

THE EFFECTS OF SELF-REGULATION STRATEGY DEVELOPMENT ON  
WRITTEN EXPRESSION OF STUDENTS WITH EMOTIONAL/BEHAVIORAL  
DISABILITIES

by

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The Effects of Self-Regulation Strategy Development on Written Expression of Students  
with Emotional/Behavioral Disabilities

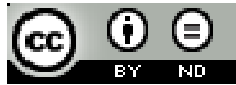
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## **DEDICATION**

This is dedicated to my wife and best friend Jena, and to my daughters Sharelle, Parys, and Amaya.

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I would like to first and foremost thank my Savior Jesus Christ for blessing me with this opportunity and for continuing to show me that through you, all things are possible.

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## **ABSTRACT**

### **THE EFFECTS OF SELF-REGULATION STRATEGY DEVELOPMENT ON WRITTEN EXPRESSION OF STUDENTS WITH EMOTIONAL/BEHAVIORAL DISABILITIES**

Ronald Howard Pannell, Ph.D.

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Dissertation Director: Dr. Frederick J. Brigham

This investigation examined the effects of self-regulated strategy development (SRSD) on the written expression of students with emotional and behavioral disabilities (EBD). The target students for this study were elementary students who receive special education services under the category of EBD. An AB Multiple Baseline Design (i.e., Baseline, Intervention) across participants was used to document the effectiveness of SRSD through the implementation of a writing strategy: POW + TREE. Dependent variables including numbers of on-task and off-task behaviors, and the quality of written essays based on the number of words, number of transition words, mean holistic scores, and time on task were measured. The outcome results of SRSD on written expression through the POW+TREE writing strategy indicated that performance on writing persuasive essays improved from baseline through the intervention phase. Students were more willing to write after learning the strategy and were on-task more consistently from baseline

through intervention phases. Additionally, the improvement was maintained during the immediate maintenance phase. Although students improved in their ability to write a persuasive essay, the overall magnitude of improvement was not substantial.

Generalization of the strategy was also assessed in the content areas of social studies and science. Furthermore, all students were interviewed in order to gain their perspectives on strategy instruction.

## **1. INTRODUCTION**

### **Statement of the Problem**

Professionals in the field of education frequently reflect upon the current mandates and expectations of federal, state, and local education policy and how these mandates have changed the teaching profession. Public Law 94-142, the Education for All Handicapped Children Act of 1975, clearly established the need to educate all students regardless of one's disability. Following the passage of the No Child Left Behind Education Act of 2001 (NCLB), the scope-and-sequence instructional pendulum shifted from meeting the needs of a few students to providing accountability outcomes for all students.

In addition, professional development requirements for school personnel have changed. For example, the Interstate School Leaders Licensure Consortium (ISLLC) Standards have been developed by the Council of Chief State School Officers in collaboration with the National Policy Board on Educational Administration (NPBEA) to help strengthen preparation programs in school leadership (Van Meter & Murphy, 1997). Currently, special education teachers across the county are required to meet "highly qualified teacher" mandates as established through NCLB, and states have set criteria based upon federal law to accomplish the mandate. For example, the Commonwealth of

Virginia has requirements for teachers not new to the profession of teaching to become highly qualified teachers by (a) passing a rigorous state-approved academic subject test for elementary education; (b) becoming highly qualified in another state or the District of Columbia; or (c) by meeting an alternative route to licensure.

Another prominent area of concern for educators is student behavior, which is related to both instruction and learning. Scheuermann and Hall (2008) noted that students who have academic deficiencies experience significantly more negative interactions, more punitive consequences, less demanding academic tasks, and less instructional time with the teacher due to a greater frequency of disciplinary actions that remove these students from the classroom. Research (e.g., Trout, Nordness, Pierce, & Epstein, 2003) has demonstrated that the relationship between academic achievement and student behavior is a reciprocal relationship that has both a short and long-term impact on the future outcomes of students, where academic deficits may lead to disruptive behaviors in school and result in removals from school. In addition, if students with emotional and behavioral disabilities (EBD) are not taught strategies to manage their behavior at the onset of concerns, then their behavior may contribute to social deviance and social maladjustments as adults. The outcome for students with EBD is particularly alarming, since they are at risk for school failure due to their extreme behaviors that are far removed from the norm and not well tolerated by teachers (Nelson, Babyak, Gonzalez, & Benner, 2003). Wiley, Siperstein, Bountress, Forness, & Brigham (2008) suggested that “these students experience some of the worst educational outcomes of any student group,

including academic underachievement, low grades, grade retention, failure to graduate, dropout, and suspension/expulsion” (p. 198).

### **Instructional Strategies and Academic Achievement**

Unequivocally, school personnel are held accountable to provide students with special needs access to the general curriculum to the greatest extent possible (IDEA, 1997). Teaching various learning strategies to students with special needs is an effective way of providing such access in education (Warner, Schumaker, Alley, & Deshler, 1989). The manner in which teachers prepare instructional lessons for and interface with students is of critical importance. Hall Haley (2001) noted that teachers who plan and organize instruction around the learning preferences, strengths, and interests of the individual learner may maximize learning opportunities for students. Sutherland and Wehby (2001) examined the effects of teaching behaviors and students with EBD and advocated that teachers maximize opportunities to praise their students.

Mastropieri and Scruggs (2010) recommended the use of PASS variables (Prioritize instruction; Adapt instruction, materials, or the environment; Systematically teach with the “SCREAM” variables; and Systematically evaluate the outcomes of your instruction). Such planning of instruction for students with special needs provides greater opportunities for positive student outcomes. Student achievement and motivational development are believed to be affected by a student’s experiences in the classroom, which are, in turn, shaped by teachers’ instructional performance (Klusmann, Kunter, Trautwein, Ludtke, & Baumert, 2008). In response to appropriate instructional practices for students with disabilities, students are expected to participate in routine classroom

activities and complete given assignments; however, for various reasons, this may not occur. For instance, some students with specific learning disabilities (SLD) are inactive learners who fail to use effective strategies to facilitate comprehension (Simmons, Fuchs, Fuchs, Mathes, & Hodge, 1995). Writing is also an area of concern for some students with SLD, as their writing assignments reflect poorly developed ideas, lack of planning, and an absence of revisions (Sexton, Harris, & Graham, 1998). Although academic performance for students with SLD may improve over time, students with EBD tend to fall further behind or their performance remains stable (Anderson, Kutach, & Duchnowski, 2001).

Self-Regulated Strategy Development (SRSD) is an instructional approach to writing strategies that combines powerful writing strategies with strategies for self-regulated during writing. SRSD not only addresses difficulties in writing, but also addresses attitudes and beliefs about writing, motivation, and self-efficacy (Harris, Graham, Mason, & Friedlander, 2008). Consequently, self-regulated strategies, such as self-instruction, self-questioning, self-monitoring, self-evaluation, and self-reinforcement, help students with high incidence disabilities (i.e., EBD and SLD) gain access to cognitive processes that facilitate learning. These strategies guide learners as they apply the processes within and across domains and they regulate the learner's application and overall performance of a task (Montague, 2008).

There has been a more concerted effort to address learning and behavioral problems of students as they enter school settings. For example, coordinated early intervening services (CEIS) are provided to students who are not identified as needing

special education services but who need additional academic and other supports to succeed in the general education environment (USDOE, 2009). Some of these students will later manifest significant learning and behavioral problems to the extent of requiring an evaluation for special education services and, for a few, an alternative educational program. Therefore, understanding the variables that predict both poor and high-quality academic, social and behavior outcomes is critical to ensure the provision of appropriate services for low-performing students (Montague, Enders, & Catro, 2005).

For over 20 years, a pronounced interest in explicitly teaching goals and strategies (strategy instruction) to students with disabilities has become a major focus in educational research (Danoff, Harris, & Graham, 1993). A significant body of research exists that demonstrates that many students with disabilities fail to acquire many necessary cognitive and metacognitive strategies unless detailed and explicit instruction is provided (Deshler & Schumaker, 2006).

Educational outcomes for students with EBD have posed challenges within and beyond school settings. Lane, Kalberg, and Shepcaro (2009) found that “outcomes do not improve when EBD students leave the school setting as evidenced by employment difficulties, contact with the juvenile justice system, limited community involvement, and high rates of access to mental health services” (p. 322). Therefore, there is a need for research that addresses the development of specific academic skills, including self-determination, to ensure that students with EBD are able to access the general education curriculum and maximize transition-related opportunities (Agran, 2008).

### **Significance of the Writing Process**

The National Commission on Writing (NCW) (2003) noted that writing sustains American life and popular culture in many ways that are clear and in some that are rarely noticed. Despite a limited number of adults who use writing to make a living, a growing expectation within the American work force is that employees are fluent writers. According to a 2003 NCW survey, more than 90% of midcareer professionals cited the need to write effectively as a skill of great importance in their day-to-day work. Overall, these findings supported the conclusion that the neglect of writing instruction has resulted in students not being able to write effectively enough to meet the demands faced in higher education and the emerging work environment (2003).

Findings from the National Assessment of Educational Progress (NAEP) also support the 2003 NCW's conclusions that most students have mastered the basics of writing (e. g., rudimentary prose), but few are able to create precise, engaging and coherent prose. In 1998, NAEP findings indicated that roughly four out of five students in grades 4, 8, and 12 were at or above the basic level of writing, and roughly one out of four were at or above the proficient level. More salient was the fact that only one in roughly one hundred was thought to be an advanced writer (NAEP, 1998).

In comparison to these earlier findings, the 2007 NAEP results indicate that at grades 8 and 12, average writing scores and the percentages of students performing at or above the basic level were higher than in the 2002 and 1998 assessments. The 2007 White - Black score gap narrowed from 26 to 23 at grade eight compared to 1998 and 2002 but showed no significant change at grade 12. The 2007 gender score gap showed no significant change at grade 8 compared to previous assessments but narrowed at grade

12 compared to 2002., The 2007 average writing scores for eighth graders increased in 19 states and the Department of Defense (DOD) schools compared to 2002, while scores decreased in one state. Compared to 1998, the 2007 writing scores increased in 28 states and the DOD schools, and no states showed a decrease. Scores for most urban districts at grade eight were comparable to or higher than scores for large central cities but were below the national average. Trend results are available for four of the ten urban districts (Salahu-Din, Persky, & Miller 2007). According to Harris, Graham, and Mason (2003), “National and state writing assessments indicate that schools are not highly effective at developing this critical competency as the majority of children in American schools demonstrate significant difficulties with narrative, expository, and persuasive writing” (p.1).

