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Self-Regulated Strategy Development for High School Students with Emotional/Behavioral Disorders

Bobby R. Schwark

brschwark@stcloudstate.edu

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Self-Regulated Strategy Development for High School Students with

Emotional/Behavioral Disorders

by

Bobby Schwark

A Starred Paper

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree

Master of Science in

Special Education

April, 2017

Starred Paper Committee:
John Hoover, Chairperson
Bradley Kaffar
Trae Downing

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Chapter 1: Introduction

Students in the United States with emotional or behavioral disorder (EBD) struggle academically more than any other group of students. While students with EBD typically lack motivation to withstand frustration, they continue performing behind grade level in academic skills (Nelson, Benner Lane, & Smith, 2004). During the elementary school years, students with EBD start learning skills at a slower rate compared to non-disabled peers, and continue falling further behind as they progress through high school (Trout, Nordness, Pierce, & Epstein, 2003). Academic deficits result in high school students with EBD lagging an average two grade levels behind non-disabled peers, while acquiring one of the worst graduation rates (32.1%) of students with any disability (U.S. Department of Education, 2006). Furthermore, within a 5-year period after leaving high school, students with EBD manifest an unemployment rate of 46% (Bullis, Moran, Benz, Todis, & Johnson, 2002).

Writing is a critical skill that students must demonstrate in order to communicate ideas, and demonstrate understanding (Graham, & Perin, 2007); writing is also a foundational skill that can support and promote learning across all academic subjects (Bak & Asaro-Saddler, 2013). Because writing often occurs without planning, organizing or developing ideas, students with EBD often do not demonstrate complete sentence structure and manifest incomplete ideas. Inadequate writing skills can lead to underachievement in all subject areas, an unfavorable outlook on education, and ultimately a devaluation of education (Little, Lane, Harris, Graham, Story, & Sandmel, 2010).

Self-Regulated Strategy Development

Successful writing requires that students set goals, self-monitor, self-instruct, and self-reinforce (Lane, Graham, Harris, & Weisenbach, 2006). Self-regulated strategy development (SRSD) is one of the most promising strategies for improving the quality of student writing (Graham, McKeown, Kiuhara, & Harris, 2012) because it provides goal setting and self-monitoring strategies needed to succeed independently. In turn, this can lead to increased confidence, and a desire to continue learning. Self-regulated strategy development accomplishes this through a six step process which includes: (1) present background information on SRSD success, (2) discuss strategy components, (3) model strategy use, (4) memorize steps of a mnemonic, (5) support student learning through differentiated direct instruction, and (6) transition the process to students for independent performance (Harris & Graham, 1996).

The purpose of this paper was to review case studies and determine if self-regulated strategy development effectively increases the writing ability of high school students with EBD. Specific attention is given to students who attend alternative educational settings, especially when they do not attend school on a consistent basis.

Research Question

One question guided this literature review: What is the size of the effect for self-regulated strategy development (SRSD) on the writing skills of high school students identified with emotional/behavioral disorder (EBD)?

Focus of the Review

I have identified nine studies to include in the review of literature in Chapter 2. The studies took place between 2009 and 2016, and have been included because of their information

on statistics and success rates of SRSD when applied to high school students with EBD who were behind grade level in writing, especially when they did not regularly attend class. The articles have been peer reviewed, and results have been verified to include significantly relevant data.

Academic Search Premier was the primary source for journal selection; Minnesota Department of Education, and Google Scholar have supplemented my research. Specific keywords were used in my searches including: *EBD, SRSD, truancy, and high school.*

Importance of the Topic

The importance of communicating effectively with writing cannot be underestimated. Writing is the most identifiable piece of work associated with a student's achievement in high school, college, the work place, and in the community (Graham & Perin, 2007). Many students with EBD lack motivation to confront the frustration of learning how to write effectively (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). While all subject areas can be negatively affected by writing deficits, using SRSD in EBD classrooms may assist educators to break through barriers allowing students to obtain skills, gain confidence, and increase desire to learn effective writing. Becoming a successful writer can increase a student's performance across all content areas, therefore, increasing their positive attitude toward school, their academic success, and having a better projection for future success (Bak & Asaro-Saddler, 2013).

Definition of Terms

Emotional behavioral disorder (EBD) can be defined as a pattern of responses that adversely affect the educational, developmental, or social performance of a student. These behaviors include: (a) withdrawal or anxiety, depression, problems with mood or feelings of self-worth; (b) disordered thought processes with unusual behavior patterns and atypical communication styles; (c) aggression, hyperactivity or impulsivity (Individuals with Disabilities Education Improvement Act, 2004).

Graphic organizers are defined as a communication tool that uses visual symbols to express knowledge, concepts, thoughts or ideas, and the relationship between them (Bak & Asaro-Saddler, 2013).

Modeling can be defined as observers patterning their behaviors, strategies, thoughts, and beliefs, and affects after those of one or more models (Harris & Graham, 1996).

Mnemonic can be defined as a device for improving memory, such as a pattern of letters, ideas, or associations (Bak & Asaro-Saddler, 2013).

Scaffolding can be thought of as a process through which a teacher adds supports for students in order to enhance learning, and aid in the mastery of tasks through systematically building on students' experiences and knowledge as they are learning new skills (Harris & Graham, 1996).

Self-instruction can be defined as use of induced self-statements to direct or self-regulate behavior (Bak & Asaro-Saddler, 2013).

