lin’s Concordance Coefficient

Note. SEWS = TWW = Total Words Written; CWS = Correct Writing Sequences; PCWS = Percent Correct Writing Sequences; BCPS-W = British Columbia Performance Standards in Writing; OWLS II = Oral and Written Language Scales, Second Edition.

The same two graduate students rated the paragraphs in regards to the number of basic writing elements present. Because this measure had too few categories to be considered a continuous variable, analysis was completed using Cohen’s Weighted Kappa ($w_i$), a measure of the degree of agreement between two raters when examining categorical data. Initially, $w_i = 0.74$, ...
so the raters discussed criteria and re-evaluated the samples they had disagreed on until consensus was reached. The final inter-rater reliability was $w_i = 0.95$.

**Data Analysis**

To examine the effect of explicitly teaching self-statements while encouraging students to attribute writing improvement to adherence to the newly learned writing strategy, the current study employed a randomized cluster design with the analysis accounting for the non-independence of student pairs. Differences in change between the writing ability of student pairs receiving explicit instruction on the use of self-statements and student pairs not receiving this type of instruction were examined. Because of the multilevel nature of the study, differences in change were examined using mixed effects, repeated measures ANOVA with a random intercept at the student and pair level for each of the writing and self-efficacy measures. This type of analysis takes into consideration that students are not being taught independently but in pairs.

The analyses were conducted using SPSS version 22. Three different analyses were used to determine differences in student writing and self-efficacy between groups and over time including:

1. Analysis of pre-post intervention scores for the OWLS-II and the SEWS measures;
2. Analysis of continuous measures sampled weekly for TWW, CWS, PCWS, BCPS-W and Duration;
3. Analysis of the ordinal Basic Persuasive Elements weekly measures.

Linear mixed models were used for the first two groups of analyses and a generalized linear mixed model with a cumulative logit link function was used to account for the ordinal elements measure in the third analysis.
To analyze the pre-post intervention scores, a random-effects model was estimated using the SPSS MIXED procedure to compare student scores for the OWLS-II and SEWS measures before and after the interventions. This model nested pre- and post-test measures within students and students within instructional pairs. It included the effect of Time (coded 0 for pre-test and 1 for post-test), the effect of instructional Group (coded 0 for SRSD- and 1 for SRSD+) , and the Time-by-Group interaction. The Time-by-Group interaction represented the differences in change between the scores in the two instructional groups.

The analysis of weekly measures was also completed using a random-effects model to compare the weekly student scores for TWW, CWS, PCWS, BCPS-W and Duration across the five weeks of the intervention. Again, weekly measures were nested within students and students within instructional pairs. It included the effect of Time (Coded 0 for pre-test, 1 for the measures taken after week one, 2 for measures taken after week two, and so on with 5 coding for the post test measure taken after week five), the effect of instructional Group (coded 0 for SRSD- and 1 for SRSD+) , and the Time-by-Group interaction.

Because the sample size of the study was small, limiting statistical power, effect sizes were also calculated as indicators of intervention effectiveness for each of the pre-post and weekly measures. Hedges’ g was used to calculate the effect sizes because it provides a better estimate of effect size when sample sizes are small. The numerator used in the equation was the model-estimated difference between groups at posttest (for the pre-post measures, this was the estimate for the Time-by-Group term; for the weekly measures, this was the Time-by-Group term multiplied by five because it was measured each of the five weeks). The denominator used in the equation was the pooled standard deviation of the post-test measures. Effect sizes > 0.20
were considered small in magnitude, > 0.50 were considered medium, and those > 0.80 were considered large (Cohen, 1988; What Works Clearinghouse, 2011).

Analysis of the ordinal measure, scores for basic elements, required the use of a generalized linear mixed model. Therefore, data for basic elements were analyzed using the SPSS GENLINMIXED function with a cumulative logit link for multinomial distributions. The response variable represented the extent to which the basic writing elements were present in the writing sample. Within this model, weekly measures were nested within students and students within instructional pairs. The model included the effect of Time (Coded 0 for pre-test, 1 for the measures taken after week one, 2 for measures taken after week two, and so on with 5 coding for the post test measure taken after week five), the effect of instructional Group (coded 0 for SRSD- and 1 for SRSD+) , and the Time-by-Group interaction.
III. Results

Baseline Equivalency

The SRSD+ and SRSD- groups were compared regarding the screening measures collected at pre-test. After students were randomly placed to groups, pre-test scores were calculated for the three screening measures: Writing Samples Test from the WJ-III ACH, Verbal Knowledge of the KBIT-2 and the Matrices of the KBIT-2. The mean and standard deviations were calculated for each group and groups were compared using independent samples t-tests which indicated that the groups were not statistically different in sentence writing or cognitive ability prior to the intervention. Effect sizes indicated that there was no difference between the groups in regards to scores on Writing Samples test; however there were large differences between groups in scores for the Verbal Knowledge and Matrices sub-tests of the KBIT (Table 4). This suggests that although there was no difference between the two groups in ability to write sentences, there were large differences in cognitive ability with the SRSD- group having better verbal knowledge and the SRSD+ group having better non-verbal reasoning. Additionally, this suggests that the groups were likely not equivalent at baseline for verbal and non-verbal reasoning abilities.