### **Written Expression and High Incidence Disabilities**

Generally, writers are required to use the basic tools of language to convey a message to a reader; therefore, a writer must engage in effective writing practices such as planning, drafting, and revising written products (Boon & Spencer, 2010). Appropriate instruction of written expression for students with disabilities continues to be paramount. Danoff et al., (2003) noted the complexities of writing; a writer must not only negotiate the rules and mechanics of writing, but must also maintain focus on the critical elements of writing such as organization, form and features, purpose and goals, and audience needs and perspectives. In comparison to their normally achieving peers, students with SLD make considerably more errors in capitalization, punctuation, and spelling. These students also appear to have less knowledge of the structure of expository writing, or

frames (e.g., compare and contrast), which more effective writers typically use to help them retrieve and organize ideas (De La Paz, 1999). Additionally, students with SLD often fail to include critical elements of expository essays (e.g., a premise or conclusion), and they generate a considerable amount of irrelevant or nonfunctional information in their compositions (Graham, 1990).

Instructional approaches in the area of written expression for students with, or at risk for, EBD have been less developed than in the areas of reading and math (Lane, 2004; Mastropieri, Scruggs, Cuenca-Sanchez, Irby, Mills, Mason, & Kubina, 2010). Academic interventions for students with EBD have focused on dependent measures such as classroom response and work completion rates rather than the quality of written assignments. Improving the writing skills of students with EBD in traditional formats and genres addresses curricula accessibility required by IDEA (Baker, Gertsen, & Scanlon, 2002; Mason & Shriner, 2008).

### **Research Questions**

This study is intended to investigate and explore the effectiveness of SRSD and strategy in written expression for students with EBD by addressing the following research questions:

- Will students use the POW + TREE strategy in written expression to improve their writing through self-regulated strategy development from baseline to post intervention phases?

- Will strategy instruction result in increased length of sentences, use of transition words and number of paragraphs as evidenced through persuasive essays?
- Will teaching of SRSD increase on-task behavior from baseline to post intervention phases?
- Can students re-state the POW + TREE strategy as evidenced through interview questions?
- What are students' perceptions on learning the POW + TREE strategy to develop persuasive essays?

### **Definitions of Key Terminology**

*Emotional Disability* – Federal and state regulations define emotional disability as a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:

- An inability to learn which cannot be explained by intellectual, sensory, or health factors;
- An inability to build or maintain satisfactory interpersonal relationships with peers and teachers;
- Inappropriate types of behavior or feelings under normal circumstances;
- A general pervasive mood of unhappiness or depression; or
- A tendency to develop physical symptoms or fears associated with personal or school problems.

The term includes children who are schizophrenic, but does not include children who are socially maladjusted unless it is determined that they are emotionally disturbed (Virginia Department of Education, 2009).

*Self-regulated* – regulation involving primarily intraorganismic processes of behavior (Eisenberg & Spinrad, 2004).

*Self-Monitoring* – the process of having students record and evaluate data based upon their performance (Alberto & Troutman, 2009).

*Self-Regulated Strategy Development (SRSD)* – a writing strategies instruction approach developed by Karen Harris and Steve Graham which bring together effective strategies for writing and critical strategies for self-regulated of the writing process.

*On-Task Behavior* – is defined as one or more of the following: the student has appropriate materials for the lesson; the student is engaged with the task, and is attentive to instruction; the student asks appropriate and relevant questions as necessary; and the student appropriately uses the strategy.

*Off-Task Behavior* – is defined as a student who not engaged in any/all of the on-tasks behaviors listed above.

## 2. LITERATURE REVIEW

The literature review for this study is divided into six main categories (a) academic achievement of students with disabilities (b) self-regulated strategies and student achievement, (c) students with EBD and academic achievement, (d) writing and strategy instruction, (e) findings of literature reviews and meta-analyses on written expression, and (f) written instruction and students with EBD. The literature search procedures are described prior to discussing the results of the review.

### **Literature Search Procedures**

**Sources Used.** All journal articles that met the criteria are described in this section. All articles published between the years of 1987 and 2012 were included in this group design synthesis. Studies were identified through computer searches of Psych Info and Social Sciences Index databases to locate studies that fit the criteria for inclusion in the sample. The following keywords were used: self-regulated, self-monitoring, special education, student achievement, writing strategies, writing skills, writing instruction, Specific Learning Disabilities, Emotional Disturbance, low-performing students, elementary education, school leadership, and strategy instruction. Initial search procedures yielded 80 articles located in the following journals: *Remedial and Special Education, Journal of Learning Disabilities, Learning and Instruction, Intervention in School and Clinic, Journal of Developmental and Physical Disabilities, Learning*

*Disabilities Research & Practice, Journal of Personality and Social Psychology and Early Childhood Development and Care, Infants and Young Children, The Elementary School Journal, European Journal of Special Needs Education, Exceptional Children, Council for Learning Disabilities, Journal of Research on Educational Effectiveness, Journal of Teacher Education, The Journal of Special Education, Preventing School Failure: Alternative Education for Children and Youth, Beyond Behavior, and Journal of Educational Psychology.* Using these search procedures, only 11 publications that focused on written instruction and students with EBD were located that addressed the behavioral and academic needs of students with EBD in relation to behavior modification through strategy instruction, as well as instructional interventions in the content areas of reading and math.

### **Criteria for Inclusion**

In order to be considered for inclusion in this study, a study must address the following information: implementation of self-regulated strategies, the use of writing strategies, maintenance, and validity. Sample populations within a study and disability status were documented. Also, previous studies that target students with mild or moderate cognitive impairments or students with severe disabilities were excluded from the study.

Extensive coding was conducted to organize information from each intervention study. The total number of studies that meet the criteria for inclusion in the final sample of this study was documented. Information reviewed included effect size number, effect size, grade level, year of publication, demographic information, disability identification, type of treatment intervention, generalization, maintenance, and validity.

## **Coding Instrument**

A coding instrument, coupled with coding conventions or rules, was developed for use in identifying relevant literature (see Appendix A). The variables in the following areas were coded:

- Descriptive information of articles coded such as source of articles, year of publication, publication ID number, and sample size.
- Descriptive information of students such as grade level, sex, IQ, disability area, socioeconomic status (SES), population density, and geographic region;
- Intervention characteristics such as experimental setting condition, number of experimental sessions, minutes of experimental session, group delivery size of the experimental and control conditions, intervention description, and whether or not generalization and maintenance were assessed;
- Research design characteristics which include random assignment, nonrandom assignment, or nonrandom relevant matching; and
- Study outcomes, which include mean and standard deviation scores for effect size, validity of intervention, and type of intervention used.

Several variables were defined and coded, and coding conventions were developed to categorize each study using the following criteria:

- High quality study: Experimental and control groups that are randomly assigned to classrooms, teachers, content areas, and complete descriptive statistics will be reported (i.e., effect size, IQ scores, SES, etc.).

- Medium quality study: Experimental and control groups that are assigned to two or more classes, but groups are not randomly selected. Descriptive statistics, however, will be reported.
- Low quality study: Experimental and control groups that are assigned to one class per condition, random assignment is not used, and data are solely collected through pre and posttest measures.

### **Academic Achievement and Students with Disabilities**

The area of academic achievement for students with disabilities has been addressed in the literature. Table 1 provides an overview of the literature reviewed in this section which focuses on students with disabilities and their academic performance. Four studies from 2005 – 2011, including 2,660 students in grades K – 12 are cited in this section. Categories that were not addressed in research studies are marked with asterisks.

Table 1

#### *Academic Achievement and Students with Disabilities*

Author	Purpose of Study	Sample Description	Independent Variable	Dependent Variable	Design	Length	Results
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Lane, Wehby, Little, & Cooley (2005)	Part I: Compared students education in self-contained classrooms to students in self-contained schools to determine if academic, behavioral, and social deficits of students education settings have actual greater deficits.	72 students (50 males and 22 females; 29 in general education classes; 43 in a self-contained school; 50 EBD, 9 SLD, 6 OHI; 3 OHI unspecified, 1 ID, 1 SLI, and 1 Deaf	Educational setting and placement	Academic, social, and behavior performance	Two x two (placement x time) repeated measures model; placement was between subjects factor, time was within-subjects factor	Thirty hours of staff development; approximately 15-20 minute assessments for student students.	Indicated that students with EBD educated in self-contained classes had higher academic skills in reading comprehension, oral reading fluency, oral language, written language, and higher levels of internalizing behaviors in comparison to students educated in self-contained schools.
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Lane, Wehby, Little, & Cooley (2005)	Part II: Compared the progress of students with EBD to determine if students benefited from placement in a self-contained school or self-contained room.	60 students (41 males, 19 females); 42 EBD, 8 SLD, 6 OHI, 2 OHI not specified, 1 ID, and 1 SLI.	Academic, social, and behavior performance	Academic progress of students in self-contained classes and self-contained schools	Two x two (Placement X Time) repeated measures model. Repeated measures of ANOVA with time the repeated measures factor and placement the between subject factor	Thirty hours of staff development; approximately 15-20 minute assessments for student students.	Results revealed limited academic improvement in either setting with non-significant differences between groups on any curriculum-based measures – except written expression where students in self-contained classrooms performed better than students in self-contained schools
Lane, Barton-Norwood, Nelson, & Wehby (2008)	Sought to confirm & extend knowledge of academic characteristics of students with EBD in a self-contained school.	42 students with EBD (34 males, 8 female); 23 elementary and 19 secondary students	Academic performance	Behavior and social characteristics, and age of students	Casual-comparative design	*****	Consistent with previous research students that noted below average performance for students with EBD (well below the 25 <sup>th</sup> %ile for reading, math, and written expression.
Regan, & Michard (2011)	Provided types of resources available to promote effective interventions for students with challenging behaviors	*****	*****	*****	Qualitative review of resources	*****	Self-management/self monitoring instruction for students encourages responsibility and self-regulated

The need for research regarding the early and reliable prediction of school outcomes is critical in order to foster positive outcomes for low-performing students who are at risk for poor school outcomes (Montague, Enders & Castro, 2005). Graham and Harris (1989) noted that students with SLD have considerable difficulties executing and monitoring many of the basic functions that are critical within the writing process. As a result, writing samples may appear lacking coherence and continuity, which may not be a true representation of what a student has learned. Consequently, both researchers advocated for the implementation of strategy instruction for students with SLD that require students to (a) consider their audience and reasons for writing, (b) develop a plan for what they intended to say using knowledge-of-discourse schemas or frames to generate and organize writing notes, (c) evaluate possible content by considering its impact on the reader, and (d) continue the process of content generation and planning during the actual act of writing. Students were taught to use strategies when writing argumentative essays (Graham et al., 1989).

These concerns regarding performance are persistent across the continuum of placements for students with EBD. Lane, Barton-Arwood, Nelson and Wehby (2008) investigated the academic performance of students with EBD in a self-contained setting. Their findings revealed that elementary and secondary school group scores were well below the 25th percentile on reading, math, and written expression measures. A variety of reasons exist that impact the performance of students with EBD (e.g., attending multiple schools); however, targeted intervention efforts on specific skills should be implemented

to improve students' adjustment to school to promote academic success (Lane et. al., 2008).