Self-regulation can be defined as obtaining goals through a systematic process of independent monitoring of progress being made toward an end goal (Bak & Asaro-Saddler, 2013).

Self-reinforcement can be defined as a process whereby individuals control their own behavior by rewarding themselves when a certain standard of performance has been attained or surpassed (Bak & Asaro-Saddler, 2013).

Chapter 2: Review of Literature

The self-regulated strategy development (SRSD) model has been used successfully in general education classes to increase writing skills of students without disabilities. This strategy has also been used to improve writing for students with learning disabilities. Research related to students with emotional or behavioral disorder (EBD) has been limited, especially those attending high school. In the studies reviewed in this chapter, researchers investigated the effectiveness of SRSD in increasing writing skills of high school students with EBD.

Summary of Chapter 2 Research
   to be Reviewed

I included nine studies, which researched the effectiveness of SRSD on high school students with EBD. Table 1 summarizes the findings of these studies.

Table 1

Summary of Chapter 2 Findings

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Mason, Kubina, & Hoover (2013)	Multiple baseline/ Single subject models	Three high school students with Emotional Disturbance.	The participants received instruction in general education class. Two students received SRSD instruction through special education staff. The third person received no support.	Participants with support manifested better organization and demonstrated increased performance in persuasive writing skills.
Bak & Asaro-Saddler (2013)	Critical Review	Previous published research on SRSD.	Articles were consolidated to give an outline of how to use SRSD effectively.	Students with EBD can use SRSD to develop a high level of self-efficacy about their ability to reach academic goals.

Table 1 (continued)

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
McKeown, Fitzpatrick, & Sandmel (2014)	Meta-Analysis	Three previous studies on how practice-based professional development can improve SRSD instruction for students with EBD.	Studies were reviewed to suggest how PBPD can be used to increase writing skills for students with EBD.	PBPD successfully helped teachers learn to teach SRSD with fidelity.
Ennis, Harris, Lane, & Mason (2014)	Meta-Analysis	Nine previous studies on SRSD in alternative settings.	Previous studies were reviewed and the lessons learned were combined in this study.	Barriers were identified for researchers and students when teaching SRSD to students in AE settings and possible solutions were outlined.
Sreckovic, Common, Knowles, & Lane (2014)	Meta-Analysis	Five previous studies on various teaching strategies.	Seven quality indicators were used to establish valid data.	SRSD is an educational best practice for writing instruction for students with EBD.
Reid, Hagaman, & Graham (2014)	Meta-Analysis	27 students with ADHD ranging in grades from second to twelfth grade.	12 independent studies were reviewed to locate the 27 participants. Data were compared to a baseline.	SRSD can be successful to students with ADHD, however, there were limitations to the research as all participants were part of individual studies.
Ennis & Jolivette (2014)	Multiple probe, multiple baseline/ Single-subject designs	Three ninth grade students with EBD in a residential setting.	After a baseline was established SRSD instruction was given 2-3 days per week for 40 minutes in a separate classroom.	Writing skills were improved and the academic performance in the health class improved.
Ennis, Jolivette, Terry, Fredrick, & Alberto (2015)	Multiple probe, multiple baseline/ Single subject designs	44 middle and high school students attending a residential school and enrolled in a language arts class.	SRSD was taught two days per week using the STOP and DARE mnemonic and compared to baseline data.	Significant gains were made when using SRSD in residential facilities.
Ennis (2016)	Multiple probe, multiple baseline/ Single subject design	Three ninth grade students with EBD in a residential setting.	SRSD was taught in a non-language arts setting.	Significant gains were made when using SRSD in a non-language arts setting.

Review of SRSD Studies

The studies presented in this chapter follow an order in which first introduces the history of using SRSD as a writing intervention for high school students with EBD. Next, SRSD is validated as an evidence-based practice, and finally, different settings are investigated in which SRSD has been used successfully.

Bak and Asaro-Saddler (2013) analyzed past studies to examine methods, effectiveness, and best practice of SRSD. Once data were analyzed, the authors used the results to support SRSD's effectiveness with students with EBD. At the time of this study, most research had been conducted with elementary and middle school students; the authors pointed out the need for further study in high school EBD settings.

Bak and Asaro-Saddler (2013) identified how common behaviors of EBD students affect writing ability. Students with EBD often trail one to two grade levels behind peers in all academic subjects. Students with EBD share a low tolerance for frustration, which makes it difficult to maintain engagement in academic activities. Also, students with EBD do not exhibit ample planning behaviors, and planning is underdeveloped or unorganized. Finally, students with EBD share maladapted motivational patterns, which make it difficult to sustain engagement throughout the writing process.

Self-regulated strategy development promotes self-instruction and self-reinforcement, and these qualities need reinforcement with students with EBD. Self-regulated strategy development was developed to increase writing skills using specific strategies for several writing genres while assisting students to engage in planning, drafting, revising, and publication. Strategies include a genre-specific mnemonic that guides students through writing

processes; through modeling, guided practice, and independent practice, students learn to create a complete writing document.

Via SRSD, practitioners employ six instructional stages to improve student writing knowledge, strategic behavior, self-regulation, and motivation. In Stage 1 of SRSD, develop background knowledge, the instructor begins with a discussion about elements included in a specific genre. Students are assisted in developing a purpose for writing, which includes short term and long term goals. Students' prior knowledge is activated and new knowledge is meaningfully added to their base. In this stage, the instructor provides a model paper, and begins to make a connection between elements and purposes of writing. Mnemonics are also introduced in Stage 1, and through discussion, are tied to story elements that make a complete writing passage. Bak and Asaro-Saddler (2013) offered several examples of mnemonics, and the genre of writing that they are intended. Table 2 shows some examples.