Table 4. Pre-Intervention Screening Data by Condition

<table>
<thead>
<tr>
<th>Measure</th>
<th>SRSD+ Mean (SD)</th>
<th>SRSD- Mean (SD)</th>
<th>t_{(10)} Value (SE)</th>
<th>p Value</th>
<th>Effect Size d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Samples</td>
<td>104.33 (11.29)</td>
<td>104.00 (7.35)</td>
<td>0.061 (5.50)</td>
<td>0.95</td>
<td>0.03</td>
</tr>
<tr>
<td>Verbal Knowledge</td>
<td>88.33 (6.05)</td>
<td>95.83 (10.64)</td>
<td>1.50 (5.10)</td>
<td>0.17</td>
<td>-0.87</td>
</tr>
<tr>
<td>Matrices</td>
<td>95.50 (7.66)</td>
<td>87.17 (11.77)</td>
<td>1.45 (5.73)</td>
<td>0.18</td>
<td>0.84</td>
</tr>
</tbody>
</table>
Intervention Effects

Three sets of analyses were completed on the data to account for differences in assessment schedules across measures and type of data collected. Separate analyses were completed on the pre-post, weekly and ordinal measures. A linear mixed model was used to analyze the pre-post and weekly measures and a generalized linear mixed model with a cumulative logit link was used for the ordinal measures. Table 5 provides descriptive statistics for each of the measures and demonstrates that scores for all measures in both treatments groups increased over time. Tables 6 through 8 provide results for the statistical analysis of the effects of the intervention. Because the sample size was small, the magnitudes of the effect sizes were relied upon more than statistical significance in determining if effects were present. Additionally, the group means were graphed as an indicator of the practical significance of the effect.

Table 5.
Means and Standard Deviations by Week, Group and Measure

<table>
<thead>
<tr>
<th>Group</th>
<th>Time 0 M (SD)</th>
<th>Time 1 M (SD)</th>
<th>Time 2 M (SD)</th>
<th>Time 3 M (SD)</th>
<th>Time 4 M (SD)</th>
<th>Time 5 M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OWLS II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRSD+</td>
<td>8.83(1.47)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9.67(1.37)</td>
</tr>
<tr>
<td>SRSD-</td>
<td>8.67(1.75)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9.50(1.52)</td>
</tr>
<tr>
<td>SEWS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRSD+</td>
<td>1063.83</td>
<td>205.50</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1355.17</td>
</tr>
<tr>
<td>SRSD-</td>
<td>884.00</td>
<td>302.21</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1285.67</td>
</tr>
<tr>
<td>TWW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRSD+</td>
<td>83.17(46.96)</td>
<td>79.83(30.87)</td>
<td>75.00(29.83)</td>
<td>76.83(20.54)</td>
<td>86.87(26.84)</td>
<td>88.50(25.97)</td>
</tr>
<tr>
<td>SRSD-</td>
<td>84.33(59.46)</td>
<td>84.67(47.00)</td>
<td>70.67(20.18)</td>
<td>66.33(19.31)</td>
<td>85.17(10.23)</td>
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<td>CWS</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SRSD+</td>
<td>68.00(39.00)</td>
<td>68.50(32.40)</td>
<td>69.50(29.83)</td>
<td>69.83(16.56)</td>
<td>77.83(28.17)</td>
<td>83.83(25.93)</td>
</tr>
<tr>
<td>SRSD-</td>
<td>55.00(33.42)</td>
<td>63.33(33.00)</td>
<td>62.67(25.48)</td>
<td>55.33(17.32)</td>
<td>67.00(10.71)</td>
<td>87.00(36.88)</td>
</tr>
<tr>
<td>PCWS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRSD+</td>
<td>76.55(46.66)</td>
<td>77.44(16.53)</td>
<td>85.99(9.56)</td>
<td>86.01(8.13)</td>
<td>81.46(11.18)</td>
<td>90.56(3.74)</td>
</tr>
<tr>
<td>SRSD-</td>
<td>66.25(19.75)</td>
<td>75.20(21.13)</td>
<td>82.28(14.61)</td>
<td>79.98(14.91)</td>
<td>74.36(4.95)</td>
<td>86.52(11.48)</td>
</tr>
<tr>
<td>BCPS-W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRSD+</td>
<td>6.67(1.21)</td>
<td>7.67(2.58)</td>
<td>8.83(1.47)</td>
<td>9.00(0.89)</td>
<td>9.33(1.51)</td>
<td>10.67(1.51)</td>
</tr>
<tr>
<td>SRSD-</td>
<td>5.83(1.60)</td>
<td>6.00(1.26)</td>
<td>8.83(1.60)</td>
<td>8.33(1.37)</td>
<td>8.83(0.98)</td>
<td>9.83(1.72)</td>
</tr>
<tr>
<td>Duration</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SRSD+</td>
<td>513.67</td>
<td>490.00</td>
<td>528.33</td>
<td>719.17</td>
<td>613.17</td>
<td>766.33</td>
</tr>
<tr>
<td></td>
<td>(97.48)</td>
<td>(196.56)</td>
<td>(140.80)</td>
<td>(176.14)</td>
<td>(154.33)</td>
<td>(233.85)</td>
</tr>
<tr>
<td>SRSD-</td>
<td>405.67</td>
<td>499.50</td>
<td>385.50</td>
<td>575.00</td>
<td>706.50</td>
<td>794.17</td>
</tr>
<tr>
<td></td>
<td>(119.73)</td>
<td>(246.19)</td>
<td>(113.67)</td>
<td>(187.75)</td>
<td>(134.15)</td>
<td>(354.40)</td>
</tr>
<tr>
<td>Elements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRSD+</td>
<td>3.00(0.89)</td>
<td>4.00(0.89)</td>
<td>4.83(0.41)</td>
<td>4.83(0.41)</td>
<td>4.83(0.41)</td>
<td>5.00(0.00)</td>
</tr>
<tr>
<td>SRSD-</td>
<td>2.00(1.26)</td>
<td>3.33(0.82)</td>
<td>4.67(0.52)</td>
<td>4.17(1.17)</td>
<td>4.83(0.41)</td>
<td>4.83(0.41)</td>
</tr>
</tbody>
</table>

Note. For each group n = 6. Time 0 = pre-intervention measure; Time 5 = post-intervention measure; OWLS II = Oral and Written Language Scales, Second Edition; SEWS = Self-efficacy for Writing Scale; TWW = Total Words Written; CWS = Correct Writing Sequences; PCWS = Percent Correct Writing Sequences; BCPS-W = British Columbia Performance Standards in Writing; SRSD+ = Self-regulated Strategy Development with explicit self-statement instruction; SRSD- = Self-regulated Strategy Development without explicit self-statement instruction.
Pre- post- intervention measures. Table 6 provides intervention effects for the pre-post intervention measures, OWLS-II and SEWS. The self-efficacy measure was the only one to show a significant difference and this was across groups over time.

