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## Self-Regulated Strategy Development for Students with Emotional/Behavioral Disorders in a Residential School

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## ACCEPTANCE

This dissertation, SELF-REGULATED STRATEGY DEVELOPMENT FOR STUDENTS WITH EMOTIONAL/BEHAVIORAL DISORDERS IN A RESIDENTIAL SCHOOL, by ROBIN PARKS ENNIS, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree Doctor of Philosophy in the College of Education, Georgia State University.

The Dissertation Advisory Committee and the student's Department Chair, as representatives of the faculty, certify that this dissertation has met all standards of excellence and scholarship as determined by the faculty. The Dean of the College of Education concurs.

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- Jolivet, K., McDaniel, S. C., Sprague, J. R., Swain-Bradway, J., & Ennis, R. P. (2012). Infusing PBIS practices into complex systems of alternative education settings: A decision-making process. *Assessment for Effective Intervention, 38*, 15-29.
- Jolivet, K., Swoszowski, N. C., Jacobs, N., McDaniel, S. C., & Ennis, R. P. (2012). District PBIS team questions related to using the PBIS framework to transition students with challenging behaviors from alternative to regular settings. *Journal of the American Academy of Special Education Professionals, 51*, 45-64.
- Lane, K. L., Capizzi, A. M., Fisher, M. H., & Ennis, R. P. (2012). Secondary prevention efforts at the middle school level: an application of the behavior education program. *Education and Treatment of Children, 35*, 51-90.
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## ABSTRACT

### SELF-REGULATED STRATEGY DEVELOPMENT FOR STUDENTS WITH EMOTIONAL/BEHAVIORAL DISORDERS IN A RESIDENTIAL SCHOOL

by  
Robin Parks Ennis

Students with emotional and behavioral disorders (E/BD) have academic deficits that affect their success in school; however, few researchers have investigated what strategies work best for this population, especially in the area of writing. One promising intervention to support the writing skills of students with and at-risk for E/BD is self-regulated strategy development (SRSD). SRSD is a six-stage, explicit strategy instruction model that includes procedures for goal setting, self-monitoring, self-instruction, and self-reinforcement and can be generalized to a variety of writing tasks. The purpose of this study was to determine the effects of an SRSD persuasive writing intervention on the writing achievement of 44 students in a residential school. Results of a piecewise hierarchical linear modeling growth curve analysis suggest statistically significant gains were made over the course of the intervention in writing (quality, correct word sequences, and essay elements) and academic engagement. Effects also generalized to writing achievement measures. In addition, teachers implemented the intervention with high fidelity, and both students and teachers rated the intervention as socially acceptable, with higher ratings postintervention.

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WITH EMOTIONAL/BEHAVIORAL DISORDERS  
IN A RESIDENTIAL SCHOOL

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## ABBREVIATIONS

AE	academic engagement
CIRP	Children's Intervention Rating Profile
CWS	correct word sequences
DARE	Develop your topic sentence, Add supporting ideas, Reject an argument for the other side, End with a conclusion
E/BD	emotional and behavioral disorders
IOA	interobserver agreement
IRP-15	Intervention Rating Profile
MOOSES	Multiple Option Observation System for Experimental Studies
PBIS	positive behavioral interventions and supports
SDQ	Strengths and Difficulties Questionnaire
SET	School-wide Evaluation Tool
SRSD	self-regulated strategy development
SSBD	Systematic Screening for Behavior Disorders
STOP	Suspend judgment, Take a side, Organize ideas, Plan more as you write
WJ-III	Woodcock Johnson Tests of Achievement, Third Edition

## CHAPTER 1

### SELF-REGULATED STRATEGY DEVELOPMENT WITH STUDENTS WITH EMOTIONAL/BEHAVIORAL DISORDERS

Students with emotional and behavioral disorders (E/BD) have academic, behavioral, and social needs that may impact their ability to be successful in the classroom. Students with emotional and behavioral disorders (E/BD) have a number of maladaptive behaviors that impede their relations with teachers and peers (Kauffman, 2001) as well as their academic success (Wagner & Cameto, 2004). For example, elementary-aged students with E/BD are less academically engaged, display higher rates of disruptive/inappropriate behavior, and have higher rates of course failure than both their typically developing peers and their peers served under other IDEA eligibility criteria (Cullinan, Evans, Epstein, & Ryser, 2003). These characteristics also were consistent among students with E/BD at the middle and high school levels (Cullinan & Sabornie, 2004; Lane, Carter, Pierson, & Glaeser, 2006). In addition, several recent investigations have demonstrated that these characteristics are stable over time (Hayling, Cook, Gresham, State, & Kern, 2008) regardless of the age at which they are first identified. For example, Bilancia and Rescorla (2005) measured academic, behavioral, and social characteristics of students with E/BD over six years. Regardless of their age at the beginning of the study (two groups: 4 to 5 or 6 to 7), their deficits remained stable over time.

#### **Pejorative Outcomes**

While students served under the eligibility criteria of E/BD represent only 1% of the school-age population and 8.2% of students receiving special education services, they

demand a greater part of school resources and adult support (Wagner & Davis, 2006). Further, students with E/BD may require more hours of school-discipline contact than any other disability population (Wagner & Davis, 2006). The inappropriate behaviors of these students, both externalizing and internalizing, are associated with negative school outcomes such as math deficits, reading failure, poor interpersonal skills, and risk for drop-out and post-school failure (U.S. Department of Education, 2002). For example over 50% of students with E/BD drop out of school, and of those that finish only 29% obtain secondary degrees (Jolivet, Stichter, Nelson, Scott, & Liaupsin, 1999).

### **Alternative Education Settings**

Because of the unique needs of these students, a large number are being excluded from general education settings and placed in more restrictive environments (i.e., self-contained classrooms/facilities; National Center on Education Statistics, 2001), the most restrictive of which are 24/7 residential facilities. In effect, students with E/BD represent 33% to 75% of those served in alternative educational settings (U.S. Department of Education, 2002).

The goals of placement of students with E/BD in alternative settings include providing an appropriate setting for learning and improving behavior to equip students to return to a less restrictive environment (Simonsen, Britton, & Young, 2010). However, research on alternative settings and their impact on students with E/BD has revealed that both student behavior (Kleiner, Porch, & Farris, 2002) and learning (Lane, Wehby, Little, & Cooley, 2005; Quinn, Poirier, Faller, Gable, & Tonelson, 2006; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004) may be negatively affected by placement in an alternative setting. This depiction of alternative settings coupled with the pejorative

outcomes for students with E/BD in general (Walker , Ramsey, & Gresham, 2004), clearly illustrates the need for finding evidence-based interventions that will have a positive impact on the behavior of students placed in alternative settings.

### **Academic Outcomes**

Despite possessing average intelligence, students with E/BD have academic deficits in the areas of reading, writing, spelling, and mathematics (Kauffman, 2001; Reid et al., 2004) and are less academically engaged in the classroom than their peers (Wagner & Cameto, 2004). Recent studies have shown that in the area of writing, in particular, students with E/BD have substantial deficits across the grade span (Nelson, Benner, Lane, & Smith, 2004). This is perhaps because writing is a complex activity which requires multiple cognitive processes, including planning, transcribing, and revising (Graham & Harris, 2003).

Despite these documented academic weaknesses in writing and other areas, the No Child Left Behind Act of 2001 mandates that all students make adequate yearly progress on standardized assessments. The National Assessment of Educational Progress writing assessment of 2007 found that less than 6% of students with disabilities in grades 8 and 12 demonstrated proficient writing skills on assessments of narrative, informative, and persuasive writing (Institute of Education Sciences, 2007). Additionally, the inability to express ideas through written expression may have negative effects on academic achievement in the school setting as well as in more distal environments, as inadequate writing skills in adulthood can present barriers in post-secondary education and employment (National Commission on Writing, 2004). Writing is now required for most living-wage jobs with both public and private employers citing a need for writing

proficiency for occupational success (National Commission on Writing, 2004). These findings are a clear call for evidence-based instruction for students in the area of writing.

Despite these facts, few studies have focused on writing interventions with students with or at-risk for E/BD who also have poor writing skills (Little, Lane, Harris, Graham, Story, & Sandmel, 2010). Students with difficulties in the area of writing have difficulty generating ideas, organizing ideas, setting personal writing goals, self-monitoring written performance, and revising written work (Harris & Graham, 1996). One evidence-based intervention that addresses all of the components of the writing process (i.e., planning, composition, editing, revising, publishing) is self-regulated strategy development (SRSD; Harris, Graham, Mason, & Friedlander, 2008).

### **Self-Regulated Strategy Development**

SRSD was developed in 1982 to address the needs of students with poor writing abilities. SRSD is designed to address difficulties with writing as well as attitudes, beliefs, and motivation related to the writing process. The SRSD model includes procedures for goal setting, self-monitoring, self-instruction, and self-reinforcement, and may be generalized to other settings and maintained over time when taught to mastery in whole-class, small group, or individual settings (Harris et al., 2008). The SRSD model is well-aligned with interventions successful in improving the academic and behavioral skills of students with or at-risk for E/BD, as it incorporates self-monitoring and goal setting, strategies with proven utility for students with E/BD (McDougall, 1998; Mooney, Ryan, Uhing, Reid, & Epstein, 2005). Further, as students with E/BD receive instruction in both inclusive, collaborative, and resource settings, the flexibility of SRSD implementation yields itself for use with this population.

The SRSD model has been used to teach a variety of genres of writing including expository (De La Paz & Graham, 1997), narrative (Sawyer, Graham, & Harris, 1992), and persuasive (Sexton, Harris, & Graham, 1998). In addition, it has been used to teach specific writing skills such as planning (including goal setting; Graham, MacArthur, Schwartz, & Page-Voth, 1992), revising (Graham & MacArthur, 1988), and writing for state competency tests (De La Paz, 1999). The implementation of SRSD interventions have resulted in gains in multiple skills involved in the writing process, such as planning, essay/story elements, length, quality, and revisions. In general, the SRSD model involves six instructional stages presented over eight to 12 lessons lasting 30-40 minutes each, and administered at least three times per week in individual, small group, or whole class formats. The number of lessons varies because each stage of the SRSD model is taught to mastery, a process that conforms based on the needs of the student(s) using the strategy (Harris et al., 2008). The six stages of the SRSD model are described below.

**Stage 1: Develop background knowledge.** The first stage of the SRSD model involves the teacher and student(s) developing any preskills or background knowledge that relates to the targeted genre of writing. This involves reading works from the genre and developing relevant vocabulary (e.g., opinion/support in persuasive writing). This stage also includes developing knowledge about goal setting and self-monitoring while writing (Harris et al., 2008).

**Stage 2: Discuss it.** This stage involves the teacher and student(s) discussing the relevance and benefits of writing, especially as it relates to the targeted genre. Here, the teacher also emphasizes the importance of learning, using, and memorizing writing strategies to have a systematic approach to use when writing. Student(s) also may

examine their current writing performance by evaluating their writing ability with regard to essential elements of writing. Then student(s) may graph their performance and self-monitor improvements over time. Finally, the teacher introduces a specific strategy (usually a mnemonic) and shares how and when to use the strategy so that other appropriate tasks for using the strategy may be identified (Harris et al., 2008). Such tasks include writing for other subject areas (i.e., science and social studies) using expository writing (Mason, Snyder, Sukhram, & Kedem, 2006), or self-advocating for oneself using persuasive writing (Cuenca-Sanchez, Mastropieri, Scruggs, & Kidd, 2012).

**Stage 3: Model it.** During the third stage, the teacher or a peer models the use of the strategy so students may be explicitly shown the steps involved prior to attempting to use the strategy independently. One key component of the modeling process is the use of self-talk (self-instructions and self-questioning) as the model moves through this and subsequent stages. Modeling serves as a demonstration of the internal processes that a skilled writer uses given any writing task. Examples of self-talk address all areas, including defining a problem, focusing attention, planning, strategy statements, self-evaluating, and self-reinforcing. To be effective, the teacher or peer providing the model should be natural and enthusiastic. SRSD texts provide modeling scripts to help teachers address all components (e.g., Harris et al., 2008).

**Stage 4: Memorize it.** This stage involves memorizing the specific writing strategy mnemonic that will guide a student(s) through the entire writing process as well as the meaning and importance of each step in the writing strategy. While discussion of the mnemonic started much earlier (e.g., Stage 2), this stage provides an opportunity for all students to memorize the strategy and internalize its importance, and is especially

important for students with memory and learning problems. Teachers can provide additional support and practice opportunities to students having difficulty with memorization during this stage (Harris et al., 2008).

**Stage 5: Support it.** During stage five, typically the longest stage, teachers support student(s)' use of strategies by monitoring student writing. Teacher support may include assistance and reminders which are provided until students are able to meet their goals and apply strategies independently. Criterion levels for each student should be gradually increased over time. During this stage, teachers and students plan and execute opportunities to generalize the strategy to other settings and maintain its use over time. This stage is crucial for struggling writers, and, as mentioned previously, may take longer for students who are poor writers (Harris et al., 2008).

**Stage 6: Independent performance.** In the final stage, student(s) should be fully self-regulating their own writing, meaning the student is using the strategy independently and without teacher prompting. Student(s) who are using oral self-talk (as observed by the model) are encouraged to self-talk in their heads as they utilize the mnemonic during the writing process. This stage also involves presenting student(s) with opportunities to generalize the strategy learned (i.e., using the mnemonic for writing in science or social studies) as well as presenting any needed booster sessions to promote maintenance of strategy use (Harris et al., 2008).

The SRSD model has clear benefits for students with or at-risk for E/BD, by including components commonly used when intervening with this population, such as self-monitoring (Niesyn, 2009), modeling appropriate behavior (Gresham, Cook, Crews, & Kern, 2004), and improving skill acquisition to promote appropriate classroom

behavior (Heflin & Jolivette, 2010; Scott, Nelson, & Liaupsin, 2001). Further, there is a substantial research-base demonstrating the need for providing social and behavioral supports, in addition to academic supports to better address the needs of students with E/BD (Landrum, Tankersley, & Kauffman, 2003; Lane et al., 2006) which many schools have addressed by providing academic instruction and intervention within comprehensive three-tiered models of positive behavioral interventions and supports (PBIS; Lane, Kalberg, & Menzies, 2009; Sugai & Horner, 2006).

### **Positive Behavioral Interventions and Supports Framework**

To best support the needs of students with and at-risk for E/BD a comprehensive approach that addresses academic, behavioral, and social deficits is needed (Landrum et al., 2003) which schools across the country have addressed using three-tiered models of PBIS (Lane et al., 2009; Sugai & Horner, 2006). PBIS is a systematic approach to teaching, monitoring, and reinforcing appropriate behavior. The primary tier of support focuses on clarifying expectations across all school environments, explicitly teaching those expectations, providing opportunities to practice and receive reinforcement for engaging in appropriate behaviors, and developing a data-monitoring system to identify students who need additional supports (Lane et al., 2009). It is estimated that approximately 80% of the school population will respond to this level of support. However, approximately 10-15% of the school population will need additional supports in academic, behavioral, or social domains. This group will need secondary tier supports, which focus on reducing the number of problem behaviors currently occurring (Jolivette & Nelson, 2010). The tertiary tier of support is designed to improve chronic behavior problems of 1-5% of students who require intensive individualized supports.

This model of students' support needs is consistent across both inclusive settings and specialized settings serving students with students with E/BD, as primary- and secondary-tiered prevention strategies will reduce problem behaviors displayed by all students, allowing faculty and staff to focus their efforts on the remediation of academic, behavioral, and social problems of students at the secondary- and tertiary-tiers (Jolivette & Nelson, 2010). Additionally, current investigations examining the efficacy of SRSD with students with and at-risk for E/BD have taken place within three-tiered PBIS models, with SRSD serving as a secondary-tier intervention for students who are nonresponsive to the primary tier of writing instruction. SRSD can be used as a primary- or secondary-tier academic intervention within PBIS models.

### **Purpose**

The purpose of this review is to identify the existing research base in the area of SRSD with students with and at-risk for E/BD to determine if SRSD is an evidence-based practice for use with this population (Horner, Carr, Halle, McGee, Odom, & Wolery, 2005). The effectiveness of SRSD has been investigated with students with a broad range of disabilities and deficits; however, there is no summative work evaluating the effectiveness of SRSD with students with or at-risk for E/BD. This review seeks to fill that void and evaluate the existing literature base in terms of (a) writing genre, (b) interventionists, (c) dependent variables, (d) quality indicators (i.e., treatment fidelity, social validity, and inter-observer agreement; Horner et al., 2005), and (e) whether SRSD was administered within three-tiered models of PBIS.

## **Existing Literature**

Results yielded 11 studies investigating the utility of SRSD with students with writing problems who are at-risk for or identified as E/BD (see Appendix A). Five studies included subjects with E/BD, five included subjects at-risk for E/BD with challenging behaviors, and one study included participants identified as both at-risk and identified as E/BD. All studies except for three (Cuenca-Sanchez et al., 2012; Harris et al., in press; Lane et al., 2011) employed single-subject designs to demonstrate the effectiveness of SRSD. Cuenca-Sanchez et al. (2012) and Lane et al. (2011) used a pre- and post-test group experimental design study to make comparisons with a control group. Harris et al. (in press) used a randomized control to assign students to either narrative or persuasive writing conditions. The studies involved a total of 168 individuals (104 males; 64 females) participating in SRSD writing interventions. Studies were implemented in both elementary (N = 7) and middle (N = 4) schools with no studies implemented at the high-school level. The setting of the studies represent the diverse populations that students with and at-risk for E/BD are served, both inclusive (N = 8) and self-contained (N = 3), but no studies were conducted within alternative, residential, or juvenile justice facilities.