Table 2

Mnemonic Devices for Use with the SRSD Model

MNEMONIC	GENRE	PROMPTS
POW	All genres	Pick my idea Organize my notes Write and say more

WWW, What=2, How=2	Story writing	WWW
		  Who is the main character?
		  When does the story take place?
		  Where does the story take place?
		What=2
		  What does the main character do or want to do?
		  What do other characters do?
		  What happens then? What happens with other characters?
		How=2
		  How does the story end?
		  How does the main character feel? How do other characters feel?

Table 2 (continued)

MNEMONIC	GENRE	PROMPTS
TREE	Persuasive	Topic sentence: Tell what you believe Reasons 3 or more: Why do I believe that? Will my readers believe this? Explain Reasons: Say more about each reason Ending: Wrap it up right!

During Stage 2, discuss it, the instructor engages in discussion about each letter of the mnemonic while several samples are provided to students, and the instructor points out how different authors use structure of mnemonics to create a complete writing sample. Once the instructor has modeled this practice, students identify mnemonic elements for different passages in a group discussion. As students gain ability to identify story elements in a group, they are given a graphic organizer for a specific mnemonic, and they fill in story or essay elements. Stage 2 ends with discussion about goal setting. Students first review a piece of their own writing that was completed prior to SRSD instruction, then identify their own present level of performance based on strengths and weaknesses, and finally identify areas where they can improve. Present levels are graphed on a chart, and each student makes tiered goals based on increasing the number of story elements included in their writing. Each student's final goal will be mastery to include all story elements.

Stage 3, model it, begins with rehearsal of the mnemonic, so students become fluent with components, and use them when they plan, draft, revise, and evaluate their writing. The third stage continues with the instructor modeling the complete SRSD writing process. Next, the instructor emphasizes use of graphic organizers with notes (not full sentences) until all story

elements are included. The instructor also models the use of self-statements, such as "How shall I start?" or "Did I include all of the story elements?" Modeling of these statements builds skills needed in self-monitoring and self-reinforcement.   Stage 3 ends with the instructor modeling how to evaluate and acknowledge inclusion of each mnemonic component, while stating any improvements that will be made in future passages. Finally, progress is recorded on progress charts.

Stage 4, memorize it, consists of the instructor evaluating each student's ability to recite the mnemonic. If students cannot do this, more practice is needed. Once students have demonstrated ability to remember and understand the mnemonic, they move on to Stage 5.

Stage 5, support it, consists of collaborative writing exercises, where the instructor uses scaffolding or other teaching strategies to assist students in producing a quality writing sample. This stage begins with support of graphic organizers, however, the graphic organizer is faded, and students organize notes and story components without this aid. Self-monitoring is prompted by the instructor, and students check their own work for inclusion of all parts of the mnemonic.

In the final stage (Stage 6), instructors ascertain that independent performance occurs, when students no longer need support. Students direct themselves through the writing process, and instructors become a guide to the students.

The SRSD process provides opportunities for differentiated instruction, stages to be repeated, and for individuals to progress at their own pace. Bak and Asaro-Saddler (2013) wrote that adaptations to this process are not needed to benefit students with EBD because SRSD incorporates processes that are known to be educational best practices for students with

EBD. SRSD provides a consistent procedure, increased opportunities for student response,

teacher praise, self-management techniques, and mediated scaffolding. Table 3 summarizes the

steps for SRSD instruction.

Table 3

Stages of Self-Regulated Strategy Development

STAGE	ACTION	DESCRIPTION
Stage 1	Develop Background Knowledge	Teacher explained the strategy and how it will help the writer Teacher gained a commitment to learn the strategy Student's baseline performance was established
Stage 2	Discuss It	Teacher explained the steps and components of the strategy Teacher explored student's current attitudes and beliefs Teacher introduced the concept of self-talk, self-reinforcement, and self-monitoring
Stage 3	Model It	Teacher modeled using all the components of the strategy including self-regulatory behaviors Teacher worked through the entire task (i.e. writing an essay) while thinking aloud to emphasize each step of the strategy
Stage 4	Memorize It	Student memorized the steps of the mnemonic in the strategy This step may not be on its own discrete stage, depending on the needs of the student
Stage 5	Support It	Collaboratively, teacher and student set goals and used the strategy Teacher faded support as appropriate
Stage 6	Independent Performance	Student was given the opportunity to engage in using the strategy independently after sufficient guided practice Student engaged in planning, composing, reviewing, and evaluating work using the strategy and self-regulatory behaviors

Sreckovic, Common, Knowles, and Lane (2014) conducted a meta-analysis of five

previous studies that have met rigorous quality indicators. The authors' intent was to use

previous research, and determine if SRSD met standards to become an evidence-based practice

(EBP) for students with EBD. Five standards needed to be met in order to be considered EBP:

(a) the practice is operationally defined; (b) the context and outcomes associated with the

practice are clearly defined; (c) the practice is implemented with documented fidelity; (d) the practice is functionally related to change in valued outcomes; and (e) experimental control is demonstrated across a sufficient range of studies, researchers, and participants to allow confidence in the effect.