Table 6.
Analysis of Pre-Post-Measures

<table>
<thead>
<tr>
<th></th>
<th>SEW</th>
<th>OWLS II</th>
<th>SEWS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Est. (SE)</td>
<td>Est. (SE)</td>
<td></td>
</tr>
<tr>
<td>Fixed Effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>8.67(0.63)</td>
<td>884.00(103.78)</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.83(0.75)</td>
<td>401.67(80.00)**</td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>0.17(0.89)</td>
<td>179.83(146.77)</td>
<td></td>
</tr>
<tr>
<td>Time*Group</td>
<td>0.00(1.06)</td>
<td>-110.33(113.13)</td>
<td></td>
</tr>
</tbody>
</table>

Covariance Parameters

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.67</td>
<td>7695.42</td>
<td></td>
</tr>
<tr>
<td>(Students)</td>
<td>(0.77)</td>
<td>(10868.92)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0°</td>
<td>18866.75</td>
<td></td>
</tr>
<tr>
<td>(Pair)</td>
<td></td>
<td>(20085.83)</td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>1.68(0.75)</td>
<td>19198.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8585.98)</td>
<td></td>
</tr>
</tbody>
</table>

Note. * This covariance parameter was constrained to zero. ** p < 0.01

OWLS-II. This standardized measure of expository writing was taken before and after the intervention to examine if the intervention on persuasive writing would generalize to expository writing. The effect size calculated for this measure, Hedges’ g = 0.00, suggested that the persuasive writing intervention had no effect on student ability to create expository paragraphs. Visual analysis of the raw OWLS-II scores over time (Figure 1) demonstrated only a slight increase in across groups and no differences between the two instructional groups.
Figure 1. Pre- and Post- Intervention Measures for OWLS-II

**SEWS.** This measure of student self-efficacy for writing was taken before and after the intervention using a self-report instrument. There was a significant increase in scores between the pre- and post- measures across groups over time (\(p < 0.01\)); the effect size also indicated a large effect of the intervention across the groups, Hedges’ \(g = 1.93\). This suggests that over the course of the intervention, all students showed a large increase in self-efficacy for writing. In regards to differences between groups, there was no statistically significant differences in change between conditions; however, the effect size for this measure was large, Hedges’ \(g = 0.84\), suggesting that the SRSD- group experienced a larger increase in self-efficacy for writing than the SRSD+ group. Similarly, a visual analysis of the graph of raw SEWS scores over time (Figure 2) demonstrated large increase in raw scores and moderate differences between the two instructional groups, with the SRSD- group showing a larger increase in reported self-efficacy for writing than the SRSD+ group. Visual analysis also shows a difference in baseline scores between groups with the SRSD- group scoring themselves much lower on self-efficacy at baseline than the SRSD+ group. What do you think accounts for this unexpected effect?
Figure 2. Pre- and Post- Intervention Measures for SEWS

**Weekly continuous measures.** Table 7 provides intervention effects for the continuous measures sampled weekly, TWW, CWS, PCWS and Duration. All measures except TWW showed a significant effect across groups over time. There were no significant differences found between groups or between groups over time.

Table 7.

**Analyses of Measures Sampled Weekly**

<table>
<thead>
<tr>
<th></th>
<th>TWW Est. (SE)</th>
<th>CWS Est. (SE)</th>
<th>PCWS Est. (SE)</th>
<th>BCPS-W Est. (SE)</th>
<th>Duration Est. (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>77.90(17.78)</td>
<td>53.37(14.10)</td>
<td>70.54(5.34)</td>
<td>5.94(0.59)</td>
<td>364.41(87.00)</td>
</tr>
<tr>
<td>Time</td>
<td>1.09(2.12)</td>
<td>4.68(1.72)**</td>
<td>2.76(0.84)**</td>
<td>0.80(0.12)*****</td>
<td>78.66(15.40)*****</td>
</tr>
<tr>
<td>Group</td>
<td>0.17(25.15)</td>
<td>11.87(19.94)</td>
<td>6.60(7.56)</td>
<td>0.95(0.84)</td>
<td>110.44(123.04)</td>
</tr>
<tr>
<td>Time*Group</td>
<td>0.49(2.99)</td>
<td>-1.60(2.44)</td>
<td>-0.41(1.18)</td>
<td>-0.08(0.17)</td>
<td>-26.55(21.78)</td>
</tr>
<tr>
<td><strong>Covariance Parameters</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td></td>
<td>148.39</td>
<td>82.23</td>
<td>0.72</td>
<td>621.87</td>
</tr>
<tr>
<td>(Students)</td>
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<td>(116.07)</td>
<td>(54.58)</td>
<td>(0.56)</td>
<td>(2860.58)</td>
</tr>
<tr>
<td>Intercept</td>
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<td>440.79</td>
<td>25.34</td>
<td>0.31</td>
<td>15875.85</td>
</tr>
<tr>
<td>(Pair)</td>
<td>(611.52)</td>
<td>(386.86)</td>
<td>(58.10)</td>
<td>(0.63)</td>
<td>(12986.16)</td>
</tr>
<tr>
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<td>311.65(57.87)</td>
<td>73.35(13.62)</td>
<td>1.47(0.27)</td>
<td>24897.85(4623.41)</td>
</tr>
</tbody>
</table>

*Note. *p < 0.05, **p < 0.01, ***p < 0.001; *a* Variance was fixed to zero in the model
**TWW.** The total number of words written in the writing samples was measured before and after the intervention as well as each week during the intervention. Across groups, TWW did not show a significant increase over time. Additionally, the effect size for the Group by Time measure very small, Hedges’ $g = 0.08$. This suggests that differences in writing instruction had no effect in regards to the TWW by students. Visual analysis of the graph of the weekly TWW scores demonstrated only a slight increase in raw scores and little difference between the two instructional groups.