## **Writing Genre**

The 11 studies involved three genres of writing: expository (Mason et al., 2006), narrative (Harris et al., in press; Lane et al., 2011; Lane, Graham, Harris, Little, Sandmel, & Brindle, 2010; Lane, Harris, Graham, Weisenbach, Brindle, & Morphy, 2008), and persuasive (Cuenca-Sanchez et al., 2012; Harris et al., in press; Lane et al., 2011; Little et al., 2010; Mason, Kubina, Valasa, & Cramer, 2010; Mason & Shriner, 2008; Mastropieri

et al., 2009, in press). The expository study used the mnemonic TWA + PLANS which reminds writers to **T**hink before reading, think **W**hile reading, think **A**fter reading and **P**ick goals, **L**ist ways to meet goals, **A**nd, make **N**otes, **S**equence notes. The studies using SRSD to teach narrative writing used the mnemonic POW + WWW What2 How2 which stands for **P**ick my idea, **O**rganize my notes, **W**rite and say more and **W**ho is the main character? **W**hen does the story happen? **W**here does the story happen? **W**hat does the main character do? **W**hat happens then? **H**ow does the story end? **H**ow does the main character feel?. All studies focusing on persuasive writing used the mnemonic POW + TREE, which stands for **T**opic sentence, **R**easons, **E**nding, **E**xamine.

### **Interventionists**

Nine of the studies were administered within small group settings with a student to teacher ratio ranging from 1:1 to 4:1. The SRSD instructional model was presented by classroom teachers in two studies (Cuenca-Sanchez et al., 2012; Harris et al., in press). Eight of the studies were presented by a research assistant, most commonly a graduate student completing a general or special education program of study. The remaining study implemented SRSD using both teachers and researchers (Mastropieri et al., in press). Four studies used special educators (researchers and/or teachers) as interventionists (Cuenca-Sanchez et al., 2012; Mason et al., 2010; Mason & Shriner, 2008; Mastropieri et al., 2009, in press). One study used general educators as interventionists (Harris et al., in press). The remaining studies did not specify whether interventionists were general or special educators or reported to have used both.

## Dependent Variables

All studies, except one (Mason et al., 2006), used measures of length, quality, and essay/story elements to evaluate the effectiveness of the SRSD intervention. The one exception, Mason et al. (2006), used oral and writing retells. Cuenca-Sanchez et al. (2012) measured number of sentences, transition words, paragraphs, self-efficacy, and self-determination in addition to length, quality, and elements. Likewise, Mastropieri et al. (2009) and Mastropieri et al. (in press) measured transition words and used the *Writing Fluency* subtest of the *Woodcock-Johnson III Test of Achievement* as a pre- and post-test measure.

Results of the single-subject studies were overwhelming favorable across all studies in increasing students' writing performance (see Table 1). Improvement rate difference ranged from 0 to 100%, with all studies but one resulting in IRD over 75%. Effect sizes in the group design studies ranged from -0.39 to 6.92 (see Table 2). The investigation by Cuenca-Sanchez et al. (2012) resulted in large effect sizes for all variables. The investigation by Lane et al. (2011) resulted in effect sizes across variables ranging from no effect to a large effect of 1.66. The investigation by Harris et al. (in press) resulted in negative effects to a large effect of 3.54. Harris et al. (in press) reported data for both typical students and students with behavioral challenges. In general, the students with behavioral challenges were more responsive to persuasive writing instruction while the typical students were more responsive to narrative instruction.

Nine studies reported measures of writing maintenance over time, ranging from 2 to 11.5 weeks following intervention. Maintenance varied by student across studies. In general, while gains in writing were not fully maintained at maintenance checks, gains

Table 1

*Improvement Rate Differences of SRSD Single-Subject Studies*

Study	Variable	IRD		
Lane, Graham, Harris, Little, Sandmel, & Brindle (2010)	Story Elements Ext	IV: 96.43%	Post-IV: 92.86%	
	Story Elements Int	IV: 87.50%	Post-IV: 91.676%	
Lane, Harris, Graham, Weisenbach, Brindle, & Morphy (2008)	Story Elements	100%		
Little, Lane, Harris, Graham, Story, & Sandmel (2010)	Story Elements Ext	IV: 100%	Maint: 100%	
	Story Elements Int	IV: 100%	Maint: 100%	
Mason, Kubina, Valasa, & Cramer (2010)	Essay Elements	IV: 25.71%	Post IV: 24.00%	Maint: 0.00%
	Quality	IV: 97.14%	Post IV: 84.00%	Maint: 60.00%
	Length	IV: 22.86%	Post IV: 8.00%	Maint: 0.00%
Mason & Shriner (2008)	Essay Elements Younger	IV: 100%	Post IV: 77.78%	Maint: 100%
	Essay Elements Older	IV: 100%	Post IV: 100%	Maint: 100%
Mason, Snyder, Sukhram, & Kedem (2006)	Oral Retells	Post IV: 85.19%	Maint.: 83.33%	
	Written Retells	Post IV: 100%	Maint.: 100%	
Mastropieri et al. (2009)	Essay Elements	Train: 88.75%	Post IV: 100%	Maint: 100%
	Quality	Fluency: 100%	Gen: 75%	
Mastropieri et al. (2012)	Essay Elements	Post IV: 100%	Maint: 100%	Gen: 100%
		Fluency Maint: 100%	Fluency Gen: 100%	Gen: 100%
	Quality	Post IV: 100%	Maint: 100%	Gen: 100%
		Fluency Maint: 100%	Fluency Gen: 100%	

*Note.* Ext = Participants at-risk Externalizing behaviors, Int = Participants at-risk for Internalizing behaviors, IRD = Average Improvement Rate Difference, Older = older study participants, RA = researcher administered, TA = teacher administered; Younger = younger study participants; 3: IV = Intervention, Gen = Generalization, Maint = Maintenance.

did maintain over baseline levels. Six studies assessed generalization of writing strategy use and/or writing skills. Little et al. (2010) took anecdotal records of generalization and found many students reported and showed evidence of using their persuasive writing strategies in other settings. Mastropieri et al. (2009) assessed generalization via strategy interviews to determine if students were using the strategy outside of writing instruction

Table 2

*Effect Sizes of SRSD Group Design Studies*

<b>Study</b>	<b>Variable<sup>2</sup></b>	<b>Effect Size</b>	<b>Variable</b>	<b>Effect Size</b>	
Cuenca-Sanchez, Mastropieri, Scruggs, & Kidd (2012)	Words	2.37	Transition Words	5.63	
	Sentences	4.16	Essay Parks	2.50	
	Paragraphs	6.92	Quality	2.83	
Harris et al. (in press)	<b>Typical Students Narrative</b>		<b>Students with BC Narrative</b>		
	Elements	1.06	Elements	0.48	
	Quality	1.27	Quality	0.22	
	Word Count	0.28	Word Count	-0.33	
	Transition Words	0.93	Transition Words	-0.39	
	AET	1.52	AET	0.74	
	<b>Typical Students Persuasive</b>		<b>Students with BC Persuasive</b>		
	Elements	0.46	Elements	1.59	
	Quality	1.58	Quality	3.54	
	Word Count	-0.10	Word Count	1.59	
	Transition Words	1.94	Transition Words	2.93	
	AET	0.27	AET	-0.11	
	Lane et al. (2011)	<b>Persuasive RA</b>		<b>Narrative RA</b>	
		Elements	1.28	Elements	1.12
Quality		1.66	Quality	1.20	
Word Count		1.08	Word Count	0.57	
<b>Persuasive TA</b>		<b>Narrative TA</b>			
Elements Quality		0.00	Elements Quality	1.04	
Word Count		0.09	Word Count	0.29	
AET		0.54	AET	0.28	
		0.84		0.54	

*Note.* AET=Academic engaged time, BC=behavior challenges, RA=researcher administered, TA=teacher administered.

as well as via writing probes. Mason et al. (2010) used the *Writing Fluency* subtest of the *Woodcock Johnson III Test of Achievement* as a measure of generalization of writing skills to an alternate writing task. Cuenca-Sanchez et al. (2012) administered a surprise writing prompt with a choice of writing about either a science or social studies topic two days after maintenance (total of two weeks and two days post intervention). Four studies examined the effect of SRSD on behavioral dependent variables. Harris et al. (in press)

and Lane et al. (2011) observed increases in academic engaged time and decreases in problem behavior. Mastropieri et al. (2009) and Mastropieri et al. (in press) observed increases in on-task behavior during writing following intervention.

### **Additional Quality Indicators**

Quality indicators of treatment fidelity, social validity, and inter-observer agreement were reported across students. Treatment fidelity was conducted by an observer who was a member of the research staff in all of the studies, ranging from 27% to 75% of sessions. In addition to outside observers, seven of the studies also reported teacher self-report of treatment fidelity for 100% of sessions. Finally, one study also conducted inter-observer agreement of treatment fidelity for 33% of sessions. Using these methods, all studies reported high levels of treatment fidelity (e.g., 94.44% to 100%).

Social validity assessment was reported in all of the studies. Six of these studies reported social validity of the intervention as measured by responses from both the student and teacher perspectives. The remaining five studies evaluated social validity from the students' perspective only. Social validity was assessed using both interviews (N = 5) and rating scales (N = 4) with one study using both methods and the remaining study using students' response to a writing prompt. Six studies assessed social validity both before and after intervention while the remaining five studies assessed social validity following intervention. In general, both teachers and students found SRSD to be an acceptable intervention for improving writing performance.

Reliability or interobserver agreement of all writing dependent variables was reported in all studies, ranging in frequency from 25% to 100% written responses. In all

studies, except one, reliability was assessed for over 90% of the written responses. Interrater agreement ranged from 73% to 100% agreement. In addition to assessing reliability, all studies reported training scorers on scoring procedures to criterion prior to assessment for intervention purposes. Interobserver agreement of on-task behavior was reported by the studies measuring behavioral dependent variables, ranging from 25% to 100% of observations. Interobserver agreement ranged from 94% to 98% agreement. Interobserver agreement of treatment fidelity was reported by Cuenca-Sanchez et al. (2012) with 100% agreement across 33% of sessions and Lane et al. (2011) with 87.79% (narrative) and 88.07% (persuasive) agreement across 33% of sessions.

### **PBIS Framework**

Eight of the studies reported implementation within three-tiered models of PBIS. Mason et al. (2006), Mason et al. (2008), and Mason et al. (2010) reported via personal communication that they took place within three-tiered models or within a school implementing a school-wide behavioral support system. Therefore, all studies took place within schools implementing PBIS. Only two studies reported at which tier the intervention was implemented. Harris et al. (in press) implemented classwide at the primary tier. Lane et al. (2011) implemented in small groups at the secondary tier. This systematic behavioral support is an important consideration when evaluating the success of an intervention with students at-risk for or with E/BD, as there were structures in place to promote positive behavior, allowing teachers to more readily focus on academics.

### **Discussion**

Students with E/BD may possess academic deficits in the area of writing (Kauffman, 2001; Reid et al., 2004). Because of these deficits, there is a need to find

evidence-based strategies that can address the unique needs of students at-risk for or with E/BD in the area of writing. Using the guidelines outlined by Horner et al. (2005) for identifying evidence-based practices in special education, the body of literature on using SRSD with individuals at-risk for or with E/BD is indeed an evidence-based practice for use with this population. Specifically, there are more than five single-subject studies with over 20 total participants; the research has been conducted by more than three different researchers in three different geographical locations (Southeast, Midatlantic, and Northeast).

### **Future Directions for the Field**

Despite the promising results of the existing research base of using SRSD with students with and at-risk for E/BD, there are clear needs for further research in this area. To begin, SRSD has been investigated with students with E/BD in grades 2 to 8. However, no published studies have included high school students. Given that writing deficits occur across the grade span (Nelson et al., 2004) as well as the post-secondary outcomes related to poor writing achievement (National Commission on Writing, 2004), more research is needed investigating the efficacy of SRSD with our oldest students with or at-risk for E/BD. Additionally, the current body of research has been conducted in schools that are inclusive as well as self-contained. However, no research has been conducted in more restrictive environments that serve students with E/BD – alternative education, residential facilities, and juvenile justice settings using 24/7 models. Future researchers should evaluate whether or not SRSD can be implemented with fidelity and result in writing gains in these more restrictive settings. Finally, as detailed below, future researchers should consider issues related to writing genre, interventionists, dependent

variables, and additional quality indicators. In addition, future researchers should continue to implement SRSD within three-tiered models of PBIS.

**Writing genre.** The eleven studies included in this review involved three genres of writing, including expository (N = 1), narrative (N = 2), persuasive (N = 6), and narrative and persuasive (N = 2). Given the unique qualities of each of these genres of writing, and nuances of the SRSD lessons and mnemonics for each genre, replication is needed in all areas. In addition, no research has been conducted on planning and revising in isolation with students at-risk or with E/BD, as has been investigated with students with LD (e.g., De La Paz & Graham, 1997; Graham & MacArthur, 1988), and therefore represents options for future researchers. Finally, as mandates posed by the No Child Left Behind Act of 2001 have placed an increased emphasis on standardized assessment, future researchers should examine the efficacy of SRSD for increasing standardized writing assessment scores (De La Paz, 1999) for students with or at-risk for E/BD.

**Interventionists.** Odom, Brantlinger, Gersten, Horner, Thompson, and Harris (2005) provided an overview of the four stages of the research process (i.e., Stage 1: preliminary ideas, hypotheses, observations, and pilot work; Stage 2: controlled laboratory experiments and classroom-based demonstrations and design experiments; Stage 3: randomized classroom trial studies; Stage 4: informed classroom practice) that should be included to promote research informing classroom practice. Stage 3 involves conducting research in naturalistic settings administered by natural interventionists (i.e., teachers). All of the current studies using SRSD with students with E/BD except for two (Cuenca-Sanchez et al., 2012; Harris et al., in press) have used research staff to implement/teach the intervention. While this is a natural part of Stage 2 of the research

process when determining that an intervention is evidence-based (Odom et al., 2005), future researchers should evaluate the effectiveness of SRSD with students with or at-risk for E/BD when their classroom teachers serve as the provider of the SRSD intervention. Using teachers as interventionists is of particular importance in settings, inclusive and self-contained schools, as it suggests researcher-implemented SRSD interventions can be successful. This is a necessary step in bringing evidence-based practices into the classroom (Odom et al., 2005).

**Dependent variables.** As noted in the results, the most common dependent variables used to measure responsiveness to SRSD interventions represent a wide range of skills involved in the writing process – elements, length, and quality. These dependent variables are essential to evaluating the quality of students’ writing. Future researchers also should consider inclusion of measures assessing both planning and revision as seen in research with LD populations. For example, De La Paz and Graham (1997) used measures of both planning and transformation of planning to evaluate students’ ability to use the SRSD model to plan before writing. Likewise, Graham and MacArthur (1988) used measures of both number of revisions and purpose of revisions to evaluate students’ use of revision strategies to enhance their writing.

Four studies to date has evaluated whether SRSD instruction also results in improvements in the behavior of students with E/BD (Harris et al., in press; Lane et al., 2011; Mastropieri et al., 2009, in press). Future researchers should consider continuation of this practice in measuring impact on academic engaged time and problem behaviors, as students with or at-risk for E/BD are less academically engaged in the classroom than their peers, both typically developing and with disabilities (Wagner & Cameto, 2004) and

display higher rates of problem behavior (Cullinan et al., 2003). Future researchers also may want to examine the impact of SRSD instruction on maladaptive behaviors displayed by students with E/BD that may affect their relationships with teachers and peers (Kauffman, 2001) as these behaviors may impact the academic engagement and academic success of students with E/BD.

**Additional quality indicators.** Eight of the studies in this review used single-subject methodology to evaluate outcomes. The guidelines of quality indicators outlined by Horner et al. (2005) indicate that in addition to adequately describing the participants, procedures, and design, effective evaluation tools such as treatment fidelity, social validity, and reliability, are needed to facilitate quality research when evaluating the evidence-base for an instructional practice. All of the studies in this review included procedures and results for the aforementioned areas indicating that SRSD can be implemented in inclusive and self-contained settings serving E/BD students. Future researchers should continue this essential practice and consider assessing treatment fidelity from both the interventionist (i.e., checklists of SRSD lesson components) and the researcher (i.e., direct observation or videotaped sessions) perspectives (Gresham, MacMillan, Beebe-Frankenberger, & Bocian, 2000), similar to the procedures outlined by Mason and Shriner (2008).

Likewise, all studies in this review assessed social validity either pre- and post- or only post-intervention of either the student or the teacher and student using rating scales, interviews, and written prompts. Future researchers should consider using a model similar to the one reported by Lane et al. (2008), which used a rating scale to measure social validity from both the teacher and student perspectives at both pre- and post-

intervention phases. This model allows the researcher to receive feedback from multiple stakeholders and provides quantifiable measures of social validity that can be evaluated for change from prior to the intervention to after implementation.

Finally, all studies in this review assessed interobserver agreement of all writing dependent variables from 25% to 100% of the time. All studies were in line with current research conventions (minimum of 20% of sessions, with 33% preferred; Kennedy, 2005). However, given that many researchers question the reliability and validity of constructed responses (Kulikowich, Mason, & Brown, 2008), future researchers may want to consider assessing reliability a minimum of 50% of writing samples, and consider increasing this percentage if reliability dips below 80%. Further, all studies in this review conducted thorough training processes, so that scorers were trained to criterion prior to assessment for intervention purposes. Assuredly, this practice contributed to the high interrater reliability reported across studies. Future researchers should continue this tradition to increase the reliability and accuracy of measurement of dependent variables to best measure change as a result of intervention.

**PBIS framework.** All of the studies included in this review took place within schools implementing school-wide PBIS. This systematic support is an important consideration when evaluating the success of the intervention with students with or at-risk for E/BD, as there were structures in place to promote positive behavior allowing teachers to more readily focus on academics. Future researchers should continue to conduct SRSD interventions within this framework, and include descriptions of interventions at each tier, including entrance and exit criteria (Ennis & Swoszowski, 2011; Lane et al., 2009). For example, Lane et al. (2008, 2010) used systematic

screening procedures as part of the school setting's PBIS plan to identify students at-risk for behavioral problems and poor writing. Only two of the studies reported at which tier the intervention took place (i.e., primary, secondary; Harris et al., in press; Lane et al., 2011). Future researchers should provide information about what capacity SRSD is being used within the school environment (e.g., at the secondary-tier), as students with E/BD may require both secondary- and tertiary- tiers of academic, behavioral, and social support in both inclusive and more restrictive settings (Jolivette & Nelson, 2010). In addition, before implementation of an secondary-tier intervention or an academic intervention that is not part of the primary PBIS plan, future researchers should consider using a measure such as the School-wide Evaluation Tool (SET; Horner, Todd, Lewis-Palmer, Irvin, Sugai, & Boland, 2004) to measure fidelity of the primary PBIS plan.