A systematic search with multiple criteria identified 105 articles which, through extensive scrutiny were deemed to meet quality indicator standards. Thus, Sreckovic et al. (2014) narrowed to five single case design (SCD) studies. Criteria for inclusion in this study had to: (a) be true experimental or quasi-experimental design and report statistical results in text or graphic display; (b) include participants identified, or considered, at-risk for an EBD label; (c) include interventions that were implemented in an educational school setting; (d) feature an SRSD writing intervention, and writing outcomes needed to be measured; and (e) be written in English and published in peer-reviewed journals. Studies included participants ranging from second to 11th grade, and were classified as at-risk for EBD or labeled EBD.

In all studies, a functional relationship between SRSD instruction and an increase in writing ability was found, ranging from small to large effect. Resulting data clearly shows SRSD writing instruction has a strong, positive impact on writing for students with EBD. Srekovic et al. (2014) validated SRSD as an EBP for students with EBD across a variety of ages including elementary, middle, and high school. Table 4 demonstrates the effect of SRSD on students with EBD in this meta-analysis. Tau-U is a method for measuring non-overlapping data between two phases, and confidence interval describes the amount of uncertainty associated with the sample population.

Table 4

Nonparametric Effect Sizes for Single Case Design Studies Based on Tau-U

STUDY	DEPENDENT VARIABLE	TAU-U	95% CI
Lane et al. (2008)	Story elements	1.02*	[0.65, 1.38]
Lane et al. (2010)	Essay elements (OS)	0.97*	[0.47, 1.47]
	Story elements (E)	1.07*	[0.74, 1.40]
Little et al. (2010)	Essay elements (E)	1.10*	[0.78, 1.43]
	Essay elements (I)	0.95*	[0.59, 1.31]
Mason et al. (2010)	Quality	1.04*	[0.75, 1.13]
	Essay parts	0.64*	[0.35, 1.93]
	Word count	-0.01	[-0.30 1.27]
Kiuhara, O'Neill, Hawken, & Graham (2012)	Essay elements	0.96*	[0.66, 1.2.7]
	Functional elements	0.99*	[0.69, 1.30]
	Quality	0.83*	[0.53, 1.14]

Note. * = p < .001; CI = confidence interval; effect sizes interpreted as follows: (a) less than .20 little to no effect, (b) .20-.49 small effect, (c) .50-.79 moderate effect (Cohen, 1988). E = externalizing; I = internalizing; OS = older students; YS = younger students.

Sreckovic et al. (2014) examined SRSD as a writing EBP for students with EBD. Results of their study clearly show the positive effects of SRSD on writing performance. The efficacy of SRSD for this population has been demonstrated across a variety of age ranges and it has been socially validated by teachers and students. The authors conclude that SRSD is an EBP and therefore a valuable tool to be used to increase writing performance of struggling students with EBD.

Mason et al. (2013) conducted one of the earliest studies on effectiveness of SRSD as a writing strategy for high school students with EBD. A multiple baseline study was used on two

11th grade students and one ninth grade student with EBD to determine effects of SRSD instruction on quality, number of persuasive parts written, and number of words written in a 10-minute persuasive quick-write. The instructor was a non-classroom teacher, trained in SRSD, and used the POW + TREE mnemonic. Assessment and instruction for each student occurred in 30-minute one-on-one sessions outside of classroom hours. Baseline data were collected with at least five pre-assessment probes, followed by instruction, then at least six post-instruction probes. Finally, two maintenance probes were given several weeks later.

The six stages of SRSD were taught during a minimum of five instructional units, where students would not advance to the next stage until proficiency and understanding was demonstrated. The final lesson included instruction on how to use SRSD within a 10-minute time limit. Quality was scored using a seven point holistic scale where trained raters evaluated writing responses. Persuasive parts was scored on a seven point scale based on one point for each part of a paragraph included. Finally, number of words was scored by counting total number of words included. All participants showed improvement in quality, number of parts, and number of words. Average writing performance is shown in Table 5.

Table 5

Quick Write Results

	BASELINE M (SD)	INSTRUCTION M (SD)	POST-INSTRUCTION M (SD)	MAINTENANCE M (SD)
Quality	3.02 (.70)	5.39 (1.29)	5.04 (1.25)	5.6 (.71)
Number of Parts	4.66 (1.26)	7.52 (1.09)	7.45 (.88)	7.67 (1.42)
Number of Words	71.73 (18.82)	117.63 (22.75)	109.83 (20.65)	126.17 (22.86)

Through implementation of SRSD instruction, all three participants demonstrated consistent growth. Participants demonstrated a dramatic spike during the instruction period followed by a slight post-instruction decline. Maintenance probe data, however, suggests that strategies and skills learned from SRSD instruction have enhanced and improved participants' overall writing performance.

Ennis et al. (2014) conducted a meta-analysis of nine studies that investigated SRSD instruction in alternative education settings (AE), and included students with EBD ranging from grades 3 through 12. Many similarities were found in these studies, which provided evidence to researchers in how to improve quality of instruction. In the multitude of studies, instruction was given to students by researcher, by teacher, by graduate student, and by volunteer; students were instructed in classroom settings and small groups.

Alternative education settings for students with EBD present unique environmental barriers to SRSD instruction that were outlined in the analysis. Multiple studies found frequent interruptions to instruction due to need-based counseling, time-out procedures, and scheduling issues. Small group presentations were necessary to minimize interruptions and to allow lessons to be completed effectively in the allotted time. Occasionally, one-on-one instruction was needed when behavioral issues took priority. Instruction was found to take longer in AE settings than it had in prior studies, in part due to scheduling difficulties, behavior issues, and truancy. Another similarity between many of the studies was notation of importance to provide teachers with extensive training and fidelity monitoring during the intervention. Qualified and energetic staff are needed for SRSD to work for students with EBD in AE settings.