![Graph of TWW scores](image)

*Figure 3. Weekly Measures for TWW*

**CWS.** The correct writing sequences present in the writing samples were measured before and after the intervention as well as each week during the intervention. The mixed model analysis indicated that there was a significant effect of time across the groups with an increase in correct writing sequences of approximately 4.68 sequences per week. In regards to differences between groups, no significant differences were found. There was a small effect size between groups, Hedges’ $g = 0.25$, with the SRSD- students showing a larger increase in CWS than the SRSD+ group. Visual analysis of the graph of the weekly CWS scores (Figure 4) demonstrated an increase in raw scores and a small difference between the two instructional groups.
Figure 4. Weekly Measures for CWS

**PCWS.** The percent correct writing sequences present in the writing samples were measured before and after the intervention as well as each week during the intervention. The mixed model analysis indicated that there was a significant effect of time across groups with an increase in percent correct writing sequences of approximately 2.76 per cent per week. There were no significant differences between groups. The effect size for the between-group differences in change was small, Hedges’ g = 0.24, with the SRSD- students having a larger increase in PCWS. Visual analysis of the graph of the weekly PCWS scores (Figure 5) demonstrated an increase in raw scores across groups and little difference between the two instructional groups.

*Figure 5. Weekly Measures for PCWS*
BCPS-W. The writing scores obtained using the B.C. Performance Standards for Written Expression for student writing samples were measured before and after the intervention as well as each week during the intervention. The mixed model analysis indicated that there was a significant effect of time across instructional groups with an increase in raw scores of 0.80 per week. Upon examining differences between groups, the effect size for post-intervention differences was small, Hedges’ $g = 0.25$, suggested that differences in writing instruction had a small effect in regards to the BCPS-W scores, with the SRSD- students showing greater improvements in BCPS-W scores than the SRSD+ group. Visual analysis of the graph of the weekly BCPS-W scores (Figure 6) demonstrated an increase in scores across groups and a small difference between the two instructional groups.

![Figure 6. Weekly Measures for BCPS-W](image)

Duration. The time students took to write persuasive paragraphs was measured in seconds before and after the intervention as well as each week during the intervention. The mixed model analysis indicated that there was a significant effect of time across the groups with an increase of 78.66 seconds per week. In regards to differences between the two conditions, the effect size for the Group by Time measure was small to moderate, Hedges’ $g = 0.44$, suggesting that differences in writing instruction between groups had a small to moderate effect in regards
to how long students wrote, with the SRSD- students showing greater increases in time spent writing. Visual analysis of the graph of the weekly Duration scores (Figure 7) demonstrated a moderate increase over time and moderate differences between the two instructional groups.

![Graph of weekly Duration scores](image)

**Figure 7. Weekly Measures of Writing Duration**

**Ordinal writing elements measure.** Table 8 provides intervention effects for the ordinal measure, Elements. Changes in the number of Elements showed a significant positive effect across groups over time. The average increase across both groups was 2.42 points. There were no significant differences found between groups or between groups over time. The SRSD + demonstrated an average increase of 2.00 points and the SRSD – had an average increase of 2.83 points.
Table 8.  
Analysis of Ordinal Measure, Elements

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Est. (SE)</th>
<th>p Value</th>
</tr>
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<tbody>
<tr>
<td>Thresholds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 vs. 2</td>
<td>-1.27 (0.91)</td>
<td>0.16</td>
</tr>
<tr>
<td>2 vs. 3</td>
<td>0.17 (0.80)</td>
<td>0.83</td>
</tr>
<tr>
<td>3 vs. 4</td>
<td>1.38 (0.81)</td>
<td>0.10</td>
</tr>
<tr>
<td>4 vs. 5</td>
<td>3.69 (0.95)</td>
<td>0.00</td>
</tr>
<tr>
<td>Time</td>
<td>1.37 (0.29)</td>
<td>0.00</td>
</tr>
<tr>
<td>Group</td>
<td>1.19 (1.12)</td>
<td>0.30</td>
</tr>
<tr>
<td>Time*Group</td>
<td>0.11 (0.43)</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Covariance Parameters

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
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<td>Intercept</td>
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<tr>
<td>(Students)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.49 (1.01)</td>
<td>0.63</td>
</tr>
<tr>
<td>(Pair)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>1.00*</td>
<td></td>
</tr>
</tbody>
</table>

Note. *This covariance parameter was fixed at 1.00

Visual inspection of the data (Figure 8) showed a moderate increase across groups over time but very little difference between groups. Because of the ordinal nature of the data, Hedges’ g was not calculated for this measure.

Figure 8. Weekly Measures of Number of Elements Present in Writing
IV. Discussion

The current study examined the impact of the self-statement component of the SRSD model for writing instruction with two primary objectives. The first goal was to investigate whether explicit instruction on the use of self-statements (providing students with: background information regarding self-statements, examples of self-statements, teacher demonstrations of the use of self-statement, and the opportunity for students to record/evaluate their own self-statements) would result in improved persuasive writing skill when compared to instruction that did not provide these instructional activities. The second goal was to determine whether explicit instruction on self-statements, along with process praise attributing writing improvement to adherence to the writing strategy, would influence student self-efficacy for writing.