Lane, Wehby, Little, and Cooley (2005a) conducted a study to compare educational outcomes of students with EBD who received special education services in a self-contained classroom to students who received services in a self-contained school. The study sought to determine which setting yielded greater academic and behavioral deficits. Seventy-two students with EBD participated in the study (29 students were in a self-contained classroom and 43 students were in a self-contained school). Data collected from performance on standardized assessments and behavior rating scales were analyzed through a series of multivariate analysis of variance (MANOVA) and univariate analysis of variance (ANOVA). Results of the study indicated that, "students educated in self-contained classrooms had higher academic skills in reading comprehension, oral reading fluency, oral language, written language, broad math, and broad reading as compared to students educated in a self-contained school" (p. 357). No significant differences were noted in the area of social skills for either group; however, students in the self-contained classrooms exhibited higher levels of anxiety in comparison to students in the self-contained school.

Lane, Wehby, Little, and Cooley (2005b) conducted a follow-up study to examine whether or not students benefited from their placements. Data were collected and analyzed on 60 students with EBD (26 students in a self-contained classroom; 34 students in a self-contained school); results indicated limited academic improvement in either setting with no significant differences between groups on any measure except written

expression. Students in the self-contained school scored significantly lower in writing as compared to students in the self-contained classrooms whose scores were consistently higher throughout the study.

### **Summary of Academic Achievement and Students with Disabilities**

Without question, the preponderance of research evidence demonstrates that students with EBD experience significant academic and behavioral deficits that impact their ability to access the general curriculum and make progress (Lane et al., 2005b). These findings are consistent with findings from the literature review which demonstrated that students with EBD have and continue to perform below academic expectations in comparison to their non-disabled peers. Furthermore, these students experience some of the worst educational outcomes of any student group with a disability (Wiley, Siperstein, Bountress, Fornees, & Brigham, 2008). Therefore, it is important to examine interventions that have been implemented through research to address the low performance of these students.

### **Self-regulated Strategies and Student Achievement**

This section addresses research pertaining to self-regulated strategies and student achievement. Previous research (e.g., Souvignier & Mokhlesgerami, 2006) has documented the need for students to have a set of special skills and strategies, as well as motivational and emotional control in order to initiate and maintain learning activities. Components of self-regulated strategies include goal setting, self-instructions, self-monitoring, and self-reinforcement (Harris, Graham, Mason, & Friedlander, 2008). This section is an overview of the research on self-regulated strategies and student

achievement from 1993 to 2012, including 208 4<sup>th</sup> – 8<sup>th</sup> grade students, is summarized in Table 2. Categories that were not addressed in research studies are marked with asterisks.

Table 2

*Self-regulated Strategies and Student Achievement*

Author	Purpose of Study	Sample Description	Independent Variable	Dependent Variable	Design	Length	Results
Danoff, Harris & Graham (1993)	Investigated the effectiveness of strategy instruction within an inclusive classroom setting	Four 5th grade and two 4th grade students	Writing stories	Use of SRSD in writing	Multiple baseline design across pairs of subjects	Nine sessions for 5th graders; 11 sessions for 4th graders.	The number and quality of story grammar elements improved
Montague, Warger, & Morgan (2000)	Research article described use of a self-regulated strategy for students having difficulties in math	Review of three studies with a total of 84 students (secondary level)	Achievement in math	Instruction on Solve It! Strategy	Qualitative study (case study)	Eight sessions	Students improved their abilities to solve problems, with the exception of 6th grade students

Wehmeyer, Yeager, Bolding, Agram, and Hughes (2003)	Examined self-regulated and other student-directed learning strategies	Three middle-school students with developmental disabilities	Academic achievement	The use of teacher-directed strategies or self-monitoring strategies	Multiple baseline across students	Thirty, 15-minute observations were conducted	Strategies were effective; strong changes noted for all target behaviors (100% on task behavior vs. 0% disruptive behavior and 60% to 100% in listening behaviors) Students respond best to schoolwide positive behavior support systems that include secondary interventions (i.e., self-regulated strategies) and tertiary interventions (i.e., functional behavior assessments)
Menzies & Lane (2011)	Review of previous research studies on self-regulated strategies and functional assessments	Students with and without disabilities due to academic or behavior deficits					

Lane, Carter, & Sisco (2012)	Examined the perspective of paraprofessionals' (para) on promoting self-determination behavior for students with high incidence disabilities	Two-hundred twenty-five para's (68 elementary, 27 middle, and 20 high) from 115 randomly selected schools	Supporting self-determination strategies	Students with high incidence disabilities	Survey instrument using a six-point Likert-type scale was completed by para's	*****	Para's indicated a high level of importance for self-determination instruction, and that they often taught skills associated with self-determination
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Self-regulated strategies for children with disabilities have become a prominent topic of discussion in the field of education. Hallenbeck and Kauffman (1998) noted that social learning does not occur on its own, and that specific and well-designed instructional procedures need to be implemented if students are likely to display positive behavior in the classroom. Specifically, these researchers recommend that teachers replicate the following procedures for students with EBD who receive services in the regular education classroom setting: (a) provide explicit models, including explicit instructions to imitate certain behaviors, plus guided practice in exhibiting those behaviors; (b) monitor the extent to which desirable imitation occurs; (c) provide direct and frequent reinforcement for imitation of desired behaviors; (d) make the models salient to the observers by increasing the observers' perceptions of similarity to the models; (e) decrease the likelihood that students with emotional or behavioral disorders will respond to seeing others obtain reinforcement as if they (observers) were being

punished; and (f) create regular class conditions in which students with emotional or behavioral disorders do not experience frequent academic or social frustration.

Many practitioners in the field of education have inquired about the willingness of students to use self-regulated strategies consistently. Over two decades of research on self-determination has noted its relevance, and is now evident within legislative and policy initiatives, state standards, and professional competencies (Lane, Carter, & Sisco, 2012). Past research (Peterson, Maier, & Seligman, 1993) suggested that students who doubt their own competence and ability are at a high risk for developing patterns of “learned helplessness.” Other studies have supported this finding (Fulk, Brigham & Lohman, 1998) and it is generally accepted that the motivational difficulties of students are influenced by students’ self-efficacy, perceptions of competence, and attributional beliefs. Researchers (Fulk et al., 1998) conducted an investigation on the motivational characteristics of three groups of adolescents. Findings of the study indicated that students with EBD who received special education services in special class settings felt less-alienated than students with EBD who were placed in general education classroom settings. Limitations were noted in regards to maintenance in that the study focused on a small sample of students limiting the generalization of results (Fulk et al., 1998).

Montague, Warger, and Morgan (2000) investigated the effects of such strategies to improve mathematical problem solving. Through an intervention called Solve It!, teachers were provided with a set of proven instructional techniques that help students actively acquire and effectively apply the cognitive processes and self-regulation strategies (Montague et al., 2000). Students were taught how to read math problems for

understanding, paraphrase problems into their own words, draw a picture of the problem or making a mental image, set up a plan to solve the problem, and estimate, compute, and verify the solution, and the intervention was conducted over a period of eight lessons. Results of the study demonstrated that all students achieved the goal of answering at least seven out of ten problems correctly on four consecutive work problem tests; however, the teacher using the strategy cited several difficulties in implementing the process including finding time for individual assessments for each student, identifying students who need such intensive strategies. Difficulties also arose because of students' other learning difficulties in reading and writing and the limited skills and teaching styles of educators (Montague et al., 2000).

Similar studies have been conducted to determine the effectiveness of self-regulated strategies and student achievement. Wehmeyer, Yeager, Bolding, Agram, and Hughes (2003) examined self-regulated and other student-directed learning strategies with three middle school students with developmental disabilities who received either teacher-directed regulation strategies (i.e., use of picture prompts, or verbal cues), or a self-monitoring strategy (i.e., use of a checklist) to address inappropriate behavior, where each student marked a "check" if they were on task, and an "X" in a space which indicated they were off task. Once mastery of the strategy (100% correct and independent use of the self-regulated process for three consecutive sessions) was obtained, each student was instructed to use the process for the remainder of the semester. The treatment examined in this study proved to be effective; strong changes were noted for all target behaviors (100% on task behavior vs. 0% disruptive behavior and 60% to 100% in

listening behaviors), and maintenance was noted as significant. Several limitations were noted, however. First, no data were collected on each student's use of self-regulated strategies once the intervention phase ended, and second, acceptability measures (critical within inclusive educational environments) were not obtained from either students, their peers, or their teachers (Wehmeyer et al., 2003).

Souvignier and Mokhlesgerami (2006) examined the effects of self-regulated learning in classrooms to determine whether strategy instruction could improve reading skills. Twenty fifth grade classes from five grammar schools in Germany participated in the study. Three classes of students (N=95) received instruction based on the principles of motivational aspects of self-regulated (MSR), reading strategies (Strat), and cognitive self-regulated (CSR). Five classes of students (N=146) received instruction in Strat and CSR, and three classes of students (N=89) received instruction solely through Strat. Nine classes in the control group received instruction through traditional procedures (N=263). The instructional script and intervention materials covered approximately twenty 45-minute lessons over a six month period. At the conclusion of the study the researchers reported significant outcomes for students in the intervention group who received intervention through the complete program (MSR + Strat + CSR) which outperformed the control class (Souvignier & Mokhlesgerami, 2006).

The current accountability systems in education are primarily focused on student outcomes and the implementation of scientifically-based research practices in classrooms, especially in response to addressing the specific learning needs of students with disabilities. As early as 1993, Danoff, Harris and Graham (1993) examined the

effectiveness of strategy instruction and the writing process for students with and without disabilities. This study extended their previous research on SRSD which emphasized student's role as an active collaborator and stressed interactive learning between students and the teacher, with responsibility for recruiting and applying strategies gradually placed on the student (Graham, Harris, & Sawyer, 1987). The strategy consists of the following seven stages that students used to complete a given writing assignment: (a) an initial conference with students to discuss the importance of the strategy, (b) pre-skill development focused on defining, identifying, and generating common story parts, (c) discussion of the strategy, (d) modeling of the strategy, (e) memorizing the strategy and mnemonic, (f) collaborative practice of the strategy, and (g) independent performance of the strategy. Students in the study were two fourth-grade and four fifth-grade students, where two of the fifth-grade and one of the fourth-grade students. The three remaining students were nominated by their teacher as students who were not outstanding writers. Results of the study demonstrated that the number and quality of story grammar elements that students included in their written work following strategy instruction improved substantially. As the components included in stories became broader and richer, papers also became longer and, for all but one of the participating students, qualitatively better (Danoff et al., 1993).