Ennis et al. (2014) identified academic and behavioral barriers for students with EBD in AE settings. Low academic engagement, poor language and academic skills, severe behavior problems, frequent absences, and transient population interrupt learning processes. To address low academic engagement, researchers and teachers need to promote student motivation during the entire process, especially in Stages 1 and 2. The authors encourage use of celebrating student success and achievement through self-graphing; students often commented on how they feel proud to see improvement and set higher goals because of graphing. Staff should allow students to actively respond during teaching processes in order to increase academic engagement, decrease problem behaviors, and increase accuracy of responses. Many responses are based on student opinion, which if encouraged can lead to an increase of student success. Finally, frequency in which data is collected should be minimized during the instruction stage, because students with EBD often reported fatigue during SRSD instruction, and taking many writing samples early in the process can lead to failure before they have learned enough to make a difference in their writing.

Severe behavior problems need to be addressed with a behavior plan, which can be school-wide, class-wide, or individualized. These plans should be proactively and consistently implemented to promote success of student behavior and SRSD instruction. A reinforcement system for participation and writing achievement could also promote student success in this area. Finally, use of common language between SRSD and other mindfulness training programs used in AE settings should be used whenever possible.

Students with EBD often have deficits in core academic areas, and they often have language deficits as compared to non-disabled peers. When teaching SRSD to this population,

additional time is needed on vocabulary to ensure comprehension and understanding is achieved before moving on to the next step. Differentiated instruction should be anticipated by the instructor based on each student's level of understanding and need. Furthermore, any technological supports that are available should be considered, such as word processors to correct spelling errors.

Many factors lead to frequent absences, such as living in high risk homes, parental depression, and living with siblings with similar disabilities. These factors result in students being prone to higher suspension rates, expulsion, or long term absences. Many AE settings also provide psychological or medical assistance which, together, lead to increased time outside of the classroom.   The authors suggest using time outside of language arts class to bridge this gap; booster sessions and tutoring designed for small group or individual sessions could bridge this gap. Also, SRSD is a proven strategy for transient students because once the mnemonic is memorized the strategy can be used in any setting.

McKeown et al. (2014) conducted a meta-analysis on three studies to investigate if SRSD instruction for students with EBD could successfully transfer from researchers to classroom teachers. Research on effectiveness of SRSD in any classroom, general or special education, has typically been done by researchers acting as the instructor. Due to the complexity of SRSD, teachers indicate a need for quality training during practice-based professional development (PBPD). PBPD delivers quality instruction because essential skills are taught and practiced until they become fluent before teachers use them in classrooms.

The first study by Harris, Lane, Graham, Driscoll, Sandmel, Brindle, and Schatschneider (2012) was a randomized control trial. After the school year began, PBPD was used to instruct

the SRSD strategy to 20 teachers. Teachers were instructed in small groups during 2 days of

PBPD on how to teach SRSD effectively. After returning to the classroom, SRSD instruction

was delivered with a high rate of fidelity (>85% for all teachers), and students demonstrated an

improvement in quality of stories from pretest to posttest (ES = 1.82).

In the second study by Kiuhara, Harris, Graham, McKeown, and Brindle (2013), 17

teachers were randomly assigned to treatment or control group. In small groups, teachers

received 2 days of PBPD on SRSD, targeting timed narrative writing assessments, and again

teachers achieved high levels of fidelity (96%) while students improved writing quality

(ES = 1.35). In the third study by McKeown (2012), three teachers received two days of PBPD

on SRSD, ongoing coaching support, and daily access to experts. Teachers implemented the

strategy with high levels of fidelity (96%), although student outcomes had mixed results,

outcomes generally improved. Table 6 shows teacher fidelity and student growth during the

studies.

Table 6

Teacher Fidelity and Student Growth

STUDY	TEACHER FIDELITY	STUDENT GROWTH
Harris, Lane, Graham, Driscoll, Sandmel, Brindle, & Schatschneider (2012)	85%	ES = 1.82
Kiuhara, Harris, Graham, Brindle, & McKeown (2013)	96%	ES = 1.35
McKeown (2012)	96%	N/A

Note. ES = effect size; N/A = not available

McKeown et al. (2014) concluded that SRSD can be effectively taught in classrooms by

teachers if it is implemented with enthusiasm and fidelity. PBPD is a process that instructs

educators with fidelity so they can effectively instruct students with EBD, and therefore remove

barriers that restrict SRSD to be instructed by researchers or other highly trained staff.

Ennis et al. (2015) designed a multiple probe, multiple baseline, across participants

design study to evaluate effectiveness of teacher implemented SRSD instruction on students with

EBD placed at a residential facility, while lowering treatment intensity two times per week. The

participants were 44 middle and high school students enrolled in a language arts class at the time

of the study, and participating instructors were three special education teachers. The Strengths

and Difficulties Questionnaire (SDQ) and the Systematic Screening for Behavior Disorders

(SSBD) were used to validate students as having either internalizing or externalizing emotional

or behavioral issues.

In order to evaluate outcome measures, Writing Fluency and Writing Samples subtests of

the Woodcock Johnson Test of Achievement, Third Edition, were administered 1 week prior to

baseline data collection, and again one week following conclusion of the intervention. Research

assistants (RAs) were trained to score pre and post writing assessments response and weekly

writing probes. The study evaluated responses to Essay Elements, Essay Quality, Correct Word

Sequence, and Academic Engagement.