Answers to Research Questions

Explicit self-statement instruction. Regarding whether explicit instruction in self-statements added value to the SRSD instruction, although all groups showed significant improvements across most measures over time, results indicated that there were no significant differences in change between the SRSD+ and SRSD- groups. Because the length of instructional time for each group was constant, results suggest that explicit instruction on the use of self-statements may not have been an essential component of the SRSD model. In fact, when effect sizes are examined, students in the SRSD- group showed slightly more improvement in duration, CWS, PCWS and BCPS-W when compared to the SRSD+ group. It is possible that because of the small sample size and lack of group equivalence at baseline it may have been easier for SRSD- students to show improvement because their baseline scores were lower. However, there are also a number of possibilities which may explain the unexpected results.
First, it is possible that there may not have been enough time to effectively instruct students in both the self-statement strategies and writing task strategies within the time frame of the study. Because the instructional time was kept the same for both groups, the SRSD+ students may not have received enough direct instruction on either writing task strategies or use of self-statements so they improved less than students who received direct instruction in persuasive writing only. This result may suggest that if teachers have limited instructional time, it may be better spent on direct instruction of writing task strategies than direct instruction in both writing task strategies and use of self-statements. Secondly, the method of self-statement instruction may have been ineffective. In the current study the interventionist discussed self-statements with the students explaining why and how they could be used in the writing process. Use of self-statements was then modeled by the interventionist, students were given time to develop their own self-statements and then encouraged to use their self-statements in the writing process. This may not have been the most effective way to teach students to use self-statements to regulate their writing behavior. Thirdly, it is unclear whether students were already utilizing self-statements spontaneously prior to the intervention. It is possible that some of the SRSD- students in fact did use self-statements effectively prior to the intervention. Because there were no baseline measures taken to identify how much if any self-talk was used by the students prior to the intervention, it is impossible to know if the groups were equivalent in this area as well. Instruction on the use of self-statements may be more effective on improving student writing for students who were not already using self-statements to regulate their behavior.

**Self-efficacy.** Regarding self-efficacy, there were significant increases in student self-efficacy for writing across groups over time but no statistical differences found between groups over time. When effect sizes were calculated, there was a large positive effect of the intervention
across groups over time indicating that all students improved in self-efficacy for writing over the course of the intervention. Additionally, there was a large effect size between groups over time suggesting that the SRSD- group showed greater improvements in self-efficacy. Although both groups increased in self-efficacy, the SRSD- group showed greater improvement. This result was contrary to what was expected. It is possible that because the SRSD- group had lower baseline scores for self-efficacy at the beginning of the intervention, it was easier for them to show greater improvement.

There are a number of other possible reasons for the unexpected results. First, the students in the SRSD+ group, who used self-talk when they evaluated their work, may have developed a more realistic view of their own writing ability. Although they scored themselves more highly than they did at the beginning of the study, their responses may have been more realistic and less extreme. Secondly, the SRSD- group received product praise while the SRSD+ group received process praise. Because both groups were plotting their own progress using the Essay Rockets, the SRSD- group was receiving feedback on both product and process where the SRSD+ group was primarily receiving feedback on process. This may have resulted in the SRSD- group feeling that they were improving both in process and in product resulting in higher levels of self-efficacy. Finally, results could be a result of the small sample size with the SRSD- group having more extreme responders. Because of the variety of possible explanations and the small sample size, interpretation of the results must be made with caution.

Additional observations. Although not directly related to the research question, a number of additional observations were made about the change in scores between the SRSD+ and SRSD- groups. Overall results indicated that scores for CWS and PCWS increased significantly suggesting that SRSD instruction may assist students in improving their writing in
the areas of syntax, semantics, spelling, capitalization and punctuation. Additionally, across both groups over time, scores on the BCPS-W also increased significantly indicating that the improvements students made in writing within the SRSD model are likely able to be measured by an instrument commonly used by local teachers. Finally, no changes were seen across groups over time for the expository writing measure. This may be because the skills taught for persuasive writing did not generalize to expository writing, but it may also be due to the fact that the measure used for expository writing was a standardized measure that was not sensitive enough to small, short-term changes in writing.

**Contributions to Research**

The current study contributes to the body of research examining the SRSD model for writing instruction by supporting and expanding existing research as well as illuminating areas warranting future study. The current study is consistent with existing research which has shown that SRSD instruction improves the persuasive writing skills and student self-efficacy for writing in grades 5 to 7. It is important to keep in mind, however, that the current study did not include a control group; therefore, it is impossible for student improvement across groups to be attributed to the intervention. Although the current study increased the body of research examining the effects of explicit instruction in self-statements within the SRSD model, it was not able to provide a clear link between explicit instruction in the use of self-statements and student writing improvement. No statistically significant differences were found between groups for duration, CWS, PCWS, BCPS-W and self-efficacy; however effect sizes for these measures suggested some evidence of differences in change between conditions. In particular, the duration and self-efficacy effect sizes were fairly large indicating that increases may be due to the intervention.
Supporting previous research. Although a control group was not used, results of the current study demonstrated statistically significant increases in the number of persuasive elements present in student writing across groups over time. At the beginning of the intervention the mean number of elements present in the paragraphs across all students was 2.50 (SD = 1.17). By the end of the intervention the mean number of elements present was 4.92 (SD = 0.29) and almost all student included a topic sentence, three reasons and a concluding sentence in their writing. This is consistent with prior research which has shown increases in the number of persuasive elements present in student writing after SRSD instruction (De La Paz, 1999; Ennis, Jolivette, & Boden, 2013; Graham & Harris, 1989; Graham et al., 2005; Tracy et al., 2009).

Additionally, results demonstrated statistically significant increases in the amount of time students spent writing their persuasive paragraphs across groups over time. By the end of the intervention, all students significantly increased in the time they used to plan and compose their writing samples, with three of the four grade 7 students demonstrating writing durations greater than 15 minutes on the last writing probe. These results are consistent with previous research by Graham and his associates, in 2005, that SRSD instruction increased the time that students spent planning and composing their writing samples.