### **Conclusion**

Based on the current body of literature investigating the efficacy of SRSD with students with or at-risk for E/BD, this practice is considered evidence-based. This is encouraging given the significant need for evidence-based academic interventions for these students. Despite the promising state of SRSD research, further investigation is needed especially at the high school level and in alternative education facilities.

Likewise, future researchers should continue to build on the strength of the current research base by conducting research focusing on teachers as interventionists, using expanded dependent variables, continuing the use of quality indicators, and continuing investigations within three-tiered models of PBIS.

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CHAPTER 2  
USING SELF-REGULATED STRATEGY DEVELOPMENT TO INCREASE THE  
WRITING AND ENGAGEMENT OF STUDENTS WITH  
EMOTIONAL/BEHAVIORAL DISORDERS IN A RESIDENTIAL FACILITY

Students with E/BD have academic deficits in the areas of reading, writing, spelling, and mathematics (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004) and are less academically engaged in the classroom than their peers (Wagner & Cameto, 2004). Because of the unique needs of students with E/BD, many are being served in more restrictive settings, such as residential facilities. Students with E/BD represent 33% to 75% of those served in alternative educational settings (U.S. Department of Education, 2002). The goal of placement in restrictive settings is to provide an appropriate setting for instruction and later transition to a less restrictive environment (Simonsen, Britton, & Young, 2010). However, research in alternative settings is sparse, and future investigations are needed (Tobin & Sprague, 2000).

In terms of academic outcomes for students with E/BD, researchers have shown that these students have substantial deficits that remain stable over time in the areas of reading, mathematics, and written expression (Nelson, Benner, Lane, & Smith, 2004). Despite this fact, there is a paucity of research in academic interventions for students with E/BD, especially in the area of writing (Little et al., 2010). This is perhaps because writing is a complex activity requiring multiple cognitive processes (Graham & Harris, 2003). The National Assessment of Educational Progress writing assessment of 2007 found that fewer than 6% of students with disabilities in grades 8 and 12 demonstrated proficient writing skills (Institute of Education Sciences, 2007). Additionally, writing is

required for most living-wage jobs with both public and private employers citing a need for writing proficiency for occupational success (National Commission on Writing, 2004).

Despite these facts, few researchers have focused on writing interventions with students with E/BD (Ennis & Jolivette, 2012). Students with difficulties in the area of writing have difficulty generating and organizing ideas, setting personal writing goals, self-monitoring written performance, and revising written work (Harris & Graham, 1996). One evidence-based intervention that addresses all of these difficulties is self-regulated strategy development (SRSD).

### **Self-Regulated Strategy Development**

SRSD is designed to address difficulties with writing as well as attitudes, beliefs, and motivation related to the writing process. The SRSD model includes procedures for goal setting, self-monitoring, self-instruction, and self-reinforcement, and can be generalized to other settings and maintained over time once taught to mastery in whole-class, small group, or individual settings (Harris, Graham, Mason, & Friedlander, 2008). The six-stage SRSD model is well-aligned with interventions successful in improving the academic and behavioral skills of students with or at-risk for E/BD, as it incorporates self-monitoring and goal setting, strategies shown to be effective for students with E/BD (McDougall, 1998; Mooney, Ryan, Uhing, Reid, & Epstein, 2005).

**Stage 1: Develop background knowledge.** Stage 1 of SRSD includes developing preskills/background knowledge needed to the genre of writing being taught. Teachers lead student(s) through reading examples of the genre of writing and teach any related vocabulary (e.g., arguments and counterarguments in persuasive writing). During this

stage, the teacher also introduces the skills of goal setting and self-monitoring (Harris et al., 2008).

**Stage 2: Discuss it.** Stage 2 includes discussing the benefits of being a good writer with particular focus on the genre being taught. The teacher discusses the benefits of using a strategy to have a systematic plan to use when writing. Then the teacher leads the students in examining their current writing performance with regard to the essential elements of the targeted genre of writing. This allows the students to self-monitor their progress over the course of the intervention. During this stage, the teacher introduces the mnemonic strategy to be used and helps students identify opportunities to use the strategy (Harris et al., 2008). These opportunities may include writing for other subject areas (i.e., science and social studies) using expository writing (Mason, Snyder, Sukhram, & Kedem, 2006) or self-advocating using persuasive writing (Cuenca-Sanchez, Mastropieri, Scruggs, & Kidd, 2012).

**Stage 3: Model it.** During Stage 3, the teacher uses the strategy by modeling self-talk while moving through the writing process. Modeling of self-talk, including self-instructions, self-questioning, and self-reinforcement, serves as a verbal demonstration of the process that skilled writers engage in internally. Self-talk models should address all skills in the writing process including: defining a problem, focusing attention, planning, strategy, and statements. The modeling of these behaviors should be natural and enthusiastic by the teacher. The meta-scripted SRSD lessons include modeling scripts to assist teachers in addressing all components while still allowing teachers to adapt the presentation to fit their teaching style and the needs of their students (e.g., Harris et al., 2008).

**Stage 4: Memorize it.** Stage 4 involves memorizing the mnemonic device to guide the student(s) through the entire writing process. Memorization also involves the student gaining a full understanding of the meaning of each step of the mnemonic. There are many mnemonics found in the SRSD literature. An example mnemonic for persuasive writing is STOP and DARE, which stands for **S**uspend judgment, **T**ake a side, **O**rganize ideas, **P**lan more as you write and **D**evelop your topic sentence, **A**dd supporting ideas, **R**eject an argument for the other side, **E**nd with a conclusion. An example mnemonic for narrative writing is POW + WWW What2 How2, which stands for **P**ick my idea, **O**rganize my notes, **W**rite and say more, **W**ho is the main character? **W**hen does the story happen? **W**here does the story happen? **W**hat does the main character do? **W**hat happens then? **H**ow does the story end? **H**ow does the main character feel? An example mnemonic for expository writing is TWA + PLANS, which stands for **T**hink before reading, think **W**hile reading, think **A**fter reading and **P**ick goals, **L**ist ways to meet goals, **A**nd, make **N**otes, **S**equence notes. Teachers may provide additional scaffolded supports and opportunities for practice to students having difficulty memorizing the mnemonic (Harris et al., 2008).

**Stage 5: Support it.** During Stage 5, teachers support student(s) in their use of the strategy during writing. Teachers support student(s) by providing assistance and reminders. This stage continues until the students are able to apply the strategies independently. During this stage, teachers lead students in generalizing the strategy to other settings and writing tasks to promote its maintained use over time. Stage 5 is essential for struggling writers, and may take longer for students who have weakness in the area of writing (Harris et al., 2008).

**Stage 6: Independent performance.** During Stage 6, student(s) should be using the strategy fully independently, thus self-regulating their own writing. At this time, student(s) who are engaging in self-talk orally (as observed by the model) are encouraged to self-talk in their heads as they utilize the mnemonic during the writing process. This stage also involves presenting student(s) with opportunities to generalize the strategy learned (e.g., using the mnemonic for writing in social studies) as well as presenting any needed booster sessions to promote maintenance of strategy use (Harris et al., 2008).

### **Persuasive Writing with Students with E/BD**

Writing is an essential skill especially at the secondary level when students are preparing to transition out of the school environment. A genre of writing that is of particular importance to students at the secondary level is persuasive writing because it has potentially generalizable benefits, as it may contribute to improved self-determination (Cuenca-Sanchez et al., 2012). Given the academic and behavioral needs of students with and at-risk for E/BD, it is important to note that the majority of studies using SRSD with students with E/BD were implemented in schools implementing school-wide positive behavioral interventions and supports (PBIS; Ennis & Jolivette, 2012). PBIS is a three-tiered, coordinated model of support designed to prevent and reduce the occurrence of problem behaviors by providing support at universal (schoolwide), secondary (small group), and tertiary (individualized) levels (Jolivette & Nelson, 2010). This level of behavioral support is imperative when implementing academic interventions in restrictive settings for students with E/BD.

Four studies have focused on using the SRSD model to teach persuasive writing to students with E/BD at the secondary level (Cuenca-Sanchez et al., 2012; Mason,

Kubina, Valasa, & Cramer, 2010; Mastropieri et al., 2009; Mastropieri et al., in press) involving a total of 40 students. All four studies used the mnemonic POW + TREE, which stands for **T**opic sentence, **R**easons, **E**nding, **E**xamine. Cuenca-Sanchez et al. (2012) used a pre-, post-test design to compare the performance of 11 students with E/BD receiving SRSD instruction with that of a 10-student control group of students with E/BD. Intervention was conducted classwide led by classroom teachers and resulted in large effect sizes (range = 2.37 to 6.92). At post-intervention, they trained the 11 intervention students to write with greater speed and fluency during quick write activities where students wrote essays with all components (i.e., thesis, supporting arguments, counterarguments, and conclusion) in 10 minutes or less. Students used the SRSD model to successfully produce essays with all essential elements in these brief 10-minute sessions.

Mason et al. (2010) used a multiple-probe multiple baseline design to demonstrate a functional relation between writing achievement and SRSD instruction delivered by research staff on an individual basis. The intervention took place in a self-contained school for students with E/BD. After SRSD instruction, teachers led students through quick write activities to promote writing fluency. Writing skills improved on brief essay tasks and were shown to have generalized to the *Writing Fluency* subtest of the *Woodcock-Johnson III Test of Achievement*.

Mastropieri et al. (2009) also used a multiple-probe multiple baseline to demonstrate a functional relation between writing achievement/academic engagement and SRSD instruction delivered by research staff to groups of three students in a public

day school for students with E/BD. Effects maintained over time and generalized to other settings.

Finally, Mastropieri et al. (in press) used a multiple-probe multiple baseline design to demonstrate a functional relation between SRSD instruction delivered by teachers or research staff to students in groups of 2 or 3 and writing achievement/academic engagement in a traditional public middle school special education classroom. After SRSD instruction, teachers led students through quick write activities to promote writing fluency. All students demonstrated improved writing over baseline at post-intervention and post-fluency instruction and at maintenance and generalization checks.

While all four studies yielded positive effects, there are limitations within this body of literature. For example, no studies include high school participants. In addition, despite the fact that researchers have documented the need for providing evidence-based interventions within restrictive settings (Tobin & Sprague, 2002), there are currently no investigations implementing SRSD within residential facilities for students with E/BD. Residential facilities provide 24/7 educational services and treatment, and are being used increasingly for students with challenging behaviors (Unruh, Bullis, Todis, Waintrup, & Atkins, 2007) and with E/BD (Carver & Lewis, 2010). Finally, two of these studies used teachers as interventionists (Cuenca-Sanchez et al., 2012; Mastropieri et al., in press). Cuenca-Sanchez et al. (2012) had teachers lead instruction in an 11-student classroom. Mastropieri et al. (in press) used teachers to lead instruction in small group settings. Additional research is needed to determine if teachers in residential facilities can provide instruction classwide with fidelity (Mastropieri et al., in press).

### **SRSD Instruction Using STOP and DARE**

One SRSD mnemonic for teaching persuasive writing that has not been widely investigated with students with E/BD is STOP and DARE. STOP and DARE is an ideal mnemonic for use for students with E/BD for several reasons. To begin STOP and DARE mirrors language that is common in mindfulness or anger management training commonly used with students with E/BD (i.e., encouraging students to stop and think, developing possible solutions for both sides in an argument). In addition, STOP and DARE includes elements of persuasive writing, such as including a counterargument that is not a component of the POW+TREE mnemonic. This is essential given that in many states the high school level writing competency tests focus solely on persuasive writing. Further, with the move to common core standards in academic content areas, the mnemonic STOP and DARE includes essential elements required for writing an argument, which is a standard element of the common core. Finally, as with POW+TREE there is research to suggest that STOP and DARE is effective for students with learning disabilities (e.g., Kiuvara, O'Neill, Hawken, & Graham, 2012), suggesting that investigations are needed with students with E/BD.

To date, there are four studies investigating the use of STOP and DARE (or some version of the mnemonic) to teach persuasive writing. De La Paz and Graham (1997) used the mnemonic to teach 42 5<sup>th</sup> through 7<sup>th</sup> graders with learning disabilities to write persuasive essays through writing or dictation. Instruction was delivered to small groups of 2-3 students assigned to one of four groups: control written, control dictation, SRSD written, SRSD dictation. STOP and DARE was effective for teaching persuasive writing and the advanced planning stage (STOP) was essential when dictation was used.

Chalk, Hagan-Burke, and Burke (2005) used the mnemonic DARE to teach persuasive writing to 15 10<sup>th</sup> graders with learning disabilities. Instruction was delivered to students in small groups in a resource classroom. The intervention resulted in increases in length and quality of students' writing and these results maintained over time and generalized to essay writing history.

Kiuhara, O'Neill, Hawken, and Graham (2012) added the mnemonic AIMS to the STOP and DARE model in an investigation with six high school students with high incidence disabilities (including one with E/BD). AIMS stands for **A**ttract the reader's attention, **I**dentify the problem of the topic so the reader understands the issues, **M**ap the context of the problem or provide background information needed to understand the problem, **S**tate the thesis so the premise is clear. Students were taught STOP, AIMS, and DARE in dyads using a multiple baseline across pairs of students. The researchers suggested a functional relation between the intervention and the number of essential and functional essay elements as well as an increase in overall quality of the responses. In addition, students increased time spent planning and writing.

As with research conducted with students with E/BD using the mnemonic POW+TREE, the research using the SRSD mnemonic STOP and DARE is favorable. It is promising that the STOP and DARE research literature included participants at the high school level, additional future research using STOP and DARE is needed that (a) includes additional participants with E/BD (b) investigates STOP and DARE within the context of PBIS and (c) investigates STOP and DARE in an alternative education setting.

## **Purpose**

The purpose of this study was to extend the line of SRSD inquiry by evaluating the effects of an SRSD model for teaching persuasive writing to secondary students in a residential school for students with E/BD. This study sought to answer the following questions: (1) Did SRSD instruction result in change in student writing achievement? (2) How did SRSD instruction affect writing performance and weekly growth (elements, correct word sequence, and quality)? (3) How did SRSD instruction affect academic engagement (direct observations and office discipline referrals) and weekly growth? (4) How did student-level variables (age, risk status, gender, setting events, behavior patterns) predict response to SRSD instruction? (5) Was SRSD implemented by classroom teachers with fidelity with secondary students with E/BD in residential facilities? and (6) Was SRSD a socially acceptable intervention for use with secondary students with E/BD in residential facilities?

Based on existing research using SRSD with middle-school students, it is hypothesized that instruction resulted in statistically significant gains in writing achievement from pre- to post-assessments. Likewise, it is hypothesized that weekly measures of writing performance and academic engagement increased over time as compared to baseline. Based on knowledge of individual student variables, it is hypothesized that student risk and behavior patterns (externalizing/internalizing) was a statistically significant predictor of writing growth over time whereas age and gender was not. Finally, based on research conducted in self-contained schools for students with E/BD, it is hypothesized that SRSD will be implemented with fidelity and found acceptable to both teacher and student participants.

## Method

### Setting

Student and teacher participants were selected from an urban residential school in the Southeast for students with E/BD in first through twelfth grades. The school is accredited by the Southern Association of Colleges and Schools, serves up to 74 students at a time, and provides educational and psychological services to students as needed 24/7. Classrooms are led by special education teachers assisted by one to two behavior specialists (adult-student ratio of 2:10 to 3:10). Students are served in mixed-grade-level classes (i.e., middle; high). This school was in its sixth year of implementation of PBIS (Jolivette et al., 2012). The school-wide initiative includes procedures for teaching (videos, lesson plans, posters), reinforcing (STAR coupons, reward store), and monitoring (School-wide Information Systems: SWIS) their behavioral expectations. Prior to the start of the study, the School-wide Evaluation Tool (SET; Horner et al., 2004) was administered. A score of 80% or higher overall and on the teaching expectations subscale signifies high fidelity of school-wide PBIS (Horner et al., 2004). This setting was currently implementing school-wide PBIS with 95.36% fidelity overall and 80% fidelity on the teaching expectations subscale. Baseline writing and SRSD lessons took place during language arts classes, which met for 50 minutes each day. Writing lessons took place for approximately 40 minutes two days a week during both baseline (4 weeks) and intervention (8 weeks) with a third day used for weekly writing probes and instructional booster sessions.

This setting was selected because it allowed investigations using SRSD with students with E/BD to be extended to residential facilities serving students with E/BD

and students at the high school level. Additionally, this school currently has a PBIS plan in place. To date, almost all investigations using SRSD with students with and at-risk for E/BD have taken place within schools implementing PBIS (Ennis & Jolivette, 2012). This systematic behavioral support is an important consideration when conducting academic interventions with students with E/BD, as structures that promote positive behavior more readily allow teachers to focus on academics (Ennis & Jolivette, 2012).

### **Participants**

**Student participants.** Participants were 44 middle and high school students enrolled in the school during baseline, including 28 students (63.64%) currently receiving services for E/BD (see Table 3). Of these students, 24 (54.55%) were male, 29 (65.91%) were Caucasian, and 26 (59.09%) were in high school. All students enrolled in one of six language arts classes at the secondary level (2 middle, 4 high) were invited to participate. Since instruction took place classwide, all students were considered for inclusion in the intervention study. The research design allowed for each individual participant's data to be compared to his/her previous data. Therefore, students were not excluded from the study based on academic achievement. Students were only excluded from data analysis if they enrolled in the school after baseline data collection was complete ( $N = 8$ ) or a student withdrew prior to the start of the intervention, but was present for baseline data collection ( $N = 4$ ). These students were only excluded from analysis because they did not have data from both phases (baseline and intervention). Students who enrolled in the school after the baseline phase still participated in instruction but were not included in analyses. In order to better understand individual differences, descriptive writing

Table 3

*Student Participants*

<b>Variable</b>	<b>Level</b>	<b>N</b>	<b>%</b>
Gender	Male	24	54.55
	Female	20	45.45
Ethnicity	Caucasian	29	65.91
	African American	13	29.55
	Other	2	4.55
Grade Level	Seventh	8	18.18
	Eighth	10	22.73
	Ninth	4	9.09
	Tenth	16	36.36
	Eleventh	3	6.82
	Twelfth	3	6.82
ED Special Education Eligibility		28	63.64
Systematic Screening for Behavioral Disorders	Critical Externalizers	22	50.00
	Critical Internalizers	18	40.91
Strength and Difficulties Questionnaire	Abnormal Total Difficulties	33	75.00

assessment data were collected prior to the onset of the study. In order to be included in the study, consent was obtained from teachers and supervisors and assent was obtained from students. Teachers provided researchers with demographic data on each student using the form included in Appendix B.