During baseline testing, teachers had not been trained to deliver SRSD instruction.

Teachers instructed writing 2 days per week for 50 minutes over a 4-week baseline data

collection period. Teachers were then trained to implement the SRSD model, and were observed

by RAs to ensure treatment fidelity. SRSD instruction continued for 8 weeks while using the

STOP and DARE mnemonic (**S**uspend judgment, **T**ake a side, **O**rganize ideas, **P**lan more as you

write, and **D**evelop a position statement, **A**dd supporting ideas, **R**eport and refute counter-

arguments, **E**nd with a strong conclusion).

Resulting data showed teacher implementation of SRSD in a residential school can result

in statistically significant improvements in writing for students with EBD. Participating students

made significant gains over the course of the study in all four measures, especially during the

first 5 weeks of intervention. Although improvements were continued through weeks 6 through

8, the growth rate was not as dramatic. Table 7 displays the data.

Table 7

Growth Curve (Baseline, intervention 1-5, intervention 6-8)

	BASELINE	**INTERVENTION GROWTH WEEK 1-5**	**INTERVENTION GROWTH WEEK 6-8**
Essay Elements	-0.10	0.72	0.01
Essay Quality	0.17	0.79	0.22
Correct Word Sequence	-0.09	14.29	4.11
Academic Engagement	-1.94	-0.33	6.75

Ennis et al. (2015) intended to test effectiveness of teacher implemented SRSD

instruction to students with EBD attending a residential facility, while reducing instruction

intensity to two sessions per week. Students made significant improvements in all areas tested;

the SRSD model of instruction proved to benefit students with EBD in AE settings when

instructed by classroom teachers.

Ennis (2016) designed a multiple probe, multiple baseline, across participants design

study to evaluate effectiveness of SRSD on students with EBD to increase summary writing for

informational text in a non-language arts setting. Participants were three high school students

that were enrolled in a social studies class at the time of the study, and participating instructors were a highly trained special education teacher and the researcher. The Strengths and Difficulties Questionnaire (SDQ) and the Systematic Screening for Behavior Disorders (SSBD) were used to validate the students as having either internalizing or externalizing emotional or behavioral issues.

In order to evaluate outcome measures, Reading Fluency, Writing Fluency, and Writing Samples tests of the Woodcock Johnson Test of Achievement, Third Edition, were administered 1 week prior to baseline data collection, and again 1 week following conclusion of the intervention. A primary scorer was used to score responses to pre and post writing assessments and weekly writing probes. The study evaluated responses to Summary Elements, Quality of Written Response, and Total Written Words.

During baseline testing, students participated in daily social studies lessons taught by the special education teacher. During the intervention phase, the researcher worked with students for 40-50 minutes in one-on-one sessions to implement the SRSD strategy 2-3 days per week in a separate classroom. The TWA+PLANS mnemonic was used (**T**hink before reading, think **W**hile reading, think **A**fter reading + **P**ick goals, **L**ist ways to meet goals, **A**nd make **N**otes, **S**equence notes).

A multiple probe, multiple baseline design across participants was used to evaluate student performance at baseline and post-intervention phases. Participating students made significant gains over the course of the study in all three measures. Summary elements increased by an average of 8.46 more elements included post-intervention, quality improved by an average

of 7.41 for sentence structure, and total written words increased by an average of 97.32 more

words included. Intervention outcomes are shown on Table 8.

Table 8

Intervention Outcomes

	BASELINE (MEAN)	POST-INTERVENTION (MEAN)	IMPROVEMENT RATE (MEAN)	IMPROVEMENT RATE DIFFERENCE
Summary Elements	3.80	12.26	30.99%	100%
Quality	4.52	11.93	37.88%	100%
Total words written	42.72	140.04	30.50%	100%

Ennis (2016) completed this study to test effectiveness of SRSD on students with EBD in

a non-language arts setting. Students made significant improvements in all areas tested. The

SRSD model of instruction is an effective writing strategy for students with EBD in non-

language arts classroom settings.

Ennis and Jolivette (2014) designed a multiple probe, multiple baseline, across pairs of

participants design study to evaluate effectiveness of SRSD on students with EBD to increase

summary writing for informational text in a non-language arts setting. Participants were six-9th

grade students that were enrolled in a health class at the time of the study, and the participating

instructors were a highly trained special education teacher and the researcher. Participants were

randomly assigned in pairs, and each pair was instructed individually by the researcher.

The Strengths and Difficulties Questionnaire (SDQ) and the Systematic Screening for

Behavior Disorders (SSBD) were used to validate students as having either internalizing or

externalizing emotional or behavioral issues. In order to evaluate outcome measures, Writing

Fluency, and Writing Samples subtests of the Woodcock Johnson Test of Achievement, Third Edition, were administered 1 week prior to baseline data collection, and again 1 week following the conclusion of the intervention.   A primary scorer was used to score responses to pre and post writing assessments and weekly writing probes. The survey evaluated responses to Essay Elements, Essay Quality, and Correct Word Sequence.

During baseline testing, students participated in large-group sessions, two times per week with the regular classroom teacher. Health class topics were used for writing prompts where students took a position, formulated an argument, and provided support for the topic. Students had the entire class to write.   During the intervention phase, the researcher worked individually with each student pair for 40-50 minutes in one-on-one sessions to implement the SRSD strategy 2-3 days per week in a separate classroom. The STOP and DARE mnemonic was used.