Menzies and Lane (2011) emphasized the importance of early intervention and the provision of Schoolwide Positive Behavior Supports to students who struggle academically and/or behaviorally and require intensive supports and services. Their extensive review of studies on student achievement and self-regulated strategies noted

that students may engage in disruptive behavior for a variety of reasons, such as learning and applying implicit and explicit school rules, academic deficits in reading, or fundamental acquisition to content – all of which pose severe negative educational outcomes.

In response, two methods of support were recommended to address these concerns. First, the implementation of self-regulated strategies through self-monitoring (observing and reading one's behavior), self-instruction (i.e., self-talk), and goal setting would allow a student to think about a given task beforehand, monitor his or her performance during the task, and to reflect on the task once completed.

Secondly, students may require more intensive interventions through a Functional Behavior Assessment (FBA) in order to determine the function of a specific behavior and respond with a specific intervention. Moreover, there is a correlation between off-task behavior and work completion: although they are different, a student may misbehave due to an inability to complete an assignment. Immediate interventions may address the behavior of concern for a short period of time; however, if academic concerns remain prevalent, then there is a high probability of the disruptive behavior patterns to continue in the future (Menzies et al., 2011). In response, proactive, schoolwide models of support systems are more than likely to limit challenging behavior concerns of students.

### **Summary of Self-regulated Strategies and Student Achievement**

The review of literature in this area has demonstrated that students with disabilities experience significant academic and behavioral deficits; however, given direct instruction on self-regulated strategies, students with such disabilities may benefit from

strategies that address learning deficits and modify behavior to allow greater access to the curriculum. Components of self-regulated strategies, such as self-instruction, self-monitoring, and self-evaluating also help learners gain access to cognitive processes that facilitate learning as well (Montague, 2008).

This brief review of self-regulated strategies in special education suggests that students with EBD benefit from strategy instruction by facilitating their access to the general curriculum. The following section addresses research on academic achievement for students with EBD.

**Students with Emotional/Behavioral Disabilities (EBD) and Academic Achievement**

The disability area of EBD has been well documented over the past 30 years. Table 3 documents the literature reviewed in this area. Five studies from 2003 – 2010, which included 6,863 students in grades K – 12, are discussed in this section. Categories that were not addressed in research studies are marked with asterisks.

Table 3

*Students with Emotional/Behavioral Disabilities (EBD) and Academic Achievement*

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Author	Purpose of Study	Sample Description	Independent Variable	Dependent Variable	Design	Length	Results	Outcome
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Trout, Nordness, Pierce, & Epstein (2003)	Comprehensive examination of the literature on academic status of students with EBD; assessed student characteristics, placement settings, academic subject areas, and academic achievement	65 articles (1961 – 2000) met criteria for inclusion in the study; 70 data sets were reviewed; children with EBD were the target population (5,938 students; 4,541 boys, 1,397 girls)	*****	Dependent measures such as student grades, teacher surveys were used to identify students' activities in specific skill sets	Literature review	*****	Students with EBD performed less well than their peers without disabilities in math and reading; written expression was not explored	Findings noted that 91% of the reviewed studies reported that students with EBD were academically deficient in reading, math, and writing
Montague, Enders, & Castro (2005)	Conducted study that described academic and behavioral outcomes for low-performing students (EBD), students at-risk	628 students in 24 Kindergarten and 1 <sup>st</sup> grade classes	Early intervention models	Academic achievement	*****	4 years	Early services in elementary school may be helpful with early academic progress	
Nelson, Benner, Neill, & Stage (2006)	Examined language skills of students with ED and specific types of problem behaviors related to their academic and language skills	126 students (102 boys; 24 girls) were randomly selected	Academic skills	Development of language skills	Structural equation model	*****	Language ability had a statistically significant effect on academic fluency and academic skills (p<0.05)	Up to 45% of students with ED likely to have language deficits; advocates for interventions targeting language development

Benner, Nelson, Allor, Mooney & Dai (2008)	Investigated the role of academic processing speed on the relationship between externalizing behavior and academic skills, language skills and academic skills for students with EBD	166 students with ED (K-12; 136 boys, 30 girls)	Externalizing behaviors and language skills	Academic skills	Cross-sectional design	Four months (Feb-May 01-02 school year)	Effect of externalizing behavior on processing speed (p<0.05); effect of language skills on academic skills (p<0.05) and on academic processing speed	Academic processing speed mediates the influence of both language ability and externalizing behavior on academic skills
Menzies, Lane, & Lee (2009)	Introduced the concept of metacognition and provided a variety of strategies for students with EBD	Illustration of a 6 <sup>th</sup> grade student with EBD as a secondary disability	Self-regulated via self-monitoring strategies	Academic skills and behavior concerns	*****	Twelve days	Student improved in his ability to complete assignments and remain on-task	When implemented with fidelity, self-monitoring strategies are effective for students
Carter, Lane, Crnabri, Bruhn, & Oakes (2011)	Comprehensive review of school-based interventions addressing the needs of students with or at-risk for EBD	Eighty-one articles from 46 different journals were reviewed, which included 16,426 students (the number of students with EBD was not clearly identified)	*****	The impact of self-determination strategies for struggling students	*****	*****	Self-determination components were addressed as an intervention in 77% of studies; 34% as an outcome measure	Self-management and self-regulated strategies were intervention used most frequently

Bower (1981) defined students as emotionally handicapped as those exhibiting the following characteristics: (a) an inability to learn which cannot be explained by intellectual, sensory, or health factors; (b) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (c) inappropriate types of behavior or feelings under normal conditions; (d) a general, pervasive mood of unhappiness or depression; and (e) a tendency to develop physical symptoms, pains, or fears associated with personal or school problems. Bower (1981) noted the inability to learn as the most significant area of concern in relation to school performance for such students.

The learning concerns for students with EBD are well documented. Young, Smith, West, and Morgan (1987) noted that an inordinate amount of time is frequently devoted to managing students' inappropriate behavior over academic instruction. Therefore, academic achievement is impacted by the lack of an ability to manage social emotional behavior in order to access the curriculum (Agran, Wehmeyer, Cavin, & Palmer, 2008). This standpoint is also true in the area of written expression; however, a more concerted effort to address writing deficiencies is underway. According to the National Commission on Writing (2003), a survey of state human resources divisions by the National Governors Association concludes that writing is considered an even more important job requirement for the states' nearly 2.7 million employees than it is for the private-sector employees studied in the Commission's earlier survey of leading U.S. businesses. The findings noted that (a) respondents universally agree on the importance of writing for professional state employees, (b) writing is a basic consideration for state hiring and promotion, (c) state agencies frequently require writing samples from job

applicants, and (d) poorly written applications are likely to doom candidates' chances of employment. Still, respondents revealed that 30% of professionals are below standard in writing, and most states have needed to provide remedial writing training or instruction (NCW report, 2003).

Kauffman (2001) noted that the definition that is accepted for EBD reflects how the problem is conceptualized and, therefore, what intervention strategies are considered appropriate. Despite the fact that students with emotional disabilities continue to struggle academically, behavior continues to be the main area of concern and focus. In many writings, courses, informal discussions, and other models of professional communication about students with EBD, heavy emphasis is given to problems involving student defiance, disruptiveness, and aggression (Cullinan, Evans, Epstein, & Ryser, 2003). However, academic concerns are also a very prominent part of EBD.

Academic achievement is crucial to successful programming for students with EBD, but many students with EBD fail to make adequate progress and do not successfully access the general curriculum. Trout and colleagues (2003) investigated the collection of evidence regarding the academic skills of students with EBD in studies reviewed from 1961-2003 that reported significant academic deficits for students with EBD, where they were below grade level and one or more years behind their fellow peers. Other research has noted that students with EBD earn lower grades, are less likely to pass classes, and experience higher rates of dropout than typical students and students with other high incidence disabilities ( Lane, Barton-Arwood, Nelson, & Wehby, 2008; Wagner & Cameo, 2004).

Montague et al. (2005) conducted a study to describe academic and behavioral outcomes for adolescent students who were identified as low-performing students due to being at risk for ED. The four-year study was initiated by screening 628 students in 24 kindergarten and first grade classrooms at two schools in a large urban school district. Two groups, moderate-risk and high-risk students, were followed for three years as elementary students, and data were collected in the areas of reading and math achievement. Findings from their study demonstrated that individualized assessment at the onset of elementary school may be an effective method to identify students in need of intensive instructional interventions in reading and math to facilitate appropriate gains throughout the elementary school years, as opposed to “waiting for students to fail in order to provide intensive interventions in reading and math” (Montague et al., 2005, p. 92).

Without question, language plays a significant role in academic achievement for students with and without disabilities. As a result of language deficits, approximately 67% of students with EBD have language deficits that worsen over time and delay academic performance (Benner, Nelson, & Epstein, 2005; Benner, Nelson, Allor, Mooney, & Dai, 2008). Nelson, Benner, Neill, and Stage (2006) employed a structural equation model to test interrelationships among language skills, externalizing behavior, and academic fluency and their impact on the academic skills of students with EBD. Results of their study supported the hypothesis that language ability has a statistically significant effect on academic fluency and academic skills. Implications from their study

suggested that students with EBD would benefit from interventions directed at developing their language ability.

Benner et al. (2008) conducted a study to investigate the mediating role of academic fluency on the relationship between language skills and academic skills of students with EBD. A cross-sectional research design was used to collect and analyze data on 166 randomly selected students (K-12) over a four-month time frame. Findings from the study indicated that language skills have a statistically significant effect on academic skills, where academic processing speed was the mediating factor of both language ability and externalizing behavior on academic skills.

According to Menzies, Lane, and Lee (2009), students with EBD encounter many difficulties in the classroom with their teachers, during non-academic activities such as lunch and recess with their peers, and outside of the school environment with their immediate family members. Their research on self-monitoring strategies provided an overview on metacognitive strategies to improve the academic performance of students with EBD, provided a framework for designing and implementing self-monitoring procedures in a classroom, and included an example of how to implement such procedures.

Metacognition is defined as thinking about thinking, where successful students have an ability to think about why something is not working and apply an action that helps them solve the problem (Menzies et al., 2009). Examples of metacognitive strategies include planning for and executing a task, analyzing and monitoring a problem,

or applying a strategy. Their study encouraged educators to employ the following metacognitive strategies to support students who have difficulty managing their behavior:

- Self-monitoring procedures where students self-record aspects of a targeted behavior;
- Self-evaluation procedures which involves students comparing their performance to a set criteria. This procedure requires students to self-assess behavior and record outcomes within a given time interval;
- Self-instruction where students use self-statements to guide their behavior; and
- Goal setting where students set goals for a targeted behavior in an effort to decrease off-task behavior and increase the quality and quantity of assignments.

Furthermore, self-monitoring procedures can be established by (a) identifying and operationally defining the behavior of concern; (b) designing the self-monitoring procedures – to include a monitoring form; (c) teaching the student the self-monitoring procedures; (d) monitor student progress; and (e) maintenance and follow-up on self-monitoring procedures. Findings from their review and implementation of research studies demonstrated that self-monitoring strategies are a highly promising practice to support academic performance and behavioral concerns of students with EBD.