Using growth curve modeling, the level 1 sample size (observations) was of greater concern than the level 2 sample size (participants), as observations are nested

within participants. Statisticians recommend a minimum of 25 participants when using growth curve modeling (Hamilton, Gagne, & Hancock, 2003). Since attrition is an issue in this setting, given that students receive services there for varying amounts of time, all students were invited to participate to ensure the initial sample size was large enough. Further, growth curve modeling allows for missing data within participants.

**Teacher participants.** Participating teachers were three highly-qualified special education teachers currently teaching a language arts class at the middle and/or high school level (see Table 4). Teacher participants served as the interventionists for each class. Teachers consented to participate in the study and in training on SRSD instruction to criterion prior to the onset on the intervention. Teachers were allowed to vary on key demographics such as race and years of teaching experience.

## Materials

**Classroom materials.** This study required standard classroom equipment supplied by the school. Each teacher's classroom was equipped with a smart board

Table 4

### *Teacher Participants*

<b>Teacher</b>	<b>Age</b>	<b>Gender</b>	<b>Grade Level</b>	<b>Race/ Ethnicity</b>	<b>Highest Degree Earned</b>	<b>Teaching Experience</b>
Nic	32	Female	High	African American	Masters	5.5 yrs
Gene	38	Male	High	Caucasian	Masters	11 yrs
Paul	69	Male	Middle/ High	Caucasian	Bachelors	9 yrs

connected to a computer and a digital projector. In addition, on weekly writing assessment days (Fridays), the assessments were completed using AlphaSmart® Neoboards, which are personal word processing units that have full keyboard and a small screen. In addition, Neoboards have a spell check function that students used to review their work.

**SRSD lesson materials.** All materials needed for teaching SRSD lessons were photocopied and placed in a binder for each class period for each teacher. Lessons were adapted from the Harris et al. (2007) text where STOP and DARE is divided into five lessons. Each lesson was further divided into 40 minutes of instructional activities, including 10 minutes for an introduction and lesson wrap-up each day. Each daily lesson was taught to criterion – measured by either teacher completion of lesson steps or student mastery of lesson content, depending on the stage of instruction (see SRSD intervention procedures for a description of how criterion for each daily lesson was assessed). For each session, the teacher received (a) a formal lesson plan, (b) an SRSD fidelity checklist to serve as a reminder of lesson components, (c) all teacher materials for the lesson, and (d) all student materials for the lesson. Teacher materials included: dry erase markers, STOP chart, STOP and DARE chart, STOP and DARE checklists, STOP and DARE cue cards, student essays, essay prompts, sample essays, and self-statements worksheet. Student materials included: blank STOP chart, blank STOP and DARE chart, STOP chart, STOP and DARE chart, STOP and DARE checklists, STOP and DARE cue cards, student essays, essay prompts, sample essays, self-statements worksheet, self-monitoring checklists, student graphs, pens, and pencils. If student copies were needed, these also

were placed in the binder for each day's lesson. See Appendix C for a sample lesson along with needed materials.

**Assessment materials.** A variety of measures were collected on students for the purposes of obtaining descriptive data as well as measuring responsiveness to the intervention as compared to baseline conditions. All of these materials were provided to the teachers at pre- and postassessment timepoints. Writing probes were assessed weekly. Each week, teachers were provided with enough copies for their class. Full descriptions are provided for each assessment in the data collection section.

### **Training**

**Teacher training.** Teachers were trained to implement the SRSD model as a group during a working lunch (2 hours) professional development seminar prior to the start of the intervention. During the training, research staff explained the foundations of SRSD and presented relevant research illustrating its effectiveness. Research staff also provided an overview of the intervention procedures and modeled the instructional procedures for teachers. Following this training, research staff met with each teacher individually for one hour to answer any questions about the implementation of SRSD and for teachers to practice implementing key components of the intervention while the research staff observed and provided feedback. All teachers implemented the essential components of a lesson with 90% accuracy or better after their group and individual training sessions. Teachers also were given checklists of essential elements to be included in each lesson and a proposed schedule for instruction. These checklists were used to remind teachers of the essential components as well as to monitor their own treatment fidelity once they began teaching the lessons. Teachers were told that booster

training sessions would be provided once the intervention began if research staff observed low fidelity. Low fidelity was defined as anything below 100% of essential elements for Stages 1 and 2 (see SRSD intervention procedures) and 80% for Stages 3 through 6.

**Data collector training.** Research staff were trained by the primary investigator to score responses to pre- and postwriting assessments and weekly writing probes using mock data samples before scoring actual research data. In addition, research staff were trained to score all behavioral measures (risk status and externalizing/internalizing behavior pattern) using mock data samples before scoring actual research data. Research staff reached 90% agreement with the primary investigator prior to scoring actual data. Once trained, research staff scored all protocols with a minimum of 50% of protocols rescored by a second research staff member independently.

Research staff also reached reliability with the primary investigator in direct observations of academic engagement before collecting actual study data. Mock data were collected by reviewing the behavioral definition for each student and conducting independent and simultaneous live, in vivo observations, followed by a point-by-point comparison of each observation session by interval. Training continued until research staff achieved at least 90% reliability over three consecutive observations.

### **Dependent Variables**

**Broad Written Language subtests of the Woodcock Johnson III.** The Writing Fluency and Writing Samples of the *Woodcock Johnson Tests of Achievement, Third Edition (WJ-III;* Woodcock, McGrew, & Mather, 2001) were used to obtain descriptive information on the writing achievement of all students the week before the start of

baseline data collection. This assessment also served as a pre- and posttest measure of student writing achievement. Tests were administered and scored according to the directions and guidelines of the manual (Mather & Woodcock, 2001). *WJ-III* subtest yields a standard score with an average of 100 and a W score with a range of 0 to 1000; these scores were used in addition to raw scores for comparison of pre- to postintervention change. The Writing Fluency subtest measures skill in writing simple sentences quickly within a 7-minute time limit. Students start at the first item of this subtest regardless of age. It has a median reliability of .86. The Writing Samples subtest requires participants to produce written sentences with increasing difficulty in terms of passage length, vocabulary, grammatical complexity, and concept abstraction. Students in grades 7 and above are administered items 13 to 24 on this subtest. It has a median reliability of .84 (Mather & Woodcock, 2001). Both subtests are available in forms A and B. Therefore, they can be reliably administered in alternate forms to measure responsiveness to an intervention at two timepoints within a given semester as pre- (A) and postform (B). See Appendix D for samples of the Woodcock-Johnson writing tests. Reliability of scoring was completed for 50% of pretest data and 51.85% of posttest data by a research assistant. Copies were made prior to scoring so that each researcher could view the student's work independently. Scorers met to assess interrater reliability and discuss disagreements until discrepancies were resolved (Mastropieri, 2009).

**Persuasive writing prompts.** Persuasive writing prompts, including and similar to those outlined in the SRSD text (Harris et al., 2008), were administered weekly. All prompts required students to take a position, formulate an argument, and provide support for their argument. An example writing prompt is "Should teens be required to do

chores?” Once an adequate number of writing prompts were developed they were randomly assigned an order using a random number generator as either a baseline writing prompt, intervention writing prompt, or within-lesson writing prompt. This was done to prevent novelty effects of particular prompt topics from influencing the quality and length of students’ responses. See Appendix E for a completed list and schedule of writing prompts used (Note: Two additional writing prompts were scheduled in the event that teaching the intervention to mastery took longer than 8 weeks. However, intervention probes 9 and 10 were not actually used). Students had up to 30 minutes to write at each administration. All prompts were completed in the classroom on the Neoboards during baseline and intervention. Students use the Neoboards for classroom assignments regularly, so this practice was not novel to the study assessments. Student responses were scored for essay elements, overall quality, and correct word sequences as outlined below. See Appendix F for a sample data summary sheet. Inter-observer agreement (IOA) of scoring was completed for 51.67% of baseline and 50% of intervention data by a research assistant. Copies were made prior to scoring, so that each researcher could view the student’s work independently. IOA between scorers during baseline was as follows: elements 96.13% (range 50 – 100%), quality 94.98% (range 63.64 – 100%), and correct word sequences (CWS) 96.55% (range 77.78 – 100%). Agreement between scorers during intervention was as follows: elements 92.12% (range 50 – 100%), quality, 90.02% (range 56.25 – 100%), and CWS 97.21% (range 78.57 – 100%). Scorers met to compare interrater reliability and discuss disagreements until discrepancies were resolved (Mastropieri et al., 2009).

**Essay elements.** Students' written responses were scored for the number of essay elements. Points were earned as follows: one point for a premise/topic sentence, one point each for supporting reasons, one point each for counterarguments, and one point for a conclusion (De La Paz & Graham, 1997; Mason, Kubina, & Taft, 2011).

**Quality.** Essays were scored in terms of the quality of the written work using a holistic rubric with a 6-point Likert scale (1=lowest, 6=highest) for each of four categories: focus development, organization, fluency, and conventions (Chalk et al., 2005). This rubric yielded a total score ranging from 4 to 24. See Appendix G for the quality rubric.

**Correct word sequences (CWS).** Essays were scored in terms of CWS by marking a carrot between each pair of adjacent accurate words and/or ending punctuation that are acceptable within the context of the phrase. Scoring takes into account spelling, capitalization, punctuation, syntax, and semantics. After the essay has been marked with carrots, a total number of CWS was computed for the essay. For example the following sentence would receive a value of CWS score of 9: “<sup>^</sup>I<sup>^</sup>think<sup>^</sup>students<sup>^</sup>should<sup>^</sup>wear<sup>^</sup>uniforms<sup>^</sup>to<sup>^</sup>school<sup>^</sup>.” This sentence would receive a CWS score of 3: “i think<sup>^</sup>students shoud wear<sup>^</sup>uniforms<sup>^</sup>to scool.” CWS was a valid indicator of written expression (Hosp, Hosp, & Howell, 2007) and has demonstrated reliability in measuring middle school writers' progress over time (McMaster & Campbell, 2008).

**Academic engagement (AE).** Research staff collected direct observation of behavior data weekly during writing instruction (baseline and intervention). Students were randomly assigned to an observation period (i.e., first 10 minutes, second 10 minutes) each week on one of the two days of writing instruction. AE was operationally

defined by research staff in collaboration with teachers as: eyes on teacher, peer contributing to lesson, or materials; in designated area of room; reading/writing to the writing prompts; asking relevant question(s)/engaging in academic talk with teacher, peers, and staff; may appear to be in thought.. Nonexamples included behaviors such as: sleeping during instruction, engaging in nonacademic talk, verbally refusing to complete tasks, eloping the classroom, engaging in activities other than those directed by the teacher (i.e., coloring, reading a book during a writing lesson). Since the goal of the intervention was to increase academic engagement, 10-second whole-interval recording was used because it tends to underestimate the occurrence of a behavior. Researchers used the Multiple Option Observation System for Experimental Studies (MOOSES; Tapp, Wehby, & Ellis, 1995) loaded onto a handheld computer.

Researchers reached reliability (three sessions with at least 90% agreement) with the primary investigator in direct observations of AE before collecting actual study data. During interobserver agreement (IOA) observations, two researchers completed direct observation recording concurrently but independently of one another. Agreement was calculated using point-by-point agreement or disagreement for each interval. Percentage of agreement was calculated by dividing the total number of agreements by the total number of agreements plus disagreements multiplied by 100. IOA was completed for 34.38% of baseline observations and 38.37% of intervention observations. Average IOA between scorers was 97.88% (range, 91.67 – 100%) during baseline and 97.78% (range, 90 – 100%) during intervention.

**Attendance.** Attendance was taken daily by classroom teachers at the beginning of each intervention class period (Tuesdays and Thursdays). In addition, teachers made a

notation in their grade book if students arrived late or left early. Attendance was coded on a weekly basis using the following scale: 4=present for entirety of both intervention sessions that week, 3=present for 1 ½ intervention sessions that week, 2=present for one intervention session (or two ½ sessions) that week, 1=present for ½ of an intervention session that week, or 0=absent for intervention that week.

**Booster session attendance.** To address absences and to assist all students in meeting criterion on the stages of SRSD instruction, on assessment days (Fridays), teachers were trained to conduct a review session for a portion of the class period (first 15 minutes) prior to writing assessments with (a) students who were absent for all or part of an intervention session that week and (b) students who are not meeting criterion for mastery (described in SRSD intervention procedures). However, booster session attendance was only needed for students who were absent as all students met criteria for mastery. Booster session attendance was coded as 0=attendance for make-up (students who were absent) and students not requiring booster sessions (students who were not absent during instructional days) and 1=students who needed makeup but did not attend booster (students absent on both instructional and booster days).

**Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997).** The SDQ is a 25-item screening tool that yields a total difficulties score as well as a score in the following domains: peer problems, conduct problems, emotional symptoms, hyperactivity, and prosocial behavior (the opposite of antisocial behavior). The SDQ is validated for use at the secondary level (Lane, Parks, Kalberg, & Carter, 2007). The SDQ was completed by teachers for each student six weeks into the school year. The initial plan was to administer the SDQ pre and post for comparison analysis. However,

since many of the students were new to the facility or new to the teachers participating in the study, the teachers could not accurately complete the rating scales until they knew the students for six weeks (week 2 of intervention), prohibiting a post-test comparison. See Appendix H for the SDQ. Teachers were given a working lunch to complete the SDQ on all consented students. During this time, researchers were on hand to answer questions the teachers had regarding the SDQ. Reliability of scoring was completed for 50% of student data by a research assistant with 98.48% (range 83.33 – 100%) agreement. Copies were made prior to scoring, so that each researcher could view the teachers' ratings independently. Any errors found when conducting reliability were corrected in the database for data analysis.

**Systematic Screening for Behavior Disorders (SSBD; Walker & Severson, 1992).** The SSBD is a multiple-gating screening tool that is validated for use with elementary school students, but also has been used with students at the secondary level (Lane, Wehby, Robertson, & Rogers, 2007). For purposes of this investigation, Stages 1 and 2 were used (see Appendix I). Stage 1 involves having a teacher rank his/her class in terms of their top 10 externalizers and internalizers. Since the setting of the study has class sizes of approximately 10 students and all students are enrolled in the facility because they have or are at-risk for E/BD, teachers were asked to classify the students in their class as either externalizers or internalizes but were not required to rank order them. Teachers were given definitions (including examples and nonexamples) of internalizing and externalizing behavior patterns. Stage 2 involves having teachers provide additional information on their top three internalizers and externalizers by completing the Critical Events Index to evaluate low frequency, high intensity behaviors (33 items, marked

exhibited or not exhibited in the current school year) and the Combined Frequency Index of Adaptive and Maladaptive Behavior to evaluate high frequency, low intensity behaviors (33 items, 12 adaptive behaviors and 11 maladaptive behaviors; using a Likert-type scale, 1 through 5 [*Never, Sometimes, Frequently*]). Since all students participating in the study have or are at-risk for E/BD, teachers completed the Critical Events Index and the Combined Frequency Index on all students. Both Stage 1 and 2 instruments have high levels of test-retest stability estimates (Walker & Severson, 1992). Stage 2 instruments have high levels of construct validity and internal consistency estimates (Walker & Severson, 1992).

Stages 1 and 2 of the SSBD were administered six weeks into the school year. The initial plan was to administer the SSBD pre and post for comparison analysis. However since many of the students were new to the facility or new to the teachers participating in the study, the teachers could not accurately complete the rating scales until they knew the students for 6 weeks (week 2 of intervention), prohibiting a post-test comparison. Externalizer/ internalizer status as well as clinical significance was used as descriptive data to clearly define participating students. Teachers were given a working lunch to complete the SSBD on all consented students. During this time, researchers were on hand to answer questions the teachers had regarding the SSBD. IOA of scoring was completed for 50% of student data by a research assistant with 98.75% agreement. Copies were made prior to scoring, so that each researcher could view the teachers' ratings independently. Any errors found when conducting IOA were corrected for data analysis.

**Setting events.** Data was collected on setting events to assess how setting events may impact students' behavior during writing instruction and writing assessment. All teachers collected data on the student behavior-level sheet, a weekly progress report that follows students throughout the week for all activities during school hours (i.e., class, therapy, outings). Students received a score ranging from 0 to 50 for all class periods. A score of 50 indicated that the student complied with adult directions for the duration of an activity. A score between 49 and 1 indicated that the student received a warning or engaged in inappropriate behavior during an activity, but responded appropriately to redirection from adults. A score of 0 indicated that the student engaged in any of the following activities for 30 min or more: class disruption, refusal, elopement, sleeping. In addition if a student was physically/verbally aggressive or receives an intolerable (e.g., stealing, property destruction, sexual behaviors) a 0 for the period is awarded automatically. At the end of each week, teachers entered all points into a schoolwide database. Students purchased items from the school store with their points (see Appendix J).

**Treatment fidelity.** Treatment fidelity of SRSD lessons was evaluated using a checklist that contained the essential elements of the lesson presented. Each lesson component was marked by the teacher as observed, not observed, or not applicable. The not applicable option was used in the event that a lesson was discontinued by events outside of the teacher's control (e.g., lockdown procedures initiated). Teachers were asked to assess treatment fidelity each time a lesson was taught by completing a checklist of all lesson components. During a minimum of 33% of lessons, a research staff member completed the same checklist to ensure adherence to treatment fidelity. During a

minimum of 33% of those lessons, a second research staff member completed the same checklist to ensure there was IOA between observers. During IOA observations, two research staff members completed the fidelity checklist independent of one another. Agreement was calculated using point-by-point agreement or disagreement for each interval. Percentage of agreement was calculated by dividing the total number of agreements by the total number of agreements plus disagreements multiplied by 100. See Appendix K for an example of teacher- and researcher-completed treatment fidelity forms by lesson.