A multiple probe, multiple baseline design across pairs of participants was used to evaluate student performance at baseline and post-intervention phases. Participating students made significant gains over the course of the study in all three measures. Essay elements increased by an average of 9.17 more elements included post-intervention, quality improved by an average of 6.35 for development, organization, and fluency, and correct word sequence increased by an average of 164.09 more words used in correct sequence. Intervention outcomes are shown on Table 9.

Table 9

Intervention Outcomes

	BASELINE (MEAN)	POST-INTERVENTION (MEAN)	IMPROVEMENT RATE (MEAN)	PERCENTAGE OF NON-OVERLAPPING DATA (MEAN)
Essay Elements	3.04	12.21	24.84%	100%
Quality	10.99	17.34	63.38%	82.22%
Correct Word Sequence	105.98	270.07	39.24%	88.89%

Ennis and Jolivette (2014) completed this study to test effectiveness of SRSD on students with EBD to increase summary writing for informational text in a non-language arts setting. Students made significant improvements in all areas tested. The SRSD model of instruction effectively increases writing ability for students with EBD in non-language arts classroom settings.

Reid et al. (2014) conducted a meta-analysis to assess effectiveness of SRSD as a writing strategy for students with attention deficit hyperactivity disorders (ADHD). Because a student is diagnosed with ADHD, they may or may not qualify for special education services under the label of EBD; this study is included in the review because some of the subjects were high school students, and qualified for EBD special education services. Furthermore, 27 students with ADHD, and ranging from second through 12th grade were included in the meta-analysis by Reid et al., however, data included in this review only contains studies on high school students, which includes four studies and eight students.

There are similarities in deficits between students with ADHD and students with EBD. First, both groups are less likely to spend time planning before they write, even when

given specific instruction. Second, both groups use fewer words than non-disabled peers, which results in lower holistic quality. Third, essential paragraph elements are more likely to be omitted, and finally, both groups have significantly lower syntactic complexity. Similarities between performance of students with ADHD and students with EBD in writing ability, and the EBD label on some subjects in the study, make inclusion appropriate for this paper.

Articles included by Reid et al. (2014) had to meet five criteria: (a) published in peer-referenced journals; (b) used a true-experiment, a quasi-experiment, or single subject design; (c) targeted or included disaggregated data on students identified as having ADHD; (d) used the SRSD instructional model; and (e) included data on some aspect of writing performance (i.e., length, quality) as a dependent variable. Only single subject design studies are included in this report.

Effects of SRSD on writing performance were measured by percent non-overlapping data (PND), which is commonly used in single subject design. PND allows for comparison of effect across studies, and it was calculated by percentage of data points in treatment that exceed the highest point of baseline data. PND was interpreted as: (1) PND above 90% is a large effect, (2) PND between 70% and 90% is a moderate effect, (3) PND between 50% and 70% is a low effect, and (4) PND 50% or below is classified as ineffective.

Three specific types of writing measures: genre elements, writing quality, and total words were compared in student essays. Resulting data on genre elements showed an increase in mean PND for 100% of the students from baseline to post instruction in three out of the four studies, and this increase was still evident in maintenance assessment. Only one study did not have all participants demonstrate an increase in genre elements included. Total words also showed the

same mean PND increase for all students, except for the same study where only 68% of the

participants showed an increase in total words. Writing quality displayed consistent gains

overall, but with the least favorable results. Three quarters of students showed positive gains,

and results held up slightly less for some in maintenance testing. A summary of the results is

listed in Table 10.

Table 10

Overview of Studies

Authors	Instructor	Group Size	Genre	Strategy	Measures	Post Instruction	Maintenance
Jacobson & Reid (2010)	R	One-to-one	Essay	STOP & DARE	Elements TW Quality	100% 100% 100%	100% 100% 66%
Jacobson & Reid (2012)	R	One-to-one	Essay	STOP & DARE	Elements TW Quality	100% 100% 100%	100% 100% 100%
Kiuhara et al. (2012)	R	One-to-one	Essay	STOP & AIMS	Elements Elements Quality	100% 100% 84%	N/A

Table 10 (continued)

Authors	Instructor	Group Size	Genre	Strategy	Measures	Post Instruction	Maintenance
Mason, Kubina, & Taft (2011)	R	One-to-one	Essay	POW + TREE	Quality Elements TW	77% 68% 68%	83% 50% 66%

Note. PND = Percentage of Non-overlapping Data; CT = Classroom Teacher; TW = Total Words; R = Researcher; N/A = not available

In conclusion, Reid et al. (2014) found SRSD had a positive effect on writing quality, essay elements included, and total words for high school students with ADHD. Furthermore, the study suggests that no special accommodations or change are needed to use SRSD effectively for students with ADHD. Self-regulated strategy development is an educational best practice for students with ADHD.

Summary

Self-regulated strategy development was created in 1982 as tool to increase writing ability for students of any age, and to date, SRSD has demonstrated to be one of the best evidence-based writing strategies available to improve student writing skills. High school students with EBD have recently been exposed to this strategy, and have demonstrated positive results. This chapter reviewed nine recent studies on the impact of SRSD instruction for high school students with EBD. Self-regulated strategy development requires limited or no modifications to meet the unique needs of students with EBD while attending high school settings. In Chapter 3, I discuss implications of this review.