The ability for students to use self-regulated strategies is one of the many components of self-determination, which represents an important aspect of instruction for students with EBD. As students progress through school, they are expected to become

more independent and assume a more responsible role in their education by communicating their own strengths, interests, needs, and preferences more efficiently (Carter, Lane, Crnabori, Bruhn, & Oakes, 2011). Carter et al., (2011) conducted an extensive literature review on self-determination for students with an at-risk for EBD across 81 articles from 46 different journals which included 16,426 students; however, the total number of students with EBD was undetermined. Findings from the review noted that self-management and self-regulated strategies were the most prevalent intervention component in almost two-thirds of intervention studies – which emphasized significant deficits of self-regulated behavior exhibited by students with EBD.

### **Summary of EBD and Academic Achievement**

As a group, children and youth with EBD have serious and often multiple impairments that include an array of emotional disabilities that contribute to low academic achievement (Wagner, Kutach, Duchnowski, Epstein, & Sumi, 2005). A plethora of instructional strategies and interventions have been implemented to address academic deficits of students with and without disabilities, but primarily in the areas of mathematics and reading (Pierce, Reid, & Epstein, 2004). The process of writing is equally important to mathematics and reading due to the relationship of writing to language and communication (Regan, Scruggs, & Mastropieri, 2009). Therefore, it can be hypothesized that a focus on written expression may improve academic and behavioral outcomes for students with emotional disabilities. The research pertaining to writing instruction for students with EBD is described in the next section.

### **Writing and Strategy Instruction**

Literature on the use of strategy instruction to promote writing skills is reviewed in this section. Table 4 lists the specific research reviewed, where eight studies were reviewed which included 221 elementary and middle school students. Categories that were not addressed in research studies are marked with asterisks.

Table 4

*Writing and Strategy Instruction*

Author	Purpose of Study	Sample Description	Setting	Independent Variable	Dependent Variable	Design	Length	Outcome	Effect Size
Graham & Harris (1989)	Does self-instructional strategy training improve writing of students with SLD	Three 6 <sup>th</sup> grade students with SLD - Level I	Resource room in a suburban ES in the northeast USA	Think-Plan(TRE E)-Write strategy	Writing a composition essay	MB across subjects with multi probes in baseline	6 weeks	All 3 students demonstrated significant improvement over baseline in several writing areas	*****
Harris & Graham (1999)	Evolution of SRSD and writing research	Four 5 <sup>th</sup> and 2, 4 <sup>th</sup> grade students with LD	General edn writers' workshop classroom setting	Goal setting, self-monitoring (self-assessment & self-recording)	SRSD via Direct teaching, SRSD-WERS, and Full SRSD	Experimental pretest/post-test; generalization/maintenance	20-56 minutes for 3x/wk for 3 wks	Schematic structure improved for students with SLD & general edn. students	*****
DeLa Paz & Graham (2002)	Investigated the effects of SRSD on middle school students essay writing abilities	Fifty-eight 7 <sup>th</sup> & 8 <sup>th</sup> grade (30 contr and 28 exp)	Two middle schools in 10 language arts classes	SRSD via PLAN and WRITE	Writing achievement	Quasi-experi.	6 weeks	Writing quality improved	Effect size improved from 0.82 – 1.71 from baseline to intervention in regards to length, vocabulary and

Santangelo, Harris, & Graham (2008)	An overview of SRSD in relation to why students struggle with different aspects of writing	Fifth-grade students	General education classroom setting	Developing a variety of writing passages	SRSD via WWW +What=2 How=2	*****	*****	SRSD instruction improved students writing performance behavior, and motivation	*****
Mason, Kubina, & Taft (2009)	Two studies were conducted to evaluate SRSD on quick writes	1. Six middle school students with disabilities in graduate assistance – delivered instruction; 2. Ten middle school students with disabilities in teacher-delivered instruction classroom	1. Learning center room in the school library; 2. Learning support room	Developing quick write responses to a question on a given topic	SRSD via POW+TREE	Two multiple-baseline, across participants designs	Five – six 45 minute lessons over three weeks	SRSD instruction via POW+TREE supported quick writing performance of students with disabilities	1. Post instruction on PND=94%; Maintenance PND+100% 2. Post instruction on PND=77%; Maintenance PND=67%
Tracy, Reid, & Graham (2009)	Studied effects of SRSD on young writers	127 students in grade three from six classrooms	Rural Midwest-ES general class	Personal narrative writing essay	SRSD via POW+WWW measured by posttest performance	Experimental pre/posttest/generalization/maintenance- one way ANOVA	*****	Empirical support for direct teaching of writing strategies	*****

Lane, Graham Harris, Little, Sanmel, & Brindle (2010)	To examine the effects of strategy and self-regulated instruction on students' writing performance and behavior	Thirteen second-grade students (8 boys, 5 girls) with behavioral concerns and at risk for EBD	General education classroom	Story instruction and writing a story essays	SRSD via POW+WW	Multiple baseline across students design with multiple probes during baseline	*****	Many students showed lasting improvements in writing story essays; students with internalizing and externalizing behaviors of concern showed improvement in writing longer stories	*****
Lane, Harris, Graham, Driscoll, Sandmel, Morphy, Herbert, House, & Schatschneider (2012)	Examined the effects of SRSD instruction as a Tier 2 intervention	Forty-four second and third grade students with writing and behavioral difficulties	General classroom setting	Writing a story and an opinion essay	SRSD via POW+TREE	A series of one-way, fixed effects multivariate analyses of variance (MANOVA)	Three to four times per week/for three – four weeks	Students who received SRSD instruction made greater gains in elements, length, and quality on writing opinion essays	ES>1.10 for both story writing and opinion essays in regards to the experimental group; academic engagement (ES=0.84)
Harris, Lane, Driscoll, Graham, Wilson, Sandmel & Brindle (in press)	Examined the effects of SRSD instruction as a Tier 1 intervention	Fifty-six second and third grade students with and without behaviors of concern	General classroom setting	Writing a story and an opinion essay	SRSD via POW+TREE	A 2X2 ANOVA contrasting group (Story vs. Opinion) X Student Status (behavior challenges vs. typical)	Twenty-four sessions/three sessions per week	Students in the experimental group made significant gains in developing opinion essays, reported positive feelings on learning the strategy	*****

In the area of written expression, research indicates that students with disabilities lack knowledge of the writing process, have difficulties generating ideas and selecting topics, do not engage in prewriting or planning activities, and have difficulties with the mechanics of writing (Harris et al., 2003). In response to such concerns, Mason, Harris and Graham (2002) noted that SRSD instruction was one promising approach to address writing deficiencies in the areas of planning for writing, writing, editing, and managing the writing process.

Graham and Harris (1989) lamented that students with SLD “appear to be somewhat successful in using knowledge of genre patterns to develop and frame texts; however, their knowledge is either incomplete or they are not able to gain conscious access to all the structural knowledge they do possess” (p. 202). Their study (1989) measured the effectiveness of self-instructional strategy training in writing on students with SLD. Three sixth grade students participated in the study, and received SRSD instruction via the *Think – Plan – Write* strategy, where students independently composed argumentative essays using the strategy along with self-instructional statements, such as “Why am I writing this?” or “Will my reader buy this?” Results at the conclusion of the six week study demonstrated that all students significantly improved over several baseline areas in writing. Moreover, four out of every five papers written during the intervention phase contained all the fundamental parts of an essay in comparison to less than 10% of baseline essays.

The process of writing proficiently involves a series of steps which include planning, drafting, self-regulated, and revising. De La Paz and Graham (1997) taught

three students with learning disabilities a strategy designed to help them become more reflective when writing opinion essays. Three 5th grade students participated in the study over a course of eight weeks. Their teachers noted concerns with generating and organizing written ideas, and each student had an IEP goal in written expression. A multiple baseline design across students was used to examine the effects of teaching the strategy. Each participant remained in the baseline phase until the data were stabilized and for at least three observations. During the intervention phase, each participant was assessed on the use of the STOP (Ssuspend judgment, Take a side, Organize ideas, and Plan more as you write) + DARE (Develop your topic sentence, Add supporting details, Reject possible arguments for the other side, and End with a conclusion) writing strategy. The students were individually taught the strategy during 45-55 minute sessions in or after school, and the instructor used scripted lesson plans to guide the teaching and planning of the strategy. Results of the study noted that all three students improved their writing essays, where the STOP + DARE functional elements strategy in post-treatment essays increased by 376%, 204%, and 199%, respectively, for each student from baseline to intervention phases. Moreover, after receiving instruction on the strategy, each student's score was larger than his or her baseline score, and the average length of students' essays increased during the intervention phase as well (De La Paz & Graham, 1997).

Written expression concerns are also of paramount importance with secondary students. According to De La Paz (1999), numerous research studies have focused on instructional practices on writing strategies and self-regulated strategies to elementary

and secondary students with SLD to improve the quality of their writing. De La Paz (1999) investigated the effects of SRSD on writing expository essays for middle school students with and without SLD. Twenty-two students participated in the study and received direct instruction on the PLAN (**P**ay attention to the prompt, **L**ist main ideas, **A**dd supporting ideas, and **N**umber your ideas) + WRITE (**W**ork from your plan to develop your thesis statement, **R**emember your goals, **I**nclude transition words for each paragraph, **T**ry to use different kinds of sentences, and **E**xciting, interesting, \$100,000 words) strategy. Results from the study demonstrated the majority of students were able to develop sequential, multi-paragraph essays, and students engaged in planning and pre-writing strategies that resulted in quality written compositions.

Harris & Graham (1999) conducted a study to investigate the evolution of SRSD and writing research on students with SLD. Building upon their previous research that addressed the written language needs of students with SLD (Harris & Graham, 1992; Harris & Graham, 1999), their findings concluded that students with disabilities “require more extensive, structured, and explicit instruction to develop skills, strategies (including self-regulated strategies), and understandings that their peers form more easily” (p. 252).

The stability of writing performance is frequently impacted by factors such as academic failure, self-doubts, learned helplessness, and low task engagement which result in the deterioration of positive attitudes toward writing over the course of the elementary school years (Mason Kubina, Valasa, & Cramer, 2002). De La Paz and Graham (2002) conducted a study to investigate the effectiveness of strategy instruction and writing performance of middle school students, which emphasized the development

of knowledge regarding the characteristics of good writing, criteria for evaluating writing, and the use of mature vocabulary, transition words, and different types of sentences. Fifty-eight students participated in the study; 30 students were assigned to the experimental group and 28 students were assigned to the control group. Students in the experimental group were taught the PLAN and WRITE writing strategy four days per week over the course of six weeks. Four separate ANOVA tests were conducted to evaluate the relationship between the two instructional conditions and planning, essay length, vocabulary, and overall holistic quality. Findings from the study demonstrated that students in the experimental group constructed essays that were longer, contained more mature vocabulary, and were qualitatively better than essays developed by students in the control condition. Essentially, the PLAN and WRITE strategy helped students to analyze demands of various writing assignments and generate and organize their writing content (De La Paz & Graham, 2002).