In addition, fidelity of effective teaching behaviors was collected during both baseline and intervention. This 10-item fidelity checklist contained effective teaching behaviors (i.e., teacher engaged students in discussion where indicated) and components of the PBIS plan (i.e., teacher reminded students of behavioral expectations). Fidelity was assessed during a minimum of 33% of baseline and intervention sessions by a research staff member. During a minimum of 33% of those sessions, a second research staff member completed the same checklist to ensure there is IOA between observers. During IOA observations, two research staff members completed the fidelity checklist independently of one another. Agreement was calculated using point-by-point agreement or disagreement for each interval. Percentage of agreement was calculated by dividing the total number of agreements by the total number of agreements plus disagreements multiplied by 100. See Appendix L for the effective teaching behaviors fidelity checklist.

**Social validity.** To assess social validity pre- and postintervention, the Intervention Rating Profile (IRP-15) and the Children's Intervention Rating Profile (CIRP; Witt & Elliott, 1985) were administered by a research staff member. The IRP-15

obtains social validity information from the teacher's perspective and contains 15 items on a 6-point Likert type scale (1=strongly disagree to 6=strongly agree) yielding a score from 15-90. The CIRP obtains social validity information from the student's perspective and is a 7-item questionnaire on a 6-point Likert scale (1=I do not agree to 6=I agree) yielding a score from 7-42. The IRP-15 and CIRP have strong internal consistency estimates. On both measures, higher scores indicate higher treatment acceptability. See Appendix M for the IRP-15 pretest and Appendix N for the CIRP pretest.

### **Procedures**

**Pre- and postassessment procedures.** The following data were collected from student participants at the beginning of the study and following completion of the intervention: (a) WJ-III writing assessments and (b) CIRP. The week before baseline data collection, the WJ-III was administered to all students in the language arts class who gave assent for their data to be shared with researchers. These same procedures were completed the week after the conclusion of the SRSD intervention. Prior to the start of the intervention, but following baseline, the CIRP was administered to all students in the language arts class who gave assent for their data to be shared with researchers by having all students mark their answers while the CIRP was read aloud by researchers. These same procedures were used following conclusion of the SRSD intervention. See Table 5 for a collection schedule for all dependent variables.

Table 5

*Dependent Variables Data Collection Schedule*

<b>Variable</b>	<b>Dates Collected</b>	<b>IOA/Reliability</b>
Broad Written Language Subtest of the <i>WJ-III</i>	Week before baseline, week following IV conclusion	50% of student data
Persuasive writing prompts	Weekly during baseline and IV	50% of student data
Direct observations of academic engagement	Weekly during baseline and IV	33% of sessions
Attendance	Weekly during IV	
Booster session attendance	Weekly during IV	
SDQ	Six weeks into school year	50% of student data
SSBD	Six weeks into school year	50% of student data
Setting events	Weekly during baseline and IV	
SRSD lesson treatment fidelity – teacher completed	100% of sessions	
SRSD lesson treatment fidelity – researcher completed	33% of IV sessions	33% of fidelity sessions
Effective teaching behaviors treatment fidelity – researcher completed	33% of baseline and IV sessions	33% of sessions
IRP-15	Week before baseline, week following IV conclusion	50% of teacher data
CIRP	Week before baseline, week following IV conclusion	50% of student data

*Notes.* CIRP=Children's Intervention Rating Profile, IRP-15=Intervention Rating Profile-15, SDQ=Strengths and Difficulties Questionnaire, SSBD=Systematic Screening for Behavior Disorders, WJ-III=Woodcock Johnson Tests of Achievement, Third Edition; IV=intervention; IOA=inter-observer agreement.

The following data were collected from teacher participants six weeks after the start of the school year: (a) SSBD and (b) SDQ. The IRP-15 was collected from the teacher's perspective after completion of teacher training and following completion of the intervention. Six weeks after the start of the school year (week 2 of intervention), teachers were asked to complete the SSBD and SDQ for each individual student in their class who gave assent for their data to be collected. Researchers reviewed both screening tools with teachers. Teachers were given a working lunch to complete both measures on all consented students. During this time, researchers were on hand to answer questions the teachers had regarding the SSBD and SDQ. Prior to the start of the intervention, but following baseline and teacher training, the IRP-15 was administered to all participating teachers. Teachers completed the IRP-15 at the end of the training session with researchers on hand to answer any teacher questions regarding the measure. Following conclusion of the SRSD intervention, teachers were asked to complete the IRP-15 again.

**Baseline procedures.** During the baseline phase, teachers led classwide writing instruction during the 50-minute language arts period two-days per week, Tuesday and Thursday. During the four weeks of the baseline phase of the intervention, teachers had not have been trained to deliver SRSD instruction. A third day each week (Friday) was used for 30-minute weekly writing assessment as well as 15-minute booster instruction sessions for students absent on Tuesday and/or Thursday of the given week.

**SRSD intervention procedures.** Writing strategy instruction took place classwide during the 50-minute language arts period following the same schedule used during baseline: two-days of instruction (Tuesday and Thursday), one day of make-up instruction and assessment (Friday). Instruction continued until 80% of participants

demonstrated mastery of each stage of SRSD (detailed below) or until they demonstrated independent use of the strategy. During Stage 1 (develop background knowledge), Stage 2 (discuss it), and Stage 3 (model it), mastery was determined by the teachers' level of fidelity of implementation. Teachers were required to implement lessons with 100% fidelity of essential elements before proceeding to the next Stage. If researchers' observed fidelity below 100%, then booster training sessions were conducted, and then the lesson (or necessary components) were retaught. Teachers were informed of this mastery criterion during initial training. During Stage 4 (memorize it), criterion for mastery was achieved when 80% of students have memorized all parts of the mnemonic. Memorization was assessed by classroom teachers as a part of the Stage 4 lesson activities. During Stage 5 (support it) and Stage 6 (independent practice), criterion for mastery was achieved when all students wrote essays with 80% of essay elements. The intervention was discontinued when mastery was achieved for all participants.

The intervention was taught using the meta-scripted lessons for STOP and DARE (Harris et al., 2008), which were divided into 40-minute instructional sessions, including an introduction and lesson wrap-up for each day. The STOP and DARE mnemonic reminds students to **S**uspend judgment, **T**ake a side, **O**rganize ideas, and **P**lan more as you write; and **D**evelop your topic sentence, **A**dd supporting ideas, **R**eject at least one argument for the other side, and **E**nd with a conclusion. The lessons assist teachers in leading students through the six stages of SRSD (see Appendix C for a sample lesson).

### **Experimental Design and Analysis**

To address the first research question, comparing pre- and posttest performance on the *WJ-III*, dependent *T* tests were performed and descriptive effect sizes were

calculated. To answer research questions two through four, hierarchical linear modeling growth curve analysis was utilized using the *HLM7.0* software (Raudenbush, Bryk, & Congdon, 2010). Growth curve analysis of 12 weeks of data (4 weeks of baseline; 8 weeks of intervention) across 44 participants resulted in 435 waves of data (Level 1) nested within 44 participants (Level 2). To model growth over time a piecewise hierarchical model was used. A piecewise approach allows for comparisons of growth rates during distinct time periods. Two piecewise models were constructed (see Table 6). The first model compared baseline growth to a base growth rate. In this model the random effects of the base growth rate was fixed because of potential significant differences over time. The second model compared baseline growth rate, the first five weeks of intervention, and the final three weeks of intervention. The second model was constructed given predictions that growth would level off once students had memorized

Table 6

*Piecewise Coding Schemes*

Weeks	Base Growth			
	Rate	Baseline	IV – Weeks 1-5	IV – Weeks 6-8
B1	-3	-3	0	0
B2	-2	-2	0	0
B3	-1	-1	0	0
B4	0	0	0	0
IV1	1	0	1	0
IV2	2	0	2	0
IV3	3	0	3	0
IV4	4	0	4	0
IV5	5	0	5	0
IV6	6	0	5	1
IV7	7	0	5	2
IV8	8	0	5	3

*Note:* B=baseline, IV=intervention.

the intervention (stage 4). In this model the random effects of the two intervention growth rates (weeks 1-5 and weeks 6-8) were fixed because of potential significant differences over time.

Further, because there was significant variance among students as well as between time, predictor variables were explored to more accurately explain responsiveness to the intervention. Table 7 contains the combined models used to address research questions 2–4. For these analyses, age, grade level, risk status (SDQ), setting events, writing achievement (*WJ-III* Writing Fluency and Writing Samples), attendance, booster, attendance, and fidelity were grand mean centered. Gender, race externalizer/internalizer status (SSBD Stage 1), and externalizer/ internalizer clinical significance (SSBD Stage 2) were entered into the model uncentered as they are dichotomous or nominal variables.

Research question five was to be considered answered in the affirmative if the Mean treatment fidelity was 80% or higher. Research question six was analyzed by comparing pre- and postintervention social validity ratings to determine if the intervention was viewed as acceptable to teachers and students both before the start of the intervention and after the conclusion of the intervention and if acceptability changed over the course of the intervention.

Table 7.

## Combined Growth Curve Models

<b>Growth Curve Analysis – Combined Models</b>	
<b>RQ2: Weekly Writing Performance</b>	<p><b>TIME:TIME1</b>  <math>ELE_{ti} = \beta_{00} + \beta_{10} * TIME_{ti} + \beta_{20} * TIME1_{ti} + r_{0i} + r_{1i} * TIME_{ti} + e_{ti}</math>  <math>QUAL_{ti} = \beta_{00} + \beta_{10} * TIME_{ti} + \beta_{20} * TIME1_{ti} + r_{0i} + r_{1i} * TIME_{ti} + e_{ti}</math>  <math>CWS_{ti} = \beta_{00} + \beta_{10} * TIME_{ti} + \beta_{20} * TIME1_{ti} + r_{0i} + r_{1i} * TIME_{ti} + e_{ti}</math></p> <p><b>TIME1:TIME2:TIME3</b>  <math>ELE_{ti} = \beta_{00} + \beta_{10} * TIME1_{ti} + \beta_{20} * TIME2_{ti} + \beta_{30} * TIME3_{ti} + r_{0i} + r_{2i} * TIME2_{ti} + r_{3i} * TIME3_{ti} + e_{ti}</math>  <math>QUAL_{ti} = \beta_{00} + \beta_{10} * TIME1_{ti} + \beta_{20} * TIME2_{ti} + \beta_{30} * TIME3_{ti} + r_{0i} + r_{2i} * TIME2_{ti} + r_{3i} * TIME3_{ti} + e_{ti}</math>  <math>CWS_{ti} = \beta_{00} + \beta_{10} * TIME1_{ti} + \beta_{20} * TIME2_{ti} + \beta_{30} * TIME3_{ti} + r_{0i} + r_{2i} * TIME2_{ti} + r_{3i} * TIME3_{ti} + e_{ti}</math></p>
<b>RQ3: Weekly AE</b>	<p><b>TIME:TIME1</b>  <math>AE_{ti} = \beta_{00} + \beta_{10} * TIME_{ti} + \beta_{20} * TIME1_{ti} + r_{0i} + r_{1i} * TIME_{ti} + e_{ti}</math></p> <p><b>TIME1:TIME2:TIME3</b>  <math>AE_{ti} = \beta_{00} + \beta_{10} * TIME1_{ti} + \beta_{20} * TIME2_{ti} + \beta_{30} * TIME3_{ti} + r_{0i} + r_{2i} * TIME2_{ti} + r_{3i} * TIME3_{ti} + e_{ti}</math></p>
<b>RQ4: Significant Predictors</b>	<p><math>ELE_{ti} = \beta_{00} + \beta_{01} * PREF_i + \beta_{02} * PRES_i + \beta_{10} * TIME1_{ti} + \beta_{20} * TIME2_{ti} + \beta_{30} * TIME3_{ti} + r_{0i} + r_{2i} * TIME2_{ti} + r_{3i} * TIME3_{ti} + e_{ti}</math>  <math>QUAL_{ti} = \beta_{00} + \beta_{01} * PREF_i + \beta_{02} * PRES_i + \beta_{10} * TIME1_{ti} + \beta_{20} * TIME2_{ti} + \beta_{30} * TIME3_{ti} + r_{0i} + r_{2i} * TIME2_{ti} + r_{3i} * TIME3_{ti} + e_{ti}</math>  <math>CWS_{ti} = \beta_{00} + \beta_{01} * PREF_i + \beta_{10} * TIME1_{ti} + \beta_{20} * TIME2_{ti} + \beta_{30} * TIME3_{ti} + r_{0i} + r_{2i} * TIME2_{ti} + r_{3i} * TIME3_{ti} + e_{ti}</math>  <math>AE_{ti} = \beta_{00} + \beta_{01} * AGE_i + \beta_{02} * SSBDEI_i + \beta_{10} * TIME1_{ti} + \beta_{20} * TIME2_{ti} + \beta_{30} * TIME3_{ti} + r_{0i} + r_{2i} * TIME2_{ti} + r_{3i} * TIME3_{ti} + e_{ti}</math></p>

Note:  $\beta$ =intercept,  $e$ =residual error,  $r_0$ =error term for intercept,  $r_1$ =error term for slope, AE=academic engagement, CWS=correct word sequences, ELE=essay elements, PREF=Pretest WJ-III Fluency, PRES= Pretest WJ-III Samples, QUAL=overall quality, RQ=Research Questions, SDQ=risk status, SSBDEI= externalizer/internalizer status on the SSBD, TIME=base growth rate, TIME1=baseline, TIME2=IV weeks 1-5, TIME3=IV weeks 6-8.

## Results

See Table 8 for means and standard deviation values for all outcome variables.

Prior to analysis, data were found to be normally distributed. All groups met the assumption of homogeneity of variances.

Table 8

*Descriptive Statistics*

	Pre/Baseline M (SD)	Post/Intervention M (SD)
<i>Woodcock-Johnson, III</i> Writing Fluency Standard Scores	80.22 (17.01)	87.74 (17.73)
<i>Woodcock-Johnson, III</i> Writing Samples Standard Scores	85.63 (17.33)	102.41 (13.58)
Average Length of Stay at Facility (Weeks)	34.11 (49.30)	
Essay elements	3.15 (2.10)	6.16 (3.22)
Quality	9.75 (4.32)	14.66 (4.78)
CWS	54.32 (58.90)	124.08 (108.05)
AE	60.81 (31.07)	61.04 (30.22)

### Research Question 1

For the first question, regarding gains in writing achievement as measured by a standardized achievement test, the intervention resulted in a moderate effect size of 0.44 ( $t(26) = 3.356, p = .002$ ) on the students' standard scores of the *WJ-III* Writing Fluency subtest. The intervention resulted in a large effect size of 0.97 ( $t(26)=6.272, p < .000$ ) on the *WJ-III* Writing Samples subtest. See Table 9 for pre and posttest means, standard deviations, effect sizes, and *T* test results reported by score type (raw, standard, and W).

Table 9

#### *Woodcock-Johnson Pre- and Post-tests*

WJ-III Subtest	Score	Pre- Intervention M (SD)	Post- Intervention M (SD)	Effect Size	T (Sig. 2 tailed) <i>df</i> = 26
Writing Fluency	Raw	16.33 (7.01)	19.56 (6.85)	0.46	3.749 (.0010)
	Standard	80.22 (17.01)	87.74 (17.73)	0.44	3.356 (.002)
	W	499.63 (16.95)	507.33 (16.42)	0.45	3.788 (.001)
Writing Samples	Raw	9.54 (5.16)	14.55 (5.02)	0.97	6.309 (.000)
	Standard	85.63 (17.33)	102.41 (13.58)	0.97	6.272 (.000)
	W	499.78 (14.53)	513.11 (12.02)	0.92	6.142 (.000)

## Research Question 2

A piecewise linear change model comparing rate of change (slope) during baseline (piece 1) and intervention (piece 2) was fitted to the data using full maximum likelihood estimation (FML; Singer & Willet, 2003) presented in Table 10. For essay elements, an average student's initial number of elements was 3.73 with an average growth rate of .51 ( $p < 0.001$ ) per week during intervention with growth during baseline not being statistically significant. For quality and CWS, the rate of growth during baseline was also statistically significant during intervention but not during baseline. For all three writing variables, the variance between students was larger than the variance between timepoints of the intervention.

The second piecewise model compared the rate of change during baseline, intervention weeks 1-5, and intervention weeks 6-8. For quality, an average student's initial score was 10.72 with an average growth rate of .79 ( $p < .001$ ) per week during weeks 1-5 of the intervention with a lack of statistically significant change during baseline and weeks 6-8. The variance between students was larger than the variance between timepoints. For elements and CWS, a similar pattern was observed in that the statistically significant growth occurred only during weeks 1-5. The growth rates as well as the statistically significant variance for CWS is further illustrated by the graphs of a random selection of 95% confidence interval [68.4, 126.56] of students' slopes at each timepoint as graphed by the HLM 7.0 program included in Figure 1.

Table 10.

*Piecewise Growth Curve Models*

Model	Elements			Quality			CWS			AE		
	Fixed effects	Coefficient (SE)	p-value	Coefficient (SE)	p-value	Coefficient (SE)	p-value	Coefficient (SE)	p-value	Coefficient (SE)	p-value	
<b>BL:</b>	Constant	3.73	<0.001	11.11	<0.001	64.39	<0.001	54.80	<0.001			
<b>IV</b>	BL Slope	0.07	0.586	0.35	0.062	2.55	0.386	-3.10	0.050			
	IV Slope	0.51	<0.001	0.61	<0.001	11.28	<0.001	1.52	0.019			
	<b>Random effects</b>	<b>SD</b>	<b>p-value</b>	<b>SD</b>	<b>p-value</b>	<b>SD</b>	<b>p-value</b>	<b>SD</b>	<b>p-value</b>	<b>SD</b>	<b>p-value</b>	
	Var between students	1.93	<0.001	3.62	<0.001	50.64	<0.001	13.67	<0.001			
	Var between IV	0.26	<0.001	0.20	0.135	6.95	0.005	1.40	0.246			
<b>Model</b>	<b>Fixed effects</b>	<b>Coefficient (SE)</b>	<b>p-value</b>	<b>Coefficient (SE)</b>	<b>p-value</b>	<b>Coefficient (SE)</b>	<b>Sig.</b>	<b>Coefficient (SE)</b>	<b>p-value</b>	<b>Coefficient (SE)</b>	<b>p-value</b>	
<b>BL:</b>	Constant	3.31	<0.001	10.72	<0.001	57.45	<0.001	57.49	<0.001			
<b>IV1-5:</b>	BL Slope	-0.10	0.465	0.17	0.383	-0.09	>0.500	-1.94	0.256			
<b>IV6-8</b>	IV1-5 Slope	0.72	<0.001	0.79	<0.001	14.29	<0.001	-0.33	>0.500			
	IV6-8 Slope	0.01	>0.500	0.22	0.329	4.11	>0.500	6.75	0.002			
	<b>Random effects</b>	<b>SD</b>	<b>p-value</b>	<b>SD</b>	<b>p-value</b>	<b>SD</b>	<b>p-value</b>	<b>SD</b>	<b>p-value</b>	<b>SD</b>	<b>p-value</b>	
	Var between students	1.75	<0.001	3.51	<0.001	43.40	<0.001	13.73	0.032			
	Var between IV1-5	0.11	0.365	0.42	0.025	9.85	0.030	2.68	0.293			
	Var between IV6-8	1.11	<0.001	0.30	>0.500	35.90	<0.001	1.67	>0.500			

*Note:* AE=academic engagement, CWS=correct word sequences, ELE=essay elements, QUAL=overall quality, SD=standard deviation, SE=standard error, TIME=base growth rate, BL=baseline, IV1-5=Intervention weeks 1-5, IV6-8=Intervention weeks 6-8, Var.=Variance.