Chapter 3: Conclusion and Recommendations

Students with emotional or behavioral disorder (EBD) are in need of additional academic instruction across all subject areas, and improving writing skills can positively impact their performance in other subject areas while leading to increased academic success. One writing strategy that has been successful with students of all grade levels is self-regulated strategy development (SRSD); however, high school students with EBD has been a population with limited studies in this area. In Chapter 2, I reviewed nine studies on SRSD that were conducted on high school students with EBD. In this chapter, I discuss findings and implications of these studies as well as discuss recommendations for future research.

Conclusions

The nine studies reviewed in Chapter 2 included effects of SRSD instruction on high school students with EBD. This paper evaluated effectiveness of SRSD as a writing intervention tool for high school students with EBD, and evaluated its effectiveness in increasing the writing skills of this population. Varying experimental factors were investigated in each of the studies included in this review; furthermore, all studies showed an increase in writing ability after completion of SRSD instruction.

As an educator of high school students with EBD, I find it important to pursue research-based methods to aid instruction. Once a peer-reviewed, evidence-based practice has been identified, educators are required by IDEIA to extend these practices to their students (Yell, 2016). Many tools are available and most come with an expensive price; before any money is spent, it is important to know that the tool has positive results, and is worth the investment. Sreckovic et al. (2014) intended to validate SRSD as an evidenced-based practice

(EBP) for students with EBD across all grade ranges. Many studies were reviewed in their meta-analysis, and were evaluated to find if they met criteria to be considered scientifically valid. The studies that met these criteria were then subject to further evaluation of data where a functional relationship between SRSD instruction and an increase in writing ability for students with EBD was found. Self-regulated strategy development is considered an EBP for high school students with EBD, a population of students that is characterized as being behind grade level in writing ability, and as having behavioral barriers that restrict learning processes. Teachers that choose to use SRSD in their classrooms do not have to worry about credibility of the instrument; therefore, they can use time and energy on implementation.

I work in a Level IV separate site school for high school students with EBD where many supports available at a typical school are not an option. Also, attendance is not consistent for many of my students, and classroom interruptions are frequent. Ennis et al. (2014) and Ennis et al. (2015) conducted research to find if SRSD could be successful in alternative educational (AE) settings. AE settings present environmental barriers which restrict time in which instruction can occur. Interruptions such as classroom behaviors, scheduled therapeutic sessions, and frequent absences do not prohibit learning, because steps of SRSD can be learned at an individual pace. Also, there have been benefits to this type of setting as small group instruction has proven to be beneficial to students with EBD. Furthermore, it was found that SRSD skills learned at one placement can be successfully transferred to a new placement.

I have found that teachers do not have time to complete existing curriculum requirements, much less add extra material. Ennis (2016) and Ennis and Jolivette (2014) evaluated effectiveness of teaching SRSD as a writing strategy in classrooms outside of language arts

settings. Self-regulated strategy development was used to increase writing skills during social studies and health classes, and during these studies participants demonstrated substantial growth in writing skills. By successfully teaching writing during non-language arts class, instructional time can be made available to benefit the overall learning ability of students with EBD.

Most of the studies I reviewed included in this report or not, used researchers as primary instructors of SRSD. If researchers are needed to successfully implement SRSD, many students would be precluded from an effective writing strategy. McKeown et al. (2014) set out to find if SRSD instruction could be effective when delivered by classroom teachers instead of researchers. Resulting data found that teachers could successfully teach SRSD if highly trained. Practice-based professional development (PBPD) provides quality instruction as it teaches steps, provides practice, and gives immediate feedback. As educators become proficient with SRSD instruction, students will have a better opportunity to learn this strategy, and gain an opportunity to increase their educational success.

Recommendations for Future Research

I reviewed many studies specifically relating to using SRSD instruction to increase writing skills of high school students with EBD. Because studies generally contained a low participant number (3-6), it would be interesting to see the results of a study on a large group of participants. However, it may be impossible to find a large group of students with EBD in one setting, and keeping the group intact throughout the duration of the study would be another obstacle.

I did not come across any research on effectiveness of SRSD instruction as compared to other writing strategies. It would be interesting to view results of a meta-analysis comparing

effectiveness of different evidence-based writing strategies, or completing a new study if a population of high school students with EBD could be found.

Finally, gender and ethnicity are categories that have not been individually tested. Further study could find if these differences affect learning outcomes when SRSD instruction is implemented on a diverse population of high school students with EBD.

Summary

The SRSD model has been a successful tool for increasing writing skills for over 20 years, and is demonstrated to be effective for high school students with EBD. Students with EBD have environmental, behavioral, and academic barriers to learning; SRSD addresses the individual needs of these students. Self-regulated strategy development works well for small groups, accommodates differentiated instruction, and allows students to progress at an individual pace. Also, SRSD scaffolds instruction, lessons can be repeated, students are responsible for learning processes, and progress is tracked and celebrated. These same strategies are used every day in EBD classrooms. Self-regulated strategy development has been tested over time, and is a flexible tool for teachers to help students improve writing performance.

Implications for Practice

After reviewing studies on implementing SRSD on high school students with EBD, I will incorporate this strategy into my classroom instruction. It is evident that SRSD is a valid writing strategy with my population of students, and when writing instruction is effective, students' overall educational performance is increased. Thinksrsd.com is a website that promotes SRSD instruction and has resources accessible to anyone. After sharing this information with my

colleagues and administration, I will propose attending a 2-day practice-based professional

development instruction class on SRSD.

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