Writing activities, such as quick writes, across the content area provide students with opportunities to explain what they know about a given topic, and allow teachers to assess learning. Quick writes are short (approximately 10-minute) writing responses to a question related to a topic which require students to think about and explain what they have learned through writing (Mason, Kubina, & Taft, 2009). Mason et al., (2009) conducted two multiple baseline, across-participants design studies to examine the effects of POW+TREE instruction on quick writing essays. Six middle school students with disabilities received instruction through a graduate assistant, and 10 middle school students with disabilities received instruction through a classroom teacher. Their

performance was evaluated by examining responses written during a 10-minute quick write given by the teacher in the students' learning support classroom. Results of the study demonstrated that the POW+TREE persuasive writing strategy supported quick writing performance of students with disabilities.

Tracy, Reid, and Graham (2009) replicated and extended previous research studies of SRSD on older students (Graham & Perin, 2007a, 2007b; Graham et al., 2005; Harris et al., 2006; Rogers & Graham, 2008) with struggling third-grade students. A total of 127 third-grade students from six classrooms participated in the study. Three classrooms were randomly assigned to the experimental group (N = 64) and three classrooms were assigned to the control group (N = 63). Findings from the study indicated that students who were randomly assigned to the experimental group and received SRSD instruction wrote longer stories, were stronger in regards to quality of story parts, and were qualitatively better. Students in the experimental group more readily generalized the strategy to novel situations as opposed to their counterparts in the control group (Tracy et al., 2009).

Lane, Graham, Harris, Little, Sandmel and Brindle (2010) conducted a study to investigate the effects of SRSD and writing on second-grade students at-risk for EBD, who demonstrated poor writing skills. Results of the study indicated that SRSD as a three-tiered model of intervention was effective in improving writing performance of students at risk for EBD, where students with internalizing and externalizing behaviors constructed more complete stories from baseline to post-intervention phases. Furthermore, the many students demonstrated an improvement in writing stories.

Many school divisions across the nation have implemented strategies and interventions in the form of primary (Tier 1), secondary (Tier 2), and tertiary (Tier 3) supports for students based upon need (Lane, Harris, Graham, Driscoll, Sandmel, Morphy, Herbert, House & Schatschmeider, 2011). Primary, or Tier 1 supports, are designed to address academic and behavioral concerns for all students based on core curriculum standards. Examples of Tier 1 supports would include study skills classes, grade-level mentors, and lunch or after-school help. Secondary, or Tier 2 supports, are immediate and targeted interventions that are thoroughly applied and monitored for low-performing learners. Examples of interventions would be mandatory tutorial and homework assistance, student/teacher conferences, sheltered classes, or a change of teachers. Tertiary, or Tier 3 supports, are the most intensive interventions and are focused on closing an achievement gap. Examples of interventions would include intensive core supports, intensive academic support through research-based instructional programs, and intensive behavioral support (Buffum, Mattos, & Weber, 2009). Lane et al., (2011) examined the effects of Tier 2 academic interventions on writing performance, academic engagement, and behavior. Forty-five second grade students (32 boys and 12 girls) who either demonstrated, or were at-risk for behavioral concerns participated in the study, and received SRSD on the use of a writing strategy to develop either an opinion essay, or to develop a story. They received individualized instruction three to four times per week for 30 minutes outside of the general education classroom for three to four and a half weeks.

Results of the study noted that students who received the intervention made greater gains in elements, length, and quality of writing opinion essays, and on writing

stories in comparison to students in the control condition (both  $ES > 1.10$ ). In regards to academic engagement, SRSD instructed students made significantly greater gains than students in the control group ( $ES = 0.84$ ). Additionally, both students and teachers were in favor of receiving, using, and providing instruction on SRSD based upon their reflections of the study.

Moving forward, there is a growing body of research that supports intensive interventions and strategies within Tier 1 supports. Harris, Lane, Driscoll, Graham, Wilson, Sandmel, and Brindle (in press) noted the difficulties of students with behavioral challenges to remain engaged when writing on academic assignments and investigated the effects of SRSD as a Tier 1 intervention on students' ability to write stories and opinion essays. Fifty-six second and third grade students who were identified as moderate or high-risk for behavioral challenges participated in the study and received strategy instruction from general education teachers for a maximum of 24 sessions, three sessions per week.

Results of the study demonstrated that SRSD instruction as a Tier 1 intervention improved the writing outcomes of students with and without behavioral challenges in the general education classroom setting. As with the previous study, both students and teachers noted that SRSD was effective where teachers observed greater improvements when instruction was provided to the entire class. However, findings did not support significant improvements in relationship to on-task behavior.

### **Summary of Writing and Strategy Instruction**

Generally, the aforementioned research studies have suggested that students with disabilities benefit from strategy instruction in written expression. Based on the outcome of these studies, it is incumbent upon educators to explicitly teach writing strategies to students that focus on planning, drafting, and revising a variety of writing assignments. In addition, the process of SRSD has been and continues to be informed by research in areas of emerging practices in writing instruction, self-regulated, learning characteristics of students with learning deficits, and effective instructional practices (Harris et al., 2003). Subsequently, research has demonstrated that SRSD instruction for students with disabilities improves their abilities in planning, writing, revising, and editing writing assignments while enabling them to monitor and manage their writing and behavior by developing internal self-regulatory procedures (Mason, Harris, & Graham, 2002). The next section summarizes the findings of meta-analyses on written expression.

### **Writing Intervention and Meta-analyses on Writing**

Meta-analyses on writing are reviewed in this section. Table 5 outlines research discussed in this section which includes seven studies from 2004 – 2011 involving students in grades K-12. Categories that were not addressed in research studies are marked with asterisks.

Table 5

#### *Writing Intervention and Meta-analyses on Writing*

Study	Purpose of Study	Documents Reviewed	Key Findings	Students	Outcome	Effect Size
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Reid, Gonzalez, Nordess, Trout, & Epstein (2004)	To determine if differences existed in academic status & demographic data & across academic subject areas; investigated placement setting as a moderator of academic status.	25 studies met criteria for meta-analysis study on academic status of 2,486 students with EBD	Placement and services	Academic achievement	Meta-analysis of research conducted over a 39 year time frame.	ES=-0.69, which was a moderate to large difference in academic achievement; students with EBD performed lower in academics than their non-disabled peers. ES=-0.81 in spelling
Graham & Perrin (2007)	Meta-analysis of writing intervention literature on students (grades 4-12)	123	Strategy instruction and summarization are paramount; handwriting and spelling pose challenges for students;	Grades 4-12	Strategy instruction and summarization strategies yielded the highest effect sizes. Peer collaboration also an area of importance.	Strategy instruction = 0.82; Sum = 0.82
Rogers & Graham (2008)	Review of single-subject designs and writing interventions	88	Strategy instruction was effective for students in relation to mechanics, setting goals, editing, and paragraph writing.	Grades 1-12 with and without disabilities	Findings provided strong support for explicit instruction on writing for students who struggle in this area	PND: elements (100), productivity (95), quality (99); setting goals (91 median); paragraph writing (100 median).

Berninger (2009)	Review of writing research over 25 years	Programmatic review of writing research studies	Language and memory play a significant role in learning strategies for writing.	Primarily students with SLD and without disabilities.	Unifying theoretical model that emphasizes phonological, orthographic, morphological, and executive functions to improve writing performance.	*****
Englert (2009)	Review of three programs devoted to assist struggling writers	Review of CSIW, POSSE, and ACCEL.	Literacy performance for students with and without disabilities is substantially impacted as a result of explicit strategy instruction.	Primarily students with and without disabilities.	Increased focus on reading-to-learn and writing-to-learn	*****
Graham & Harris (2009)	Analysis of basic research of writing over 30 years.	N/A	Planning and revising behavior generally predict writing performance.	Students with SLD	Writing continues to be a major area of concern due to teachers allocating little time to writing, lack of appropriate accommodations for struggling writers, focus on grammar, and lack of school-home connections with writing.	*****

MacArthur (2009)	Reflected upon the use of technology and writing	N/A	The use of word processing expands across a variety of media	Primarily students with SLD.	The use of word processing has a moderate positive effect on students who struggle to write.	*****
Schumaker & Deshler (2009)	Review of strategy instruction in writing over a 30+ year period.	Research studies began as early as 1984	Strategy instruction in writing allowed students with SLD to perform at comparable levels with peers.	Secondary students with SLD.	Future outcomes include the use of technology to teach writing strategies.	*****
Graham & Sandmel (2011)	Meta-analysis of writing research to examine the effectiveness of the process approach to writing	An extensive review of writing research was conducted and 29 studies met inclusion criteria	Process writing instruction was not as effective as strategy instruction	Grades 1 – 12, including students with disabilities and English language learners	Students receiving instruction on the process of writing in the general education classroom setting were better writers at the end of the experiment than students in the control group	Writing inquiry (ES = 0.32) in comparison to strategy instruction (ES = 0.82)

For students with EBD, the educational outcomes are more alarming. As a result of their unruly behavior, students with EBD frequently provoke negative feelings in others and alienate fellow peers and adults which ultimately compromise their ability to

benefit from learning experiences (Kauffman, 2001). Reid, Gonzalez, Nordness, Trout, and Epstein (2004) conducted a meta-analysis of the academic status of students with EBD. Their findings demonstrate that 75% of students with EBD in the experimental groups scored below the mean of the contrast group, and the overall achievement level of the EBD group was at the 25th percentile, which is consistent with previous research literature showing that students with comorbid EBD and academic deficits do not improve over time.

Several meta-analyses pertaining to written expression and students with disabilities have been conducted (e.g., Graham & Harris, 2009; Graham & Perrin, 2007). Research on writing instruction for students with disabilities has had a greater focus on the quality of writing content than on the mechanics of writing (Gersten, Baker, Pugach, Scanlon, & Chard, 2001). Graham and Perrin (2007) conducted a comprehensive meta-analysis of writing intervention studies in grades 4-12 and focused their efforts on experimental and quasi-experimental studies that examined the effectiveness of learning-to-write interventions. They also sought to identify effective practices for teaching writing to adolescents. Specifically, their research questions centered on identifying instructional practices that improved the quality of adolescent students' writing. In addition, they examined whether there was a relationship between overall study quality and magnitude of effect sizes. Since 18 or more effect sizes were available, they further examined whether specific study features, such as writing genre, were related to the impact of the treatment.