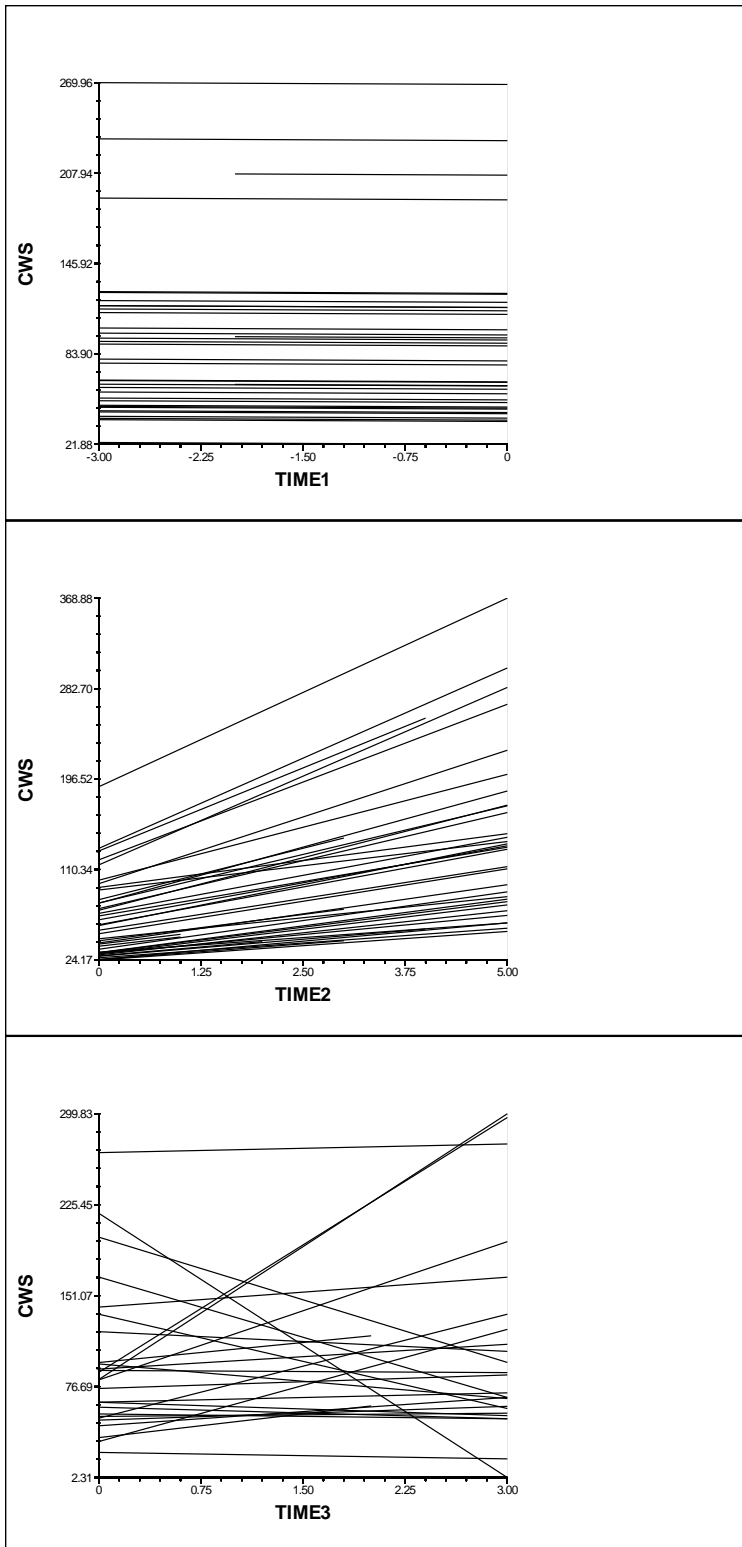


Figure 1. Graphed CWS Slopes.

Note: Time1=baseline, Time2=intervention weeks 1-5, Time3=intervention weeks 6-8.

### Research Question 3

A piecewise linear change model comparing rate of change during baseline and intervention is presented in Table 10. For AE, an average student's initial AE was 54.80% with an average decrease of 3.10% ( $p = 0.050$ ) per week during baseline and an average increase of 1.52% ( $p = 0.019$ ) per week during intervention. The variance between students was larger than the variance between timepoints.

The second piecewise model compared rate of change during baseline, intervention weeks 1-5, and intervention weeks 6-8 (see Table 11). An average student's initial AE was 57.49% with nonsignificant growth during baseline or intervention weeks 1-5 but an average growth rate of an average growth rate of 6.75% ( $p = 0.002$ ) during weeks 6-8 of intervention. The variance between students was larger than the variance between both timepoints.

### Research Question 4

Predictors were added to the first model (baseline, intervention) to explain the between student variance at the initial timepoint and growth over time. *WJ-III* Fluency and Samples both predicted initial level of elements. On average, students' initial elements was 3.73, for every point increase over the mean standard score for *WJ-III* Fluency initial elements increased by .04 ( $p = 0.004$ ) and every point increase over the mean in *WJ-III* Samples initial elements increased by .04 ( $p = 0.002$ ) with an average growth rate of .49 ( $p < 0.001$ ) per week during intervention with growth during baseline not being statistically significant. Both *WJ-III* measures also predicted initial quality of writing. Only *WJ-III* Fluency predict initial CWS (see Table 11).

Table 11.

## Growth Curve Models with Significant Predictor Variables

Model	Parameter	Elements			Quality			CWS			AE		
		Fixed effects	Coefficient (SE)	Sig.	Coefficient (SE)	Sig.	Coefficient (SE)	Sig.	Coefficient (SE)	Sig.	Coefficient (SE)	Sig.	
BL: IV	Constant		3.73	<0.001	11.12	<0.001	49.96	<0.001	50.35	<0.001			
	Fluency		0.04	0.004	0.08	0.014	2.10	<0.001					
	Samples		0.04	0.002	0.11	<0.001							
	Age								2.50	0.003			
	SSBDEI								32.18	0.029			
	BL Slope		0.07	>0.500	0.36	0.038	2.34	>0.500	-3.11	0.052			
	IV Slope		0.49	<0.001	0.61	<0.001	11.52	<0.001	1.37	0.038			
	Attendance								0.08	0.003			
	<b>Random effects</b>		<b>SD</b>	<b>Sig.</b>	<b>SD</b>	<b>Sig.</b>	<b>SD</b>	<b>Sig.</b>	<b>SD</b>	<b>Sig.</b>	<b>SD</b>	<b>Sig.</b>	
	Var between students		1.43	<0.001	2.00	<0.001	35.12	<0.001	12.52	0.002			
	Var between IV		0.25	<0.001	0.21	0.133	6.88	0.005	1.79	0.177			
BL:	Constant		3.31	<0.001	10.73	<0.001	45.81	<0.001	52.64	<0.001			
IV1-5:	Fluency		0.04	0.018	0.07	0.009	1.83	<0.001					
IV6-8	Samples		0.038	0.019	0.11	<0.001							
	Age								2.80	0.014			
	SSBDEI								26.03	0.050			
	BASE Slope		-0.10	0.443	0.19	0.318	-0.25	>0.500	-1.99	0.245			
	IV1-5 Slope		0.71	<0.001	0.93	<0.001	14.93	<0.001	-0.14	0.897			
	Race				-0.43	0.017							
	IV6-8 Slope		-0.05	0.824	0.17	0.430	2.67	>0.500	6.88	0.001			
	<b>Random effects</b>		<b>SD</b>	<b>Sig.</b>	<b>SD</b>	<b>Sig.</b>	<b>SD</b>	<b>Sig.</b>	<b>SD</b>	<b>Sig.</b>	<b>SD</b>	<b>Sig.</b>	
	Var between students		1.26	<0.001	1.88	<0.001	29.44	<0.001	12.86	0.150			
	Var between IV1-5		0.11	0.367	0.31	0.079	10.22	0.028	2.71	0.279			
	Var between IV6-8		1.05	<0.001	0.19	>0.500	36.52	<0.001	2.04	>0.500			

Note: AE=academic engagement, CWS=correct word sequences, ELE=essay elements, QUAL=overall quality, SD=standard deviation, SSBDEI=SSBD externalizer/internalizer status, BL=baseline, IV1-5=Intervention weeks 1-5, IV6-8=Intervention weeks 6-8, Var.=Variance.

Predictors were added to the first model to explain the between student variance at the initial timepoint and growth over time for AE. Age and externalizer/internalizer status on the SSBD both predicted initial rate of AE. On average, students' initial level of AE was 50.35%, for every point increase over the mean age AE increased by 2.50% ( $p = 0.003$ ) and internalizers' AE was initially 10.57% ( $p = 0.006$ ) more engaged than externalizers. AE increased by 1.37% ( $p = 0.038$ ) each week of the intervention with attendance predicting growth (see Table 11).

Predictors were added to the second piecewise model (baseline intervention weeks 1-5, intervention weeks 6-8) to explain the between student variance at the initial timepoint and growth over time. On average, students' initial quality was 10.73, for every point increase over the mean in *WJ-III* Fluency initial quality increased by .07 ( $p = 0.009$ ) and every point increase over the mean in *WJ-III* Samples initial quality increased by .11 ( $p < 0.001$ ), which increased by .93 ( $p < 0.001$ ) over the course of the first five weeks of intervention for Caucasian students as race served as a predictor or responding in terms of quality. African American and Hispanic students increased by 0.43 ( $p = 0.017$ ) fewer points during weeks 1-5 of the intervention. Growth during baseline and the final weeks of intervention was not statistically significant. *WJ-III* Fluency and Samples also predicted the initial number of essay elements students included in their writing. *WJ-III* Fluency predicted the number of CWS students included in their writing. No variables were significant predictors of writing growth as measured by elements and CWS (see Table 11).

Predictors were added to the second piecewise model to explain the between student variance at the initial timepoint and growth over time for AE. On average,

students' initial level of AE was 52.64%, for every point increase over the mean age AE increased by 2.80% ( $p = 0.014$ ) and internalizers' AE was initially 11.35% ( $p = 0.012$ ) more engaged than externalizers. AE increased by 6.88% ( $p = 0.001$ ) each week of the intervention (see Table 11).

### Research Question 5

The average level of treatment fidelity for essential lesson elements was above 80% from both the researcher and teacher perspective (see Table 8), suggesting adequate implementation. The teacher-reported fidelity was slightly higher than that reported by researchers, however the differences were not significant. Quality of fidelity implementation increased from a mean of 72.92% ( $SD = 17.44$ ) at baseline to 80.66% ( $SD = 11.07$ ) during intervention. There were high levels of IOA between researchers across both types of fidelity observations.

Table 12

#### *Treatment Fidelity*

	Treatment Fidelity		
	% of Sessions	Fidelity M (SD)	Agreement M (SD)
Teacher Completed Lesson	86.89	98.44 (4.80)	
Researcher Completed Lesson	33.33	92.61 (9.77)	
IOA	40.91		99.59 (1.75)
Research Completed Quality Baseline	50.00	72.92 (17.44)	
IOA	41.67		100 (0.00)
Research Completed Quality Intervention	33.33	80.66 (11.07)	
IOA	40.91		99.38 (2.61)

### Research Question 6

For the sixth question, both teachers and students rated the intervention as acceptable pre- and postintervention and overall acceptability improved post-intervention. See results of the CIRP and IRP-15 in Table 13. All three teachers rated the intervention higher at postassessment. Teachers shared that they felt the intervention was effective, and seemed encouraged by students' improved writing. The average acceptability from the students' perspective also increased at postassessment. Students shared that they felt that the STOP & DARE mnemonic helped them write better essays. High school students who took the high school writing test during the course of the intervention shared that they used the mnemonic to help them complete the writing test.

Table 13

#### *Social Validity*

	Social Validity	
	Pre-Intervention M (SD)	Post-Intervention M (SD)
IRP-15	74.33 (4.93)	83.00 (4.36)
CIRP	28.35 (7.76)	34.22 (7.72)

## Discussion

Findings from the current study suggest that teacher implementation of SRSD in a residential school for students with E/BD currently implementing PBIS with high fidelity can result in improvements in writing and academic engagement during writing instruction. Students made significant gains in all three measures of writing over the course of the intervention, in particular the first five weeks. In addition, students' writing gains generalized to the writing achievement subtest of the *WJ-III* resulting in a moderate effect size on the Writing Fluency subtest and a large effect size on the Writing Samples subtest. These findings are consistent with other studies demonstrating that SRSD can be used to teach students with E/BD to write persuasively (e.g., Mason et al., 2010; Mastropieri et al., 2009). While there have been two previous investigations exploring teacher-implemented SRSD with students with E/BD (Cuenca-Sanchez et al., 2012; Mastropieri et al., in press), this is the first to explore the utility of SRSD in a residential facility. This is encouraging given the paucity of research in residential facilities (Tobin & Sprague, 2000), especially in the area of academic interventions for students with E/BD.

The piecewise linear change model demonstrated that change was statistically significant during the first five weeks of the intervention when students were learning/memorizing the mnemonic, and then growth leveled off for the remainder of the intervention. This is not surprising given the fact that the later stages of SRSD required the students to write essay during lessons, and therefore the Friday writing assessment was no longer the only time students had to demonstrate their writing gains. In fact, during the later writing probes, students made comments such as, "We just wrote

yesterday” or “I don’t want to write. I want to graph my essay from yesterday.” This suggests that students were still internalizing the SRSD model but felt the weekly writing assessment day was no longer relevant to them in later weeks.

There also were significant changes in students’ academic engagement over the course of the intervention. The two piecewise models illustrate that while there was gradual growth over the course of the intervention, the most significant growth occurred during the last three weeks of the intervention. This is in sharp contrast to the rate of growth of writing achievement during the intervention. This finding is not surprising given the fact that the later writing lessons involved more tasks requiring active engagement (i.e., planning and writing an essay) than in earlier lessons. It also should be noted that the school was in its sixth year of implementation of a school-wide PBIS program that had procedures for teaching, reinforcing, and monitoring behavioral expectations, as the majority of successful interventions with students with E/BD had similar models in place (Ennis & Jolivette, 2012).

Another encouraging finding from this study is that teachers in a residential facility were able to consistently implement the intervention with fidelity with researcher support (i.e., provision of training, copying of materials). Another finding is that as teachers implemented SRSD, their effective teaching behaviors during intervention (80.66%) increased over baseline rates (72.92%). This suggests that giving teachers an evidence-based program to follow will result in the increased likelihood that they will engage in effective teaching behaviors (e.g., teacher engages students in discussion; lesson pace is appropriate). Finally, the intervention was socially acceptable to both

teachers and students as measured by the IRP-15 and the CIRP. In addition, students and teacher rated the intervention as more acceptable postintervention.

### **Limitations and Future Directions**

The results of this study should be interpreted in light of several limitations that could potentially threaten internal and external validity. To the extent possible, threats as a result of maturation, testing effects, and intervention dosage have been controlled. An additional limitation to this study is related to sample size. Because of the small size of the school and the widespread need for writing interventions all secondary students were involved in the study. However, this only resulted in a sample size of 44 participants, many of whom had incomplete data. While the data analysis, growth curve modeling, allowed students to be included in the sample with incomplete data, additional investigations are needed involving a larger number of students with complete data sets. An additional and related limitation is the issue of early withdrawal from the study. Twenty-seven students were present for the entire intervention. However, 15 students were discharged or transferred from the residential school and did not receive the intervention in its entirety, potentially limiting their level of responsiveness to the intervention. Likewise, there were numerous students who were absent for one or many of the intervention sessions. Students were absent for various reasons, including: illness, suspension, group or individual therapy, and approved separations from the classroom. This could have limited their level of responsiveness to SRSD instruction. Despite this fact, attendance was not a significant predictor or responsiveness to the intervention. However, during the intervention there were many students who displayed low levels of academic engagement or high levels of disruption for one or more days. Perhaps, if the

attendance variable took into account level of engagement during a lesson, this variable would be more predictive of responsiveness.

There are several potential limitations that may affect the generalizability of the findings. To begin, group design methodology was chosen to allow for a large sample size and multiple descriptive measures collected to better identify the student participants, as both of these issues affect generalizability to other students with E/BD. A second issue is the level of support provided by the researchers. While the teachers were ultimately responsible for the intervention, researchers provided much support throughout the intervention process by providing booster trainings, preparing all needed materials (including making copies), and conducting observations in the classroom that could have potentially served as a reminder for the teacher to conduct the steps of the SRSD lessons. Future investigations should consider providing less support to determine if teachers can more independently implement SRSD in a residential school. However, as this is the first investigation in a residential school with SRSD conducted by a researcher or teacher, it was encouraging to observe the teachers implementing SRSD instruction with fidelity with researcher support.