Results regarding the number of words students generated during their writing did not show statistically significant increases across groups over time. During the first writing sample the mean TWW was 83.75 (SD = 51.08), by the end of the intervention the TWW was 90.50 (SD = 28.54). This result is consistent with earlier findings by Graham and Harris (1989) but is contrary to more recent findings (De La Paz & Graham 1997; Graham et al., 2005; Tracy et al., 2009). It is possible that writing production, in the current study, may not have increased because students spent time creating and organizing concise pieces of work rather than simply generating...
more words. It was noted in the current study that at the beginning of the intervention students often used repetitive sentences that were lengthy, difficult to understand, and sometimes unrelated to the topic. By the end of the intervention students were utilizing the TREE strategy to write concise, unified paragraphs. When extra sentences were included they were used to explain or give examples for the reasons provided so the unity of the paragraph was maintained. It is possible that by improving their persuasive writing skills, students decreased the amount of words they used and expressed the same ideas more clearly. This interpretation may also help to explain the significant increase in the CWS and PCWS, metrics which are impacted by quality and accuracy, while the TWW, a metric not influenced by quality and accuracy, remained constant.

Regarding self-efficacy, there is some evidence that using the SRSD model of instruction for writing may increase student self-efficacy for writing (Graham & Harris, 1989a, 1989b) while other studies have shown no change in student self-efficacy (Graham et al., 2005; Sawyer et al., 1992). Most of the previous studies utilized small samples and did not calculate effect sizes. Even though there were only 12 participants in the current study, a significant positive effect of intervention across groups over time was found in student self-efficacy for writing. Additionally, there was a large effect size over time that is consistent with previous research indicating that SRSD instruction in writing may increase student self-efficacy for writing.

**Expanding on previous research.** A majority of the previous research utilized measures of duration, number of elements, length of composition, and a holistic measure to determine if student writing was improved through SRSD instruction. The current study expanded the measures used to include CWS and PCWS to provide measures that examined elements of sentence structure and word usage. CWS was added because it takes into consideration the
grammar, spelling, punctuation and capitalization of the written work. It has been found that CWS also correlates well with both standardized writing measures and teacher qualitative measures of writing in elementary school (Jewell & Malecki, 2005; Malecki, 2008). PCWS, a measure of accuracy, was added because research suggests that, in middle and high school, accuracy measures are more strongly related to standardized achievement scores and classroom grades than production-dependent measures as the quantity of writing produced becomes less important than quality of writing (Amato & Watkins, 2009; Jewell & Malecki, 2005). In the current study, significant increases in scores for CWS and PCWS across students over time, were observed. Examining change in these types of measures within the SRSD model is something that has not been previously examined.

Although previous research has frequently used a holistic measure of student writing, often these measures were derived by researchers (De La Paz, 1997; De La Paz & Graham, 1997; Graham et al., 2005; Tracy et al., 2009), and were not necessarily measures that would be used by teachers. The BCPS-W rubric, used in the current study, aligns with BC’s provincial curriculum standards; therefore, improvement in student scores, based on this rubric, reflect student growth in meeting the expectations of the curriculum. The current study attempted to determine if an analytic rubric developed by and commonly used by teachers in the province where the study was conducted, was sensitive enough to detect improvements in student writing occurring due to the SRSD writing intervention. Across students over time the BCPS-W rubric scores increased significantly suggesting that students were better able to meet the expectations of the curriculum. Furthermore, results suggest that teachers in the classroom should be able to observe and measure improvements in student writing due to the intervention.
The current research also attempted to determine if instruction in persuasive writing using the SRSD model would generalize to expository writing by using a measure from the OWLS-II battery. Little research has been completed regarding how student persuasive writing ability relates to expository writing and whether improving one type of writing would improve the other. The current study found no impact of the persuasive writing intervention on the students’ expository writing skills. This could be due to the fact that the skills learned for persuasive writing do not generalize to expository writing. Conversely, results may be due to the fact that the instrument used to measure expository writing was not sensitive to the changes students made over the short time of the intervention.

**Study Limitations and Strengths**

**Limitations.** Results of this study should be interpreted with caution for several reasons. First, the sample size of the study was small. Because there were only twelve participants, four students from each of the three grade levels, random assignment did not result in baseline equivalence. To compensate for this, the current study examined the difference in change between groups; however, a larger sample size which would facilitate random assignment resulting in equivalence of group at baseline would have been preferred. Moreover, with a small sample size achieving significant results is unlikely even if the treatment had a large effect; because of this, effect sizes were heavily relied upon to determine the meaningful impact of the intervention.

Because the current study was designed to examine differences between two conditions of an intervention, it did not utilize a control group. This is another limitation because, although the results across conditions were consistent with prior research which demonstrated that the SRSD model improved student writing, the lack of control group makes it impossible to show
causation between the intervention and the increases in scores, particularly where there are no
group differences. Without a control group, it is not possible to determine if changes across
groups were due to the intervention or due to other factors.

Another limitation of the study was that the primary investigator was also the
interventionist and instructed both groups. Ideally, the interventionist should not have been privy
to the hypothesis of the study so as to ensure that the instruction between the two groups was not
biased by this knowledge. In the current study, the interventionist was aware of this weakness in
design, but due to budget and time constraints the current implementation was the only viable
option. To try to ensure that the instruction students received was not biased, lesson plans and
fidelity checklists were developed prior to and used during the intervention, to ensure that
important aspects of each lesson were covered. Additionally, all lessons were audiotaped, and
randomly chosen lessons were reviewed by an independent reviewer to determine treatment
fidelity. Even with these precautions in place it is possible that the interventionist behaved
differently towards the groups based on her knowledge of the hypothesis of the study.

Finally, there was lack of clarity as to whether differences in increases in self-efficacy
between groups can be attributed to explicit instruction on self-statements, receiving product
praise focused on attributing writing improvement to strategy adherence, or the interaction of
both of these elements. Further research should be done to clarify this point.