Results from the meta-analysis noted the importance of teaching adolescents strategies for planning, revising, and editing their compositions (ES = 0.82; grades 4-10), where the SRSD model appeared to have been very effective (mean weighted ES = 1.14; grades 4-8); teaching adolescents strategies and procedures for summarizing reading material (mean weighted ES = 0.82; grades 5-12); developing instructional arrangements in which students work together to plan, draft, revise, and edit their compositions (mean weighted ES = 0.75; grades 4-12).

Graham et al., (2007) also suggested the importance for adolescents of developing strong writing skills. Furthermore, the study demonstrated a plethora of instructional procedures that improve the quality of written work for students with and without disabilities.

Regarding research about students with disabilities and writing skills, the majority of studies have centered on students with SLD. Schumaker and Deshler (2009) conducted a meta-analysis on strategic writing instruction for adolescents with SLD. Previous studies (Schmidt, Deshler, Schumaker, & Alley, 1988/1989; Warner, Schumaker, Alley, & Deshler, 1980) noted that (a) the writing samples of students with SLD were poor and/or below grade level; and (b) their writing samples consisted of simple sentences, lacked organization, and several connected paragraphs in an essay. Nevertheless, school divisions across the nation frequently require students to complete writing tasks, such as persuasive, explanatory, and/or personal-experience essays. In response, several intervention models for students with SLD were developed over the course of 40 years. They include:

- the Strategic Intervention Model (SIM) that consisted of three strands (a) a strand of instruction for teaching students to acquire information; (b) a strand of instruction for teaching students to store, transform, and manipulate information; and (c) a strand of instruction for teaching students to express information;
- a strategy that involved writing (a) a topic sentence; (2) three detail sentences, and (3) a clincher;
- an error monitoring strategy or COPS which instructs students to focus on the following errors: Capitalization, Overall appearance, Punctuation errors, and Spelling errors.
- a theme writing strategy; and
- an essay test-taking strategy that instructed students to (1) analyze the action words in the question; (2) notice the requirements; (3) setting up a skeletal outline; (4) working details into the outline; (5) engineering an answer; and (6) reviewing the answer.

For example, Schumaker et al., (1982) (as cited in Schumaker & Deshler, 2009) conducted a study on the use of the error-monitoring strategy on nine students with SLD in grades 8-12. During the baseline phase, students corrected an average of 26% of the errors in ability-level passages and 29% of the errors in grade-level passages. Following the intervention, students were able to correct an average of 92% of the errors in the ability-level passages and 97% of the errors in grade-level passages. Overall findings from their studies indicated that not only did explicit instruction on writing strategies

work when applied with fidelity, but they worked to the extent that students with SLD performed at levels comparable to their peers without SLD. Furthermore, the importance of creating instructional conditions such that students receive explicit and intensive instruction through strategies in order for them to access the general curriculum and make progress comparable to their peers without disabilities was noted in their study.

Berninger (2009) also conducted a meta-analysis on written expression in which she explored the findings of cross-sectional assessment studies pertaining to the variance in handwriting, spelling, and composing, coupled with combined brain imaging and behavioral studies in writing. Within the meta-analysis, Berninger addressed studies that relate to writing assessment and theory, working memory, instruction intervention studies (i.e. learning from teachers, 3rd to 4th grade transition, poor spellers and readers), along with studies that reviewed writing problems in children with SLD. One writing problem, dysgraphia, a handwriting problem despite normal motor function, impacts the ability to maintain and sustain handwriting format, spelling, and writing fluency. Dyslexia, an impairment of the ability to read, was a concern to educators because it is not evident until kindergarten when children struggle to learn names and sounds for letters.

The Berninger (2009) meta-analysis also revealed (a) the best predictors of handwriting were orthographic coding and graphomotor planning for sequential finger movements in 1st-3rd grades; (b) the best predictors of spelling were measures of orthographic coding, phonological coding, and vocabulary knowledge in 1st-6th grade; (c) handwriting automaticity was consistently related to both compositional fluency and

compositional quality from 1st-6th grades; and (d) spelling was consistently related to compositional fluency only in the primary grades.

Berninger (2009) noted that during sequential finger movements, after controlling for motor movements, brain regions associated with cognitive, metacognitive, language, and working memory functions were robustly activated in good writers but not in poor writers. Moreover, handwriting, spelling, and composing were significantly correlated with the same five brain regions (left superior parietal, right inferior frontal orbital, right pre-cuneus, and right and left inferior temporal) which supported Lackley's (1951) claim that serial organization of behavior plays an important role in higher-order human cognition (as cited in Berninger, 2009).

Rogers and Graham (2008) conducted a meta-analysis of writing intervention research employing single-subject design to fill a gap in knowledge for the following reasons:

- meta-analyses of true and quasi-experimental research studies of writing interventions yielded 12 strategies that improve writing skills of K-12 students (i.e. teaching strategies for planning, revising and editing; teaching written summarization; peer tutoring in writing; establishing goals for students' writing; teaching handwriting, spelling or typing to students; using word processing as a medium for writing; teaching students how to write more complex sentences through sentence combining activities; inquiry techniques for students in developing ideas for writing; prewriting strategies; establishing a process approach to

writing; using writing as a tool for content learning; and having students study and replicate models of good writing);

- a meta-analysis of single-subject design studies would reinforce the claim that a treatment was or was not effective; and
- previous research studies on writing interventions have been conducted in typical classroom settings.

The primary goal of the Rogers and Graham (2008) meta-analysis study was to identify which writing strategies examined through single-subject designs were found to be effective for students in grades 1-12. Studies conducted with students who attended a variety of schools (e.g., regular education, special education, alternative, private, summer programs, clinics, and residential centers) were included in this meta-analysis. This meta-analysis expanded the previous meta-analysis of Graham and Perin (2007) by analyzing single-subject design studies of writing interventions, such as reversal and multiple baseline designs and alternating treatment and changing criterion designs. Studies were also included if they provided the data needed to calculate the effect size via percent of nonoverlapping data points (PND) between baseline and intervention phases (Scruggs, Mastropieri, & Casto, 1987). Studies were collected and coded according to type of design, number of students, type of writer, grade of study students, age of study students, disability status of students, race/ethnicity of students, geographic location of study, person providing instruction, and written description of independent variable. Each study was evaluated to see whether it met the specific indicators of study quality proposed by Horner et al. (2005) for single subject design research (i.e., description of students and

settings, dependent variable, independent variable, baseline, experimental control/internal validity, external validity, and social validity). Studies earned the following scores:

- procedures were described for determining how students were selected to participate in the study, or if the study described in detail the location where instruction took place for the intervention;
- 0 – no dependent measures met this criterion; and
- 0.5 – at least one of the dependent variables met this criterion.

The meta-analysis indicated: (a) teaching students strategies is important for planning/drafting both narrative and expository text (mean PND for elements [96%], productivity [91%], and quality [99%]); (b) directly teaching grammar skills to struggling writers (mean PND [83%]); (c) setting clear and specific goals increases students' writing productivity (mean PND [79%]); (d) instruction on editing compositions (mean PND [84%]); (e) the use of word processing as a primary tool for writing (mean PND [70%]); (f) reinforce students for their writing productivity (mean PND [96%]); (g) the use of prewriting strategies for gathering and organizing ideas in advance of writing (mean PND [52%]); (h) instruction on how to form complex sentences (mean PND [86%]); and (i) instruction on writing different types of paragraphs (mean PND [97%]).

MacArthur's 2009 meta-analysis on writing instruction discussed research on the use of technology to support the writing of students with SLD and noted that students who struggle to write benefit from a variety of computer applications, such as word processing, spelling checkers, word prediction, and speech recognition strategies. When students had access to word processing during writing, they were more encouraged to edit

final drafts which improved the process of revising assignments. Students also learned strategies for planning and revising following the self-regulated strategy development model (Graham et al., 2005; MacArthur et al., 2009).

Graham and Sandmel (2011) recently conducted a meta-analysis on the writing process to determine if instruction in this area would improve the writing outcomes of students' writing performance in the general education classroom setting, improve the quality of writing for students who struggle with writing, and to determine the level of motivation for students to write after receiving instruction on the process of writing. A review of studies on writing of students in Grades 1 – 12 were analyzed, but were required to meet the following criteria:

- only studies that employed an experimental or quasi-experimental designs were included;
- studies were excluded that involved strategy instruction as the comparison condition, or when the comparison condition was another form of process writing instruction;
- studies were required to collect pretest and posttest data;
- studies were required to measure writing quality, motivation, or both;
- sufficient information to calculate an effect sizes (ES) was required; and
- studies where instruction was provided to students' in separate public day schools were not included, but were included for students who attended private schools.

Findings from the meta-analysis noted that students' improved in their writing ability after receiving instruction on the writing process in comparison to students who were placed in a control group. However, students' did not perform as well as students' who received strategy instruction in the writing process in areas such as collaborative planning, drafting, and revising (ES = 0.82); goal setting (ES = 0.70); word processing (ES = 0.50); and sentence combining (ES = 0.50).

### **Summary of Meta-analyses on Writing Instruction**

The meta-analyses on written instruction reviewed here indicate that the vast majority of research on writing centers on students with SLD. However, a recent emergence of research in the area of written expression for students with EBD has suggested that students are becoming more proficient writers through strategy instruction. The findings also suggest that, when the basic elements of writing (planning, drafting, and revising) are taught to students, there is an improvement in written products for students across baseline and intervention phases. Lastly, the studies indicate that the use of technology on writing for low-performing students also improves basic writing components such as handwriting, grammar, punctuation, and spelling. The next section addresses the research on writing instruction for students with EBD.

### **Emotional Disabilities and Writing Instruction**

Improving the writing skills of students with EBD in various formats and genres addresses the IDEA (2004) mandate for curricular accessibility (Baker, Gersten, & Scanlon, 2002; Mason & Shriner, 2008). This section focuses on students with EBD specifically and the research that addresses writing instruction for this group. Table 6

provides a discussion of eight studies from 2005 – 2012, including 227 elementary and middle school students, in this section. Categories that were not addressed in research studies are marked with asterisks.