An additional limitation is that only two variables predicted initial writing ability (i.e., *WJ-III* Fluency and Samples) and only two variables predicted initial AE (i.e., age and externalizer/internalizer status). Further, despite the significant number of variables analyzed (i.e., age, attendance, booster attendance, clinical significance on the SSBD, externalizer/internalizer status of the SSBD, gender, grade, race, risk status on the SDQ, setting events, treatment fidelity, *WJ-III* Fluency, *WJ-III* Samples), both individually and in groups, no variable predicted growth rates or explained the variance between students

or across time. This varied from initial hypotheses. Future researchers should conduct additional analyses to determine what student characteristic variables predict growth rate responsiveness to the intervention.

Another limitation of this study is related to the selection of relevant writing prompts for the participants and the content of students' writing. To begin, given the various backgrounds and emotional needs of the participating students, many of the topics related to life at school or life on the residential units rather than more global topics of life outside of the facility. For example, a prompt included in the SRSD text that was omitted dealt with parents choosing the friends of teens. This was done intentionally to help prevent selection of topics that would be troubling to participants or bring up difficult memories. Despite these efforts, many of the writing prompts resulted in students sharing inappropriate content or using profanity in their writing. For example, in response to Baseline Prompt Three (Should students be allowed to wear whatever they want to school?), many students wrote about clothing being "whorish" or clothing making people think about performing inappropriate sex acts. When these instances occurred, the prompts were still scored using the scoring methods detailed previously. Future researchers should continue to consider the importance of selecting appropriate writing prompts and may also want to consider explicit instruction regarding appropriate content of essays.

Future researchers should consider replicating these procedures in residential facilities to validate the findings. In addition, future researchers should consider investigations using SRSD for persuasive writing instruction with elementary students. While this study focused on improving the persuasive writing skills of students with

E/BD, investigations that focus on narrative and expository writing also are needed in residential facilities. In addition, future researchers should look at the instruction of SRSD for writing informational text in other content areas such as science and social studies. Finally, as the SRSD model has significant potential benefits for student with E/BD, such as improving their self-determination skills (e.g., Cuenca-Sanchez et al., 2012), future researchers should look at using the SRSD model to help students express their feelings in an elective course or therapy session.

### **Conclusion**

This study demonstrated that SRSD, considered socially valid by both teacher and student participants, can be implemented by teachers in a residential school with students with E/BD. Instruction resulted in improved writing as measured by pre- and posttest assessments as well as weekly writing probes. Future research is needed to validate the use of SRSD in residential schools for students with E/BD.

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## APPENDIXES

## APPENDIX A

## SUMMARY OF STUDIES OF THE UTILITY OF SRSD WITH STUDENTS WITH WRITING PROBLEMS WHO ARE AT RISK FOR OR IDENTIFIED AS E/BD

PART ONE					
Citation	Participants	Setting	Instruction	Tier	DV
Cuenca-Sanchez, Mastropieri, Scuggs, & Kidd (in press)	7th graders with E/BD; Experimental: 11 (10 males, 1 female) students; Control: 10 males	Public day MS for students with severe E/BD	Sped teacher delivered 3:1 or 4:1; 4days per week for 30 minutes	Not reported (small group)	SRSD Persuasive (POW+ TREE); Fluency instruction
Harris et al., (in press)	56 (18 males; 38 females)2 <sup>nd</sup> and 3 <sup>rd</sup> graders; 28 students with behavioral challenges	3 inclusive ES	Gen teacher delivered as a part of whole class instruction 3 days per week	Primary	SRSD Narrative (POW+WWW What2 How2) OR Persuasive (POW+ TREE)
Lane et al., (2011)	2 <sup>nd</sup> graders at-risk for writing and behavioral problems; Experimental: 23 (17 males, 6 females; 12 ext, 11 int); Control: 21 (15 males, 6 females; 12 ext, 9 int)	5 inclusive ES	Researcher delivered 1:1 outside of the classroom; 3-4 days per week for 30 minutes	Secondary	SRSD Narrative (POW+WWW What2 How2) OR Persuasive (POW+ TREE)
Lane, Graham, Harris, Little, Sandmel, & Brindle (2010)	13 (8 males, 5 females) 2nd graders at-risk for writing and behavioral problems (7 ext, 6 int)	4 inclusive ES	Researcher delivered 1:1 outside of the classroom; 3-4 days per week for 30 minutes	Not reported (individualized)	SRSD Narrative (POW+WWW What2 How2)
Lane, Harris, Graham, Weisenbach, Brindle, & Morphy (2008)	6 (5 male ext, 1 female int) 2nd grade students with behavioral and writing problems	Inclusive ES	Gen or sped researcher delivered 1:1 outside of the classroom; 3-4 days per week for 30 minutes	Not reported (individualized)	SRSD Narrative (POW+ WWW What2 How2)
Harris, Graham, Story, & Sandmel (2010)	13 (7 males, 6 females) 2nd students at-risk for writing and behavioral problems(7 ext, 6 int)	Inclusive ES	Researcher delivered 1:1 outside of the classroom; 3-4 days per week for 30 min	Not reported (individualized)	SRSD Persuasive (POW + TREE)

Citation	Participants	Setting	Instruction	Tier	IV	DV
Mason, Kubima, Valasa, & Cramer (2010)	5 (4 males, 1 female) middle school students with E/BD	Alternative school for students with E/BD	Sped researcher delivered 1:1 outside of the classroom; 5 30-min and 3 10-min lessons	Not reported (individualized)	SRSD Persuasive (POW + TREE)	Quality, length, WJ fluency (generalization)
Mason & Shriner (2008)	6 (5 males, 1 female) 2nd-5th grades with writing difficulties (2 with E/BD, 1 with E/BD and OHI-ADHD, 1 with E/BD & LD, 1 with LD and at-risk for E/BD, and 1 at-risk for E/BD)	Inclusive ES	Sped researcher delivered 1:1 in resource classroom	Not reported (individualized)	SRSD Persuasive (POW + TREE)	Essay elements, length, quality, number of transition words
Mason, Snyder, Sukhram, & Kedem (2006)	9 4th (5 males, 4 females) graders with writing difficulties; 4 (1 with E/BD) students with disabilities	ES	Research delivered 3:1	Not reported (small group)	SRSD Expository (TWA + PLANS)	Oral and written retells
Mastropieri et al. (2009)	12 (11 males, 1 female) 8th graders with E/BD	Public day MS for students with severe E/BD	Sped researcher delivered 3:1; 4 days per week during 30-minute school-wide remediation period	Not reported (small group)	SRSD Persuasive (POW + TREE); Fluency instruction	WJ fluency, essay parts, length, transition words, holistic, on-task behavior
Mastropieri et al. (in press)	12 7 <sup>th</sup> and 8 <sup>th</sup> grade males with E./BD	Public MS	Sped teacher or researcher delivered 2:1 or 3:1; 5 days per week during 45 min professional development periods	Not reported (small group)	SRSD Persuasive (POW + TREE); Fluency instruction	WJ fluency; essay elements, holistic, on-task behavior

PART TWO

Citation	Design	TF	SV	Within PBIS	Results
Cuenca-Sanchez, Mastropieri, Scruggs, & Kidd (in press)	Pre and posttest group experimental design; generalization and maintenance	Research staff completed: 33% of sessions; IOA: 33% of sessions with 100% agreement	Student and teacher interviews (post-instruction)	Yes, reported	Experimental students significantly outperformed control students on persuasive essay components, self-efficacy, and self-determination. Experimental students also generalized and maintained gains.
Harris et al., (in press)	Randomized control trial; pre and posttest group experimental design (story and persuasive comparison groups); Intervention and control group pre-, post-test design; generalization to classroom	T eacher completed: 100% of sessions; Research staff completed: 25% of sessions	Student and teacher rating scales (pre -and post-intervention)	Yes, Reported	SRSD instruction was effective increase essay/story elements and quality of writing for all students. Students without challenging behaviors made great gains on some measures
Lane et al., (2011)	Intervention and control group pre-, post-test design; generalization to classroom	T eacher completed: 100% of sessions; Research staff completed: for 3 sessions per student	Student and teacher rating scales (pre -and post-intervention)	Yes, reported	Student receiving SRSD intervention made significant gains over students in the control group in terms of essay/story elements, quality, and academic engagement.
Lane, Graham, Harris, Little, Sandmel, & Brindle (2010)	Two multiple-probe MBL across participants for both externalizers and internalizers; maintenance	T eacher completed: 100% of sessions; Research staff completed: 27-42% of sessions	Student and teacher rating scales (pre -and post-intervention)	Yes, reported	Both externalizers and internalizers showed lasting increases in story elements, story quality, and length.
Lane, Harris, Graham, Weisenbach, Brindle, & Morphy (2008)	Multiple-probe MBL across participants; maintenance	T eacher completed: 100% of sessions; Research staff completed: 42% of sessions	Student and teacher rating scales (pre -and post-intervention)	Yes, reported	Results revealed lasting improvements in story completeness, length, and quality for all participants.
Little, Lane, Harris, Graham, Story, & Sandmel (2010)	Two multiple-probe MBL across participants for both externalizers and internalizers; maintenance	T eacher completed: 100% of sessions; Research staff completed: 27% - 42% of sessions	Student and teacher rating scales (pre -and post-intervention); Student interview post-intervention	Yes, reported	Results revealed increases in persuasive essay elements and improvements in length and quality for both groups of students.

Citation	Design	TF	SV	Within PBIS	Results
Mason, Kubina, Valasa, & Cramer (2010)	Multiple-probe MBL across participants; maintenance	Teacher completed: 100% of sessions; Research staff completed: 50% of sessions	Student written response post-intervention	Yes, PC	Results of SRSD instruction yielded positive effects for all students on the quality of written responses, and effects were maintained over time.
Mason & Shriner (2008)	Multiple-probe design across subjects	Teacher completed: 100% of session; Research staff completed	Student interviews completed post-instruction	Yes, PC	Student performance improved for all participants and maintained above criterion levels for all students except one.
Mason, Snyder, Sukhram, & Kedem (2006)	Multiple-probe MBL across participant instructional groups; maintenance	Research staff completed: 30% of sessions (via audiotape)	Student interviews completed post-instruction	Yes, PC	Student performance improved and maintained following instruction.
Mastropieri et al. (2009)	Multiple-probe MBL across participant instructional groups; maintenance and generalization	Research staff completed 33% of sessions	Strategy interviews completed with students at all instructional phases	Yes, reported	All students mastered the components of effective persuasive writing; increases in length and quality from baseline to postinstruction and fluency phases. Individual student responding varied on generalization and maintenance assessments. On-task behavior was correlated with fluency, maintenance, and generalization outcomes.
Mastropieri et al. (in press)	Multiple-probe MBL across participant instructional groups; maintenance, generalization, and fluency	Research staff completed 75% of sessions	Strategy interview with students post intervention	Yes, reported	All students demonstrated improved writing over baseline at post-intervention and post-fluency instruction and at maintenance and generalization checks.

*Notes.* E/BD=emotional/behavioral disorders, ext=externalizers, int=internalizers, LD=learning disabilities, OHI-ADHD=other health impairment=attention deficit hyperactivity disorder; ES=elementary school, MS=middle school; GEN=general education, SPED=special education; IV=independent variable; PLANS=Pick goals, List ways to meet goals, And, make Notes, Sequence notes; POW=Pick my idea, Organize my notes, Write and say more; SRSD=self-regulated strategy development; TREE=Topic sentence, Reasons, Ending/Explain reasons, Examine/Ending; TWA=Think before reading, think While reading, think After reading; WWW What2 How2 =Who is the main character? When does the story happen? Where does the story happen? What does the main character do? What happens then? How does the story end? How does the main character feel?; DV=dependent variable; MBL=Multiple-baseline Design; TF=treatment fidelity, IOA=interobserver agreement; SV=social validity; PBIS=positive behavioral interventions and supports, PC=personal communication with the first author.



## APPENDIX C

## SRSD SAMPLE LESSON PLAN

**STOP & DARE****Lesson 1: Develop Background Knowledge/Discuss It  
Day 1****Instructor:** \_\_\_\_\_**Period:** \_\_\_\_\_**Date:** \_\_\_\_\_**Objectives: Introduce persuasive strategy STOP.****Materials needed:** STOP sign chart, blank STOP sign chart, Promethean board, dry erase markers, pencils/pens.**\_\_\_\_ I. Introduce Strategy (~5 min)**

Tell students you're going to teach them some of the "tricks" for writing. First, we're going to learn a strategy, or trick, that good writers use for writing good persuasive essays.

*Ask students to tell you in their own words what a persuasive essay is and/or what it means to persuade someone.*

**\_\_\_\_ II. Introduce Relevance (~10 min)**

Talk about some of the advantages of being able to persuade others in writing and in life (i.e., you get your way, you win an argument, you can persuade others to take your point of view).

*Ask students to share examples of when they have persuaded someone to do something.* Make a list of good examples on the **Promethean board** (to engage students, give them the choice of writing their responses on the board themselves). If you need to get them started, ask them about times when they have been trying to get their parents, teachers, or friends to believe their side of an issue and what that issue was.

Now, explain that this can also be done in an essay. Essays are found everywhere (e.g., on TV, on the radio, in newspapers/the internet, at home, in letters to adults). Explain different advantages of persuading someone in writing

- you are less likely to get upset if you put it in writing rather than tell them face-to-face
- sometimes things are more believable if they are written down
- you can't talk to everyone face-to-face (i.e., the mayor, the president), but you can write them a letter/essay

**\_\_\_\_ III. Introduce STOP (~20 minutes)****A. Project the STOP sign chart on the Promethean board.**

**B. Emphasize:** STOP is a trick good writers often use for writing persuasive essays, and can also be used when you are trying to convince someone of something in person. Explain that STOP is a trick they will use to plan their essay.

**C. Give each student a blank STOP sign chart so that they can fill in the parts as you go over them. Emphasize the information in each section below.**

**D. Suspend Judgment.** *Ask students if they know what **suspend** means?* Analogies such as policeman stopping traffic could be used. *Ask students if they know what **judgment** means?* Clarify that in this case the word judgment means the formation of an opinion after hearing both side of an argument. Analogies

such as a jury making a decision could be used. Explain that during this step, they will brainstorm ideas for and again the topic.

**E. Take a side.** Tell the students that in this step, they will evaluate what they have brainstormed up to this point. Spend a few minutes discussing an important part of planning – deciding which side to believe. *Ask students to tell you in their own words why they feel this type of planning is important.* Explain that once a decision has been made, they will try to convince whoever reads their essay to agree with them.

**F. Organize Ideas.** The third step will help the students to select ideas they feel will support their beliefs. In addition, they will need to select at least one argument against the ideas that they can refute. Arguments both for and against the ideas must be stated to make a strong essay. Arguments that the writer does not agree with must be countered or dealt with in some way or they will actually weaken the essay. Discuss ways to refute an argument such as thinking of a contrasting reason or condition that would make an exception to the argument. *Explain this to students and ask them to tell you in their own words why this is the case.* Explain to students that when they get ready to write they will number their arguments in the order that they should be used. Explain that this can serve as map for writer their essay. Explain that when travelers use maps, they first look for the final destination and then choose a route that will take them there. Take a side is like deciding a destination, and the essay will guide others to accept their side that the writer supports.

**G. Plan More as Your Write.** Emphasize that this means to continue planning as they compose, and remember to include the four essay parts in DARE, which we will talk about during our next writing class.

#### \_\_\_\_ IV. Wrap Up the Lesson (~5 min)

*Wrap up the lesson by asking students to say the step aloud with you.* Ask students to put their names on their STOP signs and take them up to be redistributed for future lessons. *Ask students what they liked most about the strategy or becoming a persuasive writer?* Tell students that tomorrow we will learn what DARE stands for and how it can help them with their writing.

## STOP Chart



Blank STOP Chart





S \_\_\_\_\_  
T \_\_\_\_\_  
O \_\_\_\_\_  
P \_\_\_\_\_

## APPENDIX D

## WOODCOCK-JOHNSON WRITING TESTS

**Test 8 Writing Fluency**

## Sample Items

A. good cake is		The cake is good.
a. pig fat is		
c. this ball big		
D. bell ringing the		

## Writing Samples

13.




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14.

(1) Place one cup of flour in a small bowl.

(2) \_\_\_\_\_

(3) Beat eggs and flour slightly.

15.




---



---



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16.

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---



---

17.

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---



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18.

(1) When my father agrees to build a house, he follows several steps. (2) \_\_\_\_\_

---



---

(3) Next, he determines the exact plan his customer has in mind.

## APPENDIX E

## PERSUASIVE WRITING PROMPTS

Baseline 1	Should students have to go to school in the summer?
Baseline 2	Should people be allowed to use cell phones while driving?
Baseline 3	Should students be able to wear whatever they want to school?
Baseline 4	Should students stay in school until they graduate?
Intervention 1	Should teens be required to do chores?
Intervention 2	Should teens should be allowed to choose the movies and TV they watch?
Intervention 3	Should boys and girls be taught in separate classes at school?
Intervention 4	Should teens be allowed to eat whatever they want?
Intervention 5	Should teens your age be allowed to have jobs after school?
Intervention 6	Should students be able to choose the subjects they study in school?
Intervention 7	Should sports stars be treated as heroes?
Intervention 8	Should students be allowed to have snacks/candy/gum in the classroom?
Intervention 9	Should the school day should be shorter?
Intervention 10	Should kids/teens be allowed to stay up as late as they want (choose their own bedtime)?
Lesson 1	Should people be allowed to use cell phones in public places (restaurants, movie theaters, Marta)?
Lesson 2	Should teens your age be able to vote?
Lesson 3	Should students earn grades in school?
Lesson 4	Should there be a community curfew for teens?
Lesson 5	Should people be required to serve in the military?
Lesson 6	Should students have to graduate from high school before they can get a driver's license?