**Strengths.** While the current study did have several limitations, it also possessed a
number of important strengths that should be highlighted. First, because of the multi-level nature
of the study, differences in change were examined using a mixed effects, repeated measures
analysis that took into consideration that students were not being taught independently but in
pairs. Multilevel modeling has been recommended for educational studies with nested data
structures such as the current study in which individual students were nested within student instructional pairs. These nested data structures violate the independence assumption required by traditional statistical analysis producing excessive Type I errors and biased parameter estimates (Peugh, 2010); therefore, multilevel modeling is preferable. Additionally, effect sizes were presented as well as p values so that the magnitude of differences between groups could be examined. Effect size demonstrates the magnitude of the effect regardless of the size of the sample and calculated effect sizes can allow for quantitatively comparing results from different studies.

A second strength of the current study is that multiple measures, scored by an independent rater, were used to examine student writing improvement. According to Gersten et al. (2005), because no individual measure can assess the most important aspects of performance that an intervention might influence, good educational research should utilize multiple measures. In the current study, multiple measures that represent process (duration and elements) as well as product (TWW, CWS, PCWS & BCPS-W) were used. Furthermore, having the rater blind to study conditions is optimal for any study (Gersten et al., 2005). In the current study writing sample scores were provided by a researcher who was blind to the conditions from which the writing samples were taken.

Finally, a majority of the research on the efficacy of the SRSD model has been completed by those who developed it. A strength of the current study is that it was conducted by researchers who are independent of any laboratory that is currently doing research in the area of SRSD and independent of those who developed the model. The overall results of this study are consistent with the prior work completed by the developers.
Potential Implications for Practice and Future Research

**Practice.** The current study adds to the already large amount of scientific evidence demonstrating that the SRSD model of writing instruction is effective in improving the persuasive writing skill of struggling young writers. Because gains in scores were observed in CBM-W measures (CRS and PCWS), practical measures such as BCPS-W, and self-efficacy measures across the intervention, teachers should be encouraged to utilize this instructional model with struggling writers in their classrooms.

Specifically regarding self-efficacy scores between groups, significant increases in student self-efficacy was observed across students over time. This suggests that if teachers use the SRSD model for persuasive writing, they may be increasing student self-efficacy for writing as well as improving student writing skill. However, differences between conditions were observed; effect size calculations suggest that the SRSD- group performed better than and had larger self-efficacy gains than the SRSD+ group. This difference may be due to baseline differences between the groups but it may also be due to the differences in instruction between groups. If it is due to differences in instructional methods, then teachers and interventionists may find larger increases in student self-efficacy if they spend time directly teaching the writing task strategies rather than explicitly teaching about the use of self-statements.

**Research.** Although the results of current study are consistent with past research showing that the SRSD instructional model is effective in improving student persuasive writing, it also left some important questions unanswered. For example, the results obtained in the current study regarding the effect of explicit instruction on self-statements were contrary to what was expected. Effect sizes indicated that students who did not receive explicit instruction on self-statements performed slightly better on writing tasks and experienced larger gains in self-
efficacy. Because of the small sample size, differences in baseline scores and the difficulty achieving random assignments into groups, more research should be completed to clarify this result.

Additionally, research specifically in the area of self-efficacy should be completed to determine if teacher process praise focusing on improvement to do with strategy adherence is effective in increasing student self-efficacy for writing or if process and product feedback together is more effective. Finally, more research in the area of self-statements and self-regulation should be pursued to determine if teaching self-talk can improve student learning and if so at what age this type of instruction is most effective and what methods are most effective.

Conclusions

Although the current study did not include a control group, results across both conditions are consistent with prior research demonstrating that the SRSD instructional model is effective in increasing student writing skills and in increasing student self-efficacy in regards to writing. Additionally, although there were no statistical differences found between the SRSD+ and SRSD- groups, effect sizes indicated small to moderate positive effects for the SRSD- group in regards to duration, CWS, PCWS, and BCPS-W when compared to the SRSD+ group. Furthermore, the effect size for the self-efficacy measure indicated a large positive effect for the SRSD- group when compared to the SRSD+ group. These results could be due to the small sample size, differences in groups at baseline, or ineffective techniques used for self-statement instruction. Alternatively, the results could indicate that explicit instruction in the use of self-statements is not a critical component of the SRSD model and, in fact, instructional time may be more effectively spent on direct instruction of writing task strategies. The current research highlights the need to more closely examine the effect of explicit instruction in self-statements
for the writing process so that practitioners can determine how best to use precious instructional time.
References


doi:10.1177/0022466909333516


doi:10.1037/a0029692


### Appendix A
Adapted from the BC Performance Standards for Writing – Grade 6

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<th>Score:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td><strong>Meaning</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td><strong>Relevant personal reactions and ideas with some analysis: sense of individuality</strong></td>
</tr>
<tr>
<td></td>
<td>Ideas and information</td>
<td>Some ideas related to the topic; tends to rely on re-telling or listing</td>
<td>Some opinions and reactions</td>
<td>Relevant personal reactions and ideas with some individuality</td>
</tr>
<tr>
<td></td>
<td>Use of detail</td>
<td>Parts are inaccurate, illogical, repetitive, irrelevant or copies</td>
<td>Information and ideas are relatively simple</td>
<td>Ideas and information are direct and straightforward</td>
</tr>
<tr>
<td></td>
<td>Insufficient details, explanations, examples; often extremely short</td>
<td>Some explanations, details and examples (may be very brief or partly irrelevant)</td>
<td>Some relevant explanations, details and examples</td>
<td>Some relevant explanations, details and examples</td>
</tr>
<tr>
<td><strong>Style</strong></td>
<td>-</td>
<td>-</td>
<td><strong>Language is clear, varied and some precise expressive language</strong></td>
<td></td>
</tr>
<tr>
<td>Clarity, variety and impact of language</td>
<td>Simple, repetitive language; may make errors in word choice</td>
<td>Language tends to be simple and often vague</td>
<td>Language is clear; some variety and description</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sentences are often short and repetitive</td>
<td>Sentence length may be varied; relies on a few basic patterns</td>
<td>Variety of sentence lengths; may vary sentence beginnings</td>
<td></td>
</tr>
<tr>
<td><strong>Form</strong></td>
<td><strong>Culture</strong></td>
<td><strong>Opening</strong></td>
<td><strong>Introduces the topic and purpose; may provide some context</strong></td>
<td><strong>Opens with clear intention or purpose; provides context</strong></td>
</tr>
<tr>
<td>Begins without establishing the topic, purpose or context</td>
<td><strong>Introduces the topic; purpose and context may be omitted or unclear</strong></td>
<td><strong>Sticks to the topic; easy to follow, with related ideas grouped together</strong></td>
<td><strong>Develops topic with logical sequence of ideas</strong></td>
<td></td>
</tr>
<tr>
<td>May attempt to develop the topic, but often wanders, loses focus</td>
<td>Generally sticks to the topic and easy to follow but may wander</td>
<td>Ending is logical but abrupt</td>
<td>Effective ending</td>
<td></td>
</tr>
<tr>
<td>No real “ending”</td>
<td>Ending is weak or abrupt</td>
<td>Uses a variety of connecting words</td>
<td>Uses increasing variety of transitional words and phrases; may take risks</td>
<td></td>
</tr>
<tr>
<td>Overuses simple connecting words</td>
<td>May overuse a few connecting words</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Conventions</strong></td>
<td><strong>Spelling</strong></td>
<td><strong>Frequent errors interfere with meaning</strong></td>
<td><strong>Some noticeable errors; these may cause the reader to hesitate or re-read parts to confirm meaning</strong></td>
<td><strong>Sense of control; few errors; these are usually the result of taking risks to use complex language</strong></td>
</tr>
<tr>
<td></td>
<td>Punctuation</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Complete Sentences</td>
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<tr>
<td></td>
<td>Grammar</td>
<td></td>
<td></td>
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</tbody>
</table>
Appendix B
Lesson Plan Class 6 – Model the Strategy

SRSD +
Overview:
- Interventionist models use of:
  - POW + TREE strategy for writing an opinion paragraph.
  - Self-statements
- Students will read their paragraphs from last day and identify the TREE elements
- Students observe the interventionist demonstrate opinion paragraph writing – Talk-aloud strategy used
- Students develop personal self-statements
- Students POWsand self-statements to prepare to write a paragraph on the same topic

Student Objectives:
- SWBT orally recite the mnemonic for POW + TREE and explain what an opinion is and what a transition is
- SWBT identify TREE elements in the paragraph they wrote last day
- SWBT identify self-statements that teacher used in talk-aloud demonstration
- SWBT write personal self-statements and use them during pre-writing POW activity

Background: (8 Min)
- Remind students of POW + TREE and have each student explain the mnemonic
- Identify that the POW TREE strategy will help them write better; Process goal emphasized – praise for strategy use
- Look at and read an essay they wrote last day and identify the TREE parts
- Remind them about self-statements and self-instructions
- Prepare students for interventionist demonstration using talk-aloud strategy. Explain that interventionist will speak aloud the thoughts she has while she models how to write a paragraph on the white board
- Ask students to remember/write down some of the important statements the interventionist said to herself during the writing process

Model Strategy: (12 Min)
- Point out POW + TREE graphic organizer (poster)
- Read the prompt a number of times out loud and use examples of self-statements such as, “P stands for pick and idea. I need to take my time, I know a good idea will come to me”
- Model things one might say to oneself during each stage (include coping, process, attribution and self-reinforcement statements)
- Make corrections in the essay as it is written
- Discuss the self-statements the students noted down that the interventionist made.
- Discuss POW + TREE elements the students observed in the demonstration

Develop Student Self Statements and Elements of Paragraph Practice (8 Min)
- Give each student a self-statement sheet and ask them to write some thing’s they could say to themselves as they write
• Have students begin POW for the topic they just observed being modelled and have them use their self-statement sheets.

Wrap Up (2 Min)
• Remind students they will need to remember POW + TREE for next class
• Ask them to finish their self-statements and bring their self-statements to class next time (If they do not finish during the period)

SRSD – Overview:
• Interventionist models use of:
  o POW + TREE strategy for writing an opinion paragraph.
• Students will read their paragraphs from last day and identify the TREE elements
• Students observe the interventionist demonstrate opinion paragraph writing - Descriptive strategy used
• Students identify the TREE elements in the interventionist’s paragraph
• Students use POW to prepare to write a paragraph on the same topic

Student Objectives:
• SWBT orally recite the mnemonic for POW + TREE and explain what an opinion is and what a transition is
• SWBT identify TREE elements in the paragraph they wrote last day
• SWBT identify the TREE elements in the in the interventionist’s paragraph
• SWBT use POW during preparation for writing a paragraph on the same topic they just observed demonstrated

Background: (8 Min)
• Remind students of POW + TREE and have each student explain the mnemonic
• Look and read an essay they wrote last day and identify the TREE parts
• Prepare students for interventionist demonstration using descriptive strategy. Explain that interventionist will model how to write an essay on the white board
• Ask students to remember/write down some of the important POW TREE parts they observed the interventionist model during the writing process

Model Strategy: (10 Min)
• Point out POW + TREE graphic organizer (poster)
• Present the prompt. The interventionist describes the process: write out a topic sentence; brainstorm ideas; organize ideas; write out the body of the essay; write a conclusion; and re-read for content and errors.
• Focus on paragraph topic, organization, and conclusion as product goals
• Discuss the POW + TREE elements the students observed during the demonstration

Elements of Paragraphs Practice (8 Min)
• Have students complete the POW steps for the same topic they just observed

Wrap Up (2 Min)
• Remind students they will need to remember POW + TREE for next class