Appendix F

Writing Probe Data Summary Sheet

Student Name \_\_\_\_\_ Writing Probe Date \_\_\_\_\_  
 Writing Probe \_\_\_\_\_

Assessment	Score	Reliability Score
Essay Elements		Smaller # of elements _____ / Larger # of elements _____ = _____ * 100 = _____
Quality		Agreements (within 1 point margin of error) _____ / Agreements + disagreements (beyond 1 point margin of error) _____ = _____ * 100 = _____
Correct word sequences		Smaller # of CWS _____ / Larger # of CWS _____ = _____ * 100 = _____

Scorer \_\_\_\_\_  
 Reliability: Yes No  
 2<sup>nd</sup> Scorer: \_\_\_\_\_

APPENDIX G  
QUALITY SCORING RUBRIC

Table 2

*Rubric***I. FOCUS DEVELOPMENT**

High Range 6-5	Mid Range 4-3	Low Range 2-1
<ul style="list-style-type: none"> <li>___ Focus is strong and consistent.</li> <li>___ Main points stand out in complete exploration of the topic.</li> <li>___ All aspects of the task developed.</li> <li>___ Supporting details are relevant and carefully selected.</li> </ul>	<ul style="list-style-type: none"> <li>___ Focus is easily identifiable.</li> <li>___ Main points are clear but may be broad, simplistic, or inappropriate.</li> <li>___ Most aspects of task developed.</li> <li>___ Support is uneven, distracting, overused, broad, or limited in scope.</li> </ul>	<ul style="list-style-type: none"> <li>___ Focus and/or main points are extremely limited or unclear.</li> <li>___ Support is irrelevant, insufficient, illogical, and/or non-existent.</li> <li>___ Original writing is too limited to demonstrate development.</li> </ul>

**II. ORGANIZATION**

High Range 6-5	Mid Range 4-3	Low Range 2-1
<ul style="list-style-type: none"> <li>___ Format fits the content and purpose.</li> <li>___ Introduction and conclusion are strong and effective.</li> <li>___ Transitions are effective among sentences, paragraphs, and ideas.</li> <li>___ Points are logically related throughout the response.</li> <li>___ Details fit where placed.</li> </ul>	<ul style="list-style-type: none"> <li>___ Format is consistent but inappropriate.</li> <li>___ Introduction and conclusion are unexceptional.</li> <li>___ Transitions may be repetitive, stilted, or commonplace.</li> <li>___ Points are logically related, but skeletal and/or rigid.</li> <li>___ Details may not always be effectively placed.</li> </ul>	<ul style="list-style-type: none"> <li>___ Format is unrecognizable.</li> <li>___ Introduction and conclusion are undeveloped or not present.</li> <li>___ Transitions are lacking, ineffective, and/or overused.</li> <li>___ Relationship and sequence among points are unclear and/or ineffective.</li> <li>___ Details are limited and/or randomly placed.</li> </ul>

**III. FLUENCY**

High Range 6-5	Mid Range 4-3	Low Range 2-1
<ul style="list-style-type: none"> <li>___ Sentence structure enhances relationships among ideas.</li> <li>___ Sentence structure is effectively varied with fragments used only for effect.</li> <li>___ Fluency is demonstrated with one sentence flowing into the next.</li> <li>___ Use of words is accurate, specific, and/or varied.</li> <li>___ Language is carefully placed for impact.</li> </ul>	<ul style="list-style-type: none"> <li>___ Sentence structure requires rereading to clarify ideas.</li> <li>___ Control is present in simple but not complex sentence structure.</li> <li>___ Repetitive sentence structure may detract from flow of ideas.</li> <li>___ Use of words may be accurate and specific with some exceptions.</li> <li>___ Language may rely on overused expressions.</li> </ul>	<ul style="list-style-type: none"> <li>___ Sentence structure frequently obscures meaning.</li> <li>___ Sentence patterns are simple, monotonous, and/or confusing.</li> <li>___ Choppy or rambling sentence structure damages the flow of ideas.</li> <li>___ Use of words is imprecise, inadequate, or wrong.</li> <li>___ Original writing is too limited to demonstrate sentence fluency and word choice.</li> </ul>

**IV. CONVENTIONS**

High Range 6-5	Mid Range 4-3	Low Range 2-1
<ul style="list-style-type: none"> <li>___ Both internal and end-of-sentence punctuation are used effectively.</li> <li>___ Spelling of both common and difficult words is correct.</li> <li>___ Capitalization is correct.</li> <li>___ Paragraph breaks reinforce organizational structure.</li> <li>___ Correct grammar and usage contribute to clarity.</li> <li>___ Proper citation of sources is evident.</li> </ul>	<ul style="list-style-type: none"> <li>___ End-of-sentence punctuation may be correct; internal errors are common.</li> <li>___ Spelling errors, even in common words, may distract the reader.</li> <li>___ Capitalization is sometimes incorrect.</li> <li>___ Paragraph breaks may run together or occur too frequently.</li> <li>___ Errors in grammar and usage distract the reader.</li> <li>___ Occasional lapses in citation of sources occur.</li> </ul>	<ul style="list-style-type: none"> <li>___ Basic punctuation is omitted, inconsistent, or incorrect.</li> <li>___ Frequent spelling errors impair readability.</li> <li>___ Capitalization is inconsistent, incorrect, or random.</li> <li>___ Paragraph breaks bear no relation to the organization of the text.</li> <li>___ Errors in grammar and usage interfere with or prevent meaning.</li> <li>___ Little or no citation of sources is present.</li> </ul>

APPENDIX H

Strengths and Difficulties Questionnaire

T 11-17

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of this student's behavior over the last six months or this school year.

Student's name .....

Male/Female

Date of birth.....

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restless, overactive, cannot stay still for long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often complains of headaches, stomach-aches or sickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shares readily with other youth, for example pencils, books, food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often loses temper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Would rather be alone than with other youth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally well behaved, usually does what adults request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many worries or often seems worried	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helpful if someone is hurt, upset or feeling ill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Constantly fidgeting or squirming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has at least one good friend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often fights with other youth or bullies them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often unhappy, depressed or tearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally liked by other youth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easily distracted, concentration wanders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nervous in new situations, easily loses confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kind to younger children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often lies or cheats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Picked on or bullied by other youth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often offers to help others (parents, teachers, children)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thinks things out before acting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steals from home, school or elsewhere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gets along better with adults than with other youth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many fears, easily scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good attention span, sees work through to the end	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you have any other comments or concerns?

## APPENDIX I

## SYSTEMATIC SCREENING FOR BEHAVIOR DISORDERS

**Instructions**

**Step One:** Carefully study the definitions and examples of externalizing and internalizing behavior problems presented on pages 2 and 3.

**Step Two:** Select an externalizing and an internalizing student group from the students in your class.

Get a copy of your class roster. For both externalizing and internalizing dimensions, review the characteristic behavior patterns of ALL students in your class and select the ten students who most closely match each of the behavior profiles. Second, write the names of the ten students on each of the forms (internalizing and externalizing) whose characteristic behavior patterns most closely match those behavioral dimensions in Column One. The order or magnitude of the behaviors is not important at this point. The goal is simply to identify the groups of internalizing and externalizing students.

- It is very important that you select the externalizing and internalizing groups according to how they actually behave (i.e., what they say and do) and not according to either the presumed intent of their behavior or what you infer they may be thinking and feeling. The definitions and examples of externalizing and internalizing dimensions should be the sole criteria used to form the externalizing and internalizing groups (n=10 each).
- Even if you feel you do not have 10 students in your class who match the behavioral descriptions, it is important that you go ahead and make that difficult judgment. It is essential that ten students each be identified for the two dimensions in order to assure that all students are adequately screened for the two behavior patterns.
- Students in the Externalizing and Internalizing lists must be mutually exclusive. That is, a single student can appear on only one of the lists—not both! The authors recognize that occasionally a pupil will exhibit behavioral characteristics associated with both externalizing and internalizing behavior patterns. When this occurs, simply judge the student on the dimension (i.e. externalizing or internalizing) which seems to best characterize her/his overall behavior pattern. The accuracy of the screening is often adversely affected by having a student's name on both lists. If a teacher is concerned about a student's behavior problems, then that student is likely to be high ranked on either the externalizing or internalizing behavioral dimension and be eligible for further screening.
- Do not include the names of any students you have known less than one month on either the externalizing or internalizing groups.

**Step Three:** Rank order each of the students on each of your externalizing and internalizing lists.

Use the second column to rank order the ten students listed in column one who manifest externalizing and internalizing behavior problems according to the degree or extent that their behavior matches the definition of each of the respective dimensions of behavior problems.

The student in your class assigned the rank of number one is the individual who, in your judgement, most exemplifies the externalizing or internalizing behavioral profile described below. The student who receives the rank of 10 is the one who least exemplifies this behavioral profile. Rank order students based on your observations and interactions with them during the past month or longer.

## SSBD Stage Two Rating for Internalizing Students

### Critical Events Index

Hill M. Walker, Ph.D. & Herbert H. Severson, Ph.D.

Date \_\_\_\_\_ Teacher \_\_\_\_\_ School \_\_\_\_\_

Student \_\_\_\_\_ Sex \_\_\_\_\_ Grade \_\_\_\_\_

**Check one:** Stage One SSBD Rank: 1 \_\_\_\_\_ 2 \_\_\_\_\_ or 3 \_\_\_\_\_

**INSTRUCTIONS:** Check each behavior from the list below that you are aware the student has exhibited during this school year.

- \_\_\_ 1. Steals.
- \_\_\_ 2. Sets fires.
- \_\_\_ 3. Vomits after eating.
- \_\_\_ 4. Has tantrums.
- \_\_\_ 5. Physically assaults an adult.
- \_\_\_ 6. Exhibits painful shyness.
- \_\_\_ 7. Exhibits large weight loss or gain over past three months. (Significant weight fluctuation would be in excess of 20% change in body weight.)
- \_\_\_ 8. Exhibits sad affect, depression and feelings of worthlessness to such an extent as to interfere with normal peer and classroom activities.
- \_\_\_ 9. Is physically aggressive with other students or adults (hits, bites, chokes, or throws things).
- \_\_\_ 10. Damages others' property (academic materials, damages personal possessions).
- \_\_\_ 11. Demonstrates obsessive-compulsive behaviors. (Student can't get his/her mind off certain thoughts or obsessions.)
- \_\_\_ 12. Reports having nightmares or significant sleep disturbances.
- \_\_\_ 13. Engages in inappropriate sexual behaviors (masturbation, exposes self).
- \_\_\_ 14. Is self-abusive (biting, cutting or bruising self, head banging).

## Combined Frequency Index for Adaptive and Maladaptive Behavior

Hill M. Walker, Ph.D. & Herbert H. Severson, Ph.D.

**Instructions** The numbers 1 through 5 are a continuous scale and are used to indicate your estimate of the frequency with which each item occurs for a given student. Circle a number between 1 and 5 to represent the frequency of a given item. Complete the scale in relation to your observations of the student during the past 30 days.

### Adaptive Student Behavior

Never   Sometimes   Frequently

- |                                   |  |      |   |
|-----------------------------------|--|------|---|
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (1)  | Follows established classroom rules.  |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (2)  | Is considerate of the feelings of others.   |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (3)  | Produces work of acceptable quality given her/his skill level.  |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (4)  | Gains peers' attention in an appropriate manner.  |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (5)  | Expresses anger appropriately, e.g., reacts to situation without being violent or destructive.  |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (6)  | Cooperates with peers in group activities or situations.  |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (7)  | Makes assistance needs known in an appropriate manner, e.g., asks to go to the bathroom, raises hand when finished with work, asks for help with work, etc. |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (8)  | Is socially perceptive, e.g., "reads" social situations accurately.   |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (9)  | Does seat-work assignments as directed.   |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (10) | Compliments peers regarding their behavior or personal attributes, e.g., appearance, special skills, etc.   |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (11) | Complies with teacher requests and commands.  |
| 1 . . . 2 . . . 3 . . . 4 . . . 5 |  | (12) | Initiates positive social interactions with peers.  |

Total Adaptive Behavior Score

APPENDIX J  
SETTING EVENT FORM

Teacher		Friday	Monday	Tuesday	Wednesday	Thursday
Mr.	1st pd Educ. (+)					
Lane	1st pd Resp. Bx/Bns (+)					
GA Studies	1st pd Spending (-)					
<b>1st pd Subtotal</b>		50+5	50	50	50	50
Ms.	2nd pd Educ. (+)					
Sherrill	2nd pd Resp. Bx/Bns (+)					
Phy. Sci.	2nd pd Spending (-)					
<b>2nd pd Subtotal</b>		50	50	50	50	50
Ms.	3rd pd Educ. (+)					
Tosha	3rd pd Resp. Bx/Bns (+)					
Reading	3rd pd Spending (-)					
<b>3rd pd Subtotal</b>		50	50	50	50	50
Ms.	4th pd Educ. (+)					
Kathleen	4th pd Resp. Bx/Bns (+)					therapy
Lang. Arts	4th pd Spending (-)					
<b>4th pd Subtotal</b>		50	50	50	50	50
Ms.	5th pd Educ. (+)					
Marisa	5th pd Resp. Bx/Bns (+)					
Math	5th pd Spending (-)					
<b>5th pd Subtotal</b>		50	50	50	50	50
Specials	6th pd Educ. (+)					
	6th pd Resp. Bx/Bns (+)					
	6th pd Spending (-)					
<b>6th pd Subtotal</b>		0	50	50	50	50
<b>Daily Point Total</b>		255	300	300	300	300
						<b>Grand Total Points</b>
						1455

## APPENDIX K

## SRSD LESSON TREATMENT FIDELITY

**STOP & DARE**  
**Lesson 1 – Day 1**

**Teacher:** \_\_\_\_\_ **Period:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Please check is step was completed and place an X if a step was skipped/omitted. Write NA if you did not get to a step for unforeseen circumstances and will finish it during the next class period (e.g., class ended early, major behavior incident).**

**I. Introduce Strategy (~5 min)**

- \_\_\_ A. Teacher introduces persuasive essays.  
 \_\_\_ B. Students provide examples.

**II. Introduce Relevance (~10 min)**

- \_\_\_ A. Teacher shares advantages of persuasion.  
 \_\_\_ B. Students provide examples.  
 \_\_\_ C. List generated on board.  
 \_\_\_ D. Teacher explains advantage of persuading in an essay.

**III. Introduce STOP (~20 minutes)**

- \_\_\_ A. Project the STOP chart on board.  
 \_\_\_ B. Explain STOP.  
 \_\_\_ C. Distribute blank STOP signs.  
 \_\_\_ D. Teacher introduces S.  
 \_\_\_ E. Students define suspend.  
 \_\_\_ F. Students define judgment.  
 \_\_\_ G. Teacher introduces T.  
 \_\_\_ H. Students share importance of taking a side.  
 \_\_\_ I. Teacher introduces O.  
 \_\_\_ J. Students explain why it is important to refute opposing viewpoints.  
 \_\_\_ K. Teacher introduces P.

**IV. Wrap Up the Lesson (~5 min)**

- \_\_\_ A. Teacher and students say STOP together.  
 \_\_\_ B. Students tell what they like about the strategy/becoming a persuasive writer.  
 \_\_\_ C. Teacher tells students tomorrow we will learn DARE.

Total Steps Completed \_\_\_/Total Steps Possible (20) \_\_\_ = \_\_\_ \*100= \_\_\_%

Observer \_\_\_\_\_

IOA: Yes No

2<sup>nd</sup> Observer: \_\_\_\_\_

IOA=Total agreements \_\_\_/Total Agreements + Disagreements \_\_\_ x100= \_\_\_%

## APPENDIX L

## EFFECTIVE TEACHING PROCEDURES FIDELITY

**Effective Instruction and PBIS  
Fidelity Checklist**

**Teacher:** \_\_\_\_\_ **Date:** \_\_\_\_\_

	<b>Did not observe (0)</b>	<b>Observed some of the time - inconsistent (1)</b>	<b>Observed most of the time – consistent (2)</b>	<b>NA</b>
Teacher engages students in discussion where indicated.				
Students respond to questions and contribute to discussion.				
Teacher modifies to students' questions, answers, and needs appropriately.				
Teacher is well-prepared, positive, and makes smooth transitions.				
Lesson pace is appropriate.				
Teacher has all materials listed or appropriate alternatives.				
Instruction is criterion-based (teacher doesn't move on until 80% of students have mastered the skill being taught).				
<i>Teacher reminded students of behavioral expectations.</i>				
<i>Teacher had PBIS signs or posters posted in the classroom.</i>				
<i>Teacher provided appropriate positive (e.g., STAR coupon, behavior-specific praise) and negative (e.g., ignore, separation) consequences during the lesson.</i>				

Total Points Earned \_\_\_\_\_ / Total Points Possible \_\_\_\_\_ = \_\_\_\_\_ \* 100 = \_\_\_\_\_ %

Observer \_\_\_\_\_

IOA: Yes No

2<sup>nd</sup> Observer: \_\_\_\_\_

IOA = Total agreements \_\_\_\_\_ / Total Agreements + Disagreements \_\_\_\_\_ x 100 = \_\_\_\_\_ %

## APPENDIX M

## INTERVENTION RATING PROFILE-15

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
This is an acceptable intervention for the child's problem behavior and academic needs.	1	2	3	4	5	6
Most teachers would find this intervention appropriate for students' academic and behavioral needs.	1	2	3	4	5	6
This intervention should be effective in changing the child's achievement and behavior.	1	2	3	4	5	6
I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
The child's behavioral and academic needs are severe enough to warrant use of this intervention.	1	2	3	4	5	6
Most teachers would find this intervention suitable for the academic needs and behavior problem described.	1	2	3	4	5	6
I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
This intervention should not result in negative side effects for the child.	1	2	3	4	5	6
This intervention is appropriate for a variety of children.	1	2	3	4	5	6
This intervention is consistent with those I have used in the classroom.	1	2	3	4	5	6
The intervention is a fair way to handle the child's academic needs and problem behavior.	1	2	3	4	5	6
This intervention is reasonable for the student's academic needs and behavior problems.	1	2	3	4	5	6
I like the procedures used in this intervention.	1	2	3	4	5	6
This intervention should be a good way to handle the child's behavior and academic needs.	1	2	3	4	5	6
Overall, this intervention should be beneficial for the child.	1	2	3	4	5	6

## APPENDIX N

## CHILDREN'S INTERVENTION RATING PROFILE

	I do not agree					I agree
The writing intervention sounds fair.	1	2	3	4	5	6
I think the writing teacher will be too tough on me.	1	2	3	4	5	6
The writing intervention may cause problems with my friends.	1	2	3	4	5	6
There are better ways to help me be a good writer than the one described to me.	1	2	3	4	5	6
The writing intervention described would be a good one to use with other students.	1	2	3	4	5	6
I think I will like the writing intervention described to me.	1	2	3	4	5	6
I think that writing intervention will help me do better in school.	1	2	3	4	5	6