Table 6

*Emotional Disabilities and Writing Instruction*

Author	Purpose of Study	Sample Description	Independent Variable	Dependent Variable	Design	Length	Results
Adkins, M. H. (2005)	Dissertation on the effects of SRSD on elementary students with EBD	Three students with EBD; one 2 <sup>nd</sup> grade male student, one 3 <sup>rd</sup> grade female student, and one 3 <sup>rd</sup> grade male student	SRSD via POW+WW	Writing an organized, personal stories	Multiple-baseline, across participants design	Three – four days a week over 20 assessment sessions.	All students demonstrated improvements at generalization and maintenance phases than baseline performance.
Mason & Shriner, (2007)	To examine persuasive writing performance of students with EBD.	Six 2 <sup>nd</sup> – 5 <sup>th</sup> grade students with EBD.	SRSD via POW+TRE	Writing a persuasive essay	Multiple probe across-subject design	Eleven – thirteen 30-min. sessions	Results indicated that all students improved their performance in writing persuasive essays using SRSD (POW+TRE E)

Lane, Graham, Harris, Little, Sandmel, & Brindle (2009)	To study the effects of SRSD on second-grade students' writing and behavior	Seven students with externalizing behaviors; six with internalizing behaviors	SRSD via POW+WW	Writing an organized story	Multiple-baseline, across participants design	Seven-15 lessons over three-six weeks	Story instruction through SRSD (POW+WW) as a targeted intervention was effective for all participants
Mastropieri, Scruggs, Mills, Cerar, Cuenca-Sanchez, Allen-Bronaugh Thompson, Guckert, & Regan (2009)	Investigated the effectiveness of SRSD and persuasive writing	Fifteen 8 <sup>th</sup> grade students with EBD (14 boys, 1 girl)	SRSD via POW+TRE	Writing a persuasive essay	Multiple-baseline design across students with multiple probes	Fifteen weeks (52 days of observations)	Substantial improvements in the writing quality of persuasive essays improved for all students

Lane & Menzies (2010)	Literature review on meeting the needs of students with EBD	One hundred seventeen 1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> grade students with reading and behavior deficits; second study involved elementary and middle school students			Qualitative study		Both studies demonstrated that students benefited from SRSD instruction. Furthermore, the purpose of explicit instruction – both academic and behavior – should receive more attention
Little, Lane, Harris, Graham, Story, & Sandmel (2010)	Examined the effects of SRSD on writing persuasive essays for students with EBD	Thirteen second-grade students with EBD and internalizing and externalizing behavior	SRSD via POW+ TREE	Writing a persuasive essay	Multiple-baseline across-participants design with multiple probes	Thirty min. sessions, 3-4 times/wk. in 7-15 sessions	SRSD within the context of positive behavior support systems was effective for improving writing abilities of students with EBD

Mason, Kubina, Valasa, & Cramer (2010)	Extended SRSD instruction on persuasive quick writing for middle school students by adding timed writing responses for students with EBD	Five 7 <sup>th</sup> and 8 <sup>th</sup> grade, EBD	SRSD via POW + TREE	Writing a 10-minute persuasive response	Multi-probe, multiple baseline	Five 30-min. & three 10-min. sessions	Improved in quality of persuasive response, quick essays
Mastropieri, Scruggs, Cuenca-Sanchez, Irby, Mills, Mason, & Kubina (2010)	Examined SRSD instruction on persuasive writing of students with EBD	Ten secondary students with EBD	SRSD via POW + TREE	Persuasive essay writing	Design study methodology approach	Approximately four days/week for 4 months: 55 sessions, 26.6 hours over the course of four months	Students improved in all areas of essay writing (i.e., number of transition words, paragraphs, words written), and fluency rates in writing increased

Cuenca-Sanchez, Mastro-pieri, Scruggs, & Kidd (2012)	Examined the effectiveness of SRSD instruction on writing in comparison to an established writing curriculum program	Twenty-one, 7 <sup>th</sup> grade students with EBD participated (N=10 – experimental); (N=11 – comparison)	SRSD via POW+TREE and Writing Traits Curriculum	Writing persuasive essays	Pretest and posttest group design	Thirty-three days, four times/week in 30 minute sessions	SRSD instruction using the POW+ TREE writing strategy was more effective than using the Writing Traits Curriculum
Mastro-pieri, Scruggs, Irby Cerar, Allen-Bronaugh, Thompson, Guckert, Leins, Hauth & Cuenca-Sanchez (2012)	Examined SRSD instruction on persuasive writing with counter reasons for students with EBD	Twelve 7 <sup>th</sup> and 8 <sup>th</sup> grade students with EBD	SRSD via POW+ TREE	Writing persuasive essays with counter reasons	Multiple baseline design across participants	Approximately five days/week in 45 minute sessions over a three month period	Students demonstrated significant improvements in writing persuasive essays which were longer, of higher quality, and contained counter reasons
Hauth (2012)	Dissertation study examined the effects of SRSD instruction on content	Eight 8 <sup>th</sup> grade students with EBD	SRSD via POW+ TREE	Writing persuasive essays in the content area of civics	Multi-probe multiple baseline design across participants	Approximately five days/week in 35-50 minute sessions over a three month period	All students improved in their ability to write essays which were longer and of better quality

Improving the writing skills of students with EBD in various formats and genres addresses the IDEA (2004) mandate for curricular accessibility (Baker, Gersten, & Scanlon, 2002; Mason & Shriner, 2008). Writing is a crucial skill in the school curriculum and one of the primary ways that students demonstrate their knowledge of learned lessons (Graham & Leone, 1987). Students with EBD frequently exhibit academic difficulties, but one area where students may have particular difficulties is writing for a number of reasons. Frequently, students with EBD have not only externalizing behaviors that impact access to instruction, but internalizing behavior patterns such as depression, anxiety, and somatic complaints (Little, Lane, Harris, Graham, Story, & Sandmel, 2010).

Lane and Menzies (2010) conducted a review and noted the importance and need to address the area of written expression for students with EBD who performed below their peers without disabilities in written expression. Moreover, their performance in written expression did not improve over time in comparison with their peers. Upon review of writing intervention studies that implemented SRSD in developing persuasive essays, the preponderance of evidence supported the benefits of implementing SRSD for writing with students with EBD in conjunction with targeted supports to improve writing skills for students with EBD.

Mason and Shriner (2007) conducted a study that examined persuasive writing essays of six students with ED in grades 2-5. Guidelines for SRSD instruction and the POW+TREE writing strategy were taught to students. A multiple-probe design across subjects was employed to evaluate students' performance before, during, and after

instruction and was based upon their ability to write a persuasive essay. Overall, results of the study demonstrated that all students had improved in their ability to write persuasive essays following the intervention; however, results were mixed in post-testing, generalization, and maintenance (Mason et al., 2007).

Mastropieri, Scruggs, Mills, Cerar, Cuenca-Sanchez, Allen-Bronaugh, Thompson, Guckert, and Regan (2009) investigated the effects of SRSD on persuasive writing on 8<sup>th</sup> grade students with EBD who attended a public day school setting. A multiple baseline design across students with multiple probes during baseline phases was implemented across four groups of students. Findings from this study demonstrated significant improvements in writing persuasive essays for all students in relation to overall quality, number of words, sentences, essay parts, transition words, and paragraphs on post-instruction, post-fluency, and maintenance probes.

Mason, Kubina, Valassa, and Cramer (2010) investigated the effectiveness of SRSD in persuasive quick writing with five 7<sup>th</sup> and 8<sup>th</sup> grade students with EBD who received special education services through an alternative educational setting. A quick write process was selected as a means to promote fluency and to improve students' attention to task while writing. This process is also used to measure students' comprehension of written text. Furthermore, this study was an extension of previous research that was conducted on middle school students, but was extended by adding additional scaffold-guided practice lessons for writing a timed response and testing the effects for students with EDB. A multiprobe multiple-baseline across students design was used to evaluate student performance across baseline, intervention, and maintenance

phases, where baseline probes were administered until a stable baseline was established. Student performance was measured by examining persuasive response written to a prompt during a 10-minute period, where a 7-point quality response point scale was used to evaluate each essay. Students earned one point for including the following basic response parts: sentence, reasons, explanations, counter-reason with refute, and ending sentence. The POW + TREE writing strategy was implemented in conjunction with the components of SRSD. Results of the study noted an overall improvement in all students' ability to develop a persuasive writing sample in relation to quality, parts, and word count. Furthermore, the stability of writing performance improved for each participant over the course of the study, and academic areas of concerns that were documented in each student's IEP were supported. Additionally, given grade-level abilities in writing, performance was repeatedly below grade level due to difficulties with organization, work completion, and/or rushing through assignments with little effort (Mason et al., 2010).

Coupled with interventions to address writing deficits of students with EBD, schools have infused writing strategies within school-wide positive behavior support systems to address various academic and behavioral needs. Little et al., (2010) replicated and extended previous research studies on SRSD and persuasive writing strategies for students with EBD within such systems. Two multiple-baseline, across-participants designs on 13 second grade students with EBD were used to demonstrate the effects of SRSD and POW+TREE. Following extensive screening procedures, students were identified as having either externalizing (n=6) or internalizing (n=7) behaviors of concern. Students received intensive intervention and instruction in 7 -15 lessons, and

maintenance of the strategy was measured three weeks after students received instruction on the strategy.

Results of the study contributed to the body of previous research on SRSD which demonstrated that all participants improved their writing performance, specifically writing persuasive essays. Moreover, students demonstrated improvement despite tendencies to display internalizing or externalizing behavior patterns of concern. It was also noted that a statistically significant relationship did not exist between students' cognitive ability and responsiveness to SRSD (Little et al., 2010).

Mastropieri et al., (2010) investigated the use of SRSD on persuasive essay writing for students with EBD at the secondary level who received special education services in a separate school setting. Ten, eighth grade students participated in the five-month, 55 session study. Pre-and posttest assessments on Writing Fluency subtest of the WJ-III and the Oral and Written Language Scales (OWLS) were administered, as well as maintenance assessments approximately 12 weeks following posttest assessments. Results of the study indicated that students made significant gains in all areas of writing persuasive essays pertaining to the number of words ( $p < .01$ ), number of parts ( $p < .01$ ), number of paragraphs written ( $p < .01$ ), and the number of transition words used ( $p < .01$ ). Additionally, statistical gains were demonstrated on standardized measures of writing fluency ( $ES = 4.99$ ) (Mastropieri et al., 2010). Findings from their study supported previous research study outcomes.

More systematic evidence was provided by Adkins (2005) who taught three second and third grade students with ED in 19 to 25 sessions, to use the planning and story writing strategy, using a multiple baseline design. Students' were instructed on the use of self-statements to improve their written essays. The stories were used to set goals to improve writing, as well as to demonstrate a commitment to learning the strategy. The outcome of using self-statements appeared to assist students' in writing longer essays, and improving their personal feelings relating to their ability to write. Moreover, Adkins noted that "all students improved in the number of story elements, number of words written, and overall quality indices on post intervention, maintenance and generalization probes" (p. 239).

Lane, Graham, Harris, Little, Sandmel, & Brindle (2010) extended previous research on Project WRITE by working within a three-tiered model of support to examine the effects of SRSD and writing on second-grade students with externalizing and internalizing behaviors of concern. Their study hypothesized that students with such behaviors would respond to strategy instruction that focused on length, story, and quality of writing. Thirteen second-grade students (eight boys and 5 girls) participated in the study due to significant writing deficits. Results from a standardized assessment revealed significant concerns in an ability to write a complete and interesting story, where their performance fell at or below the 25<sup>th</sup> percentile on the assessment. A multiple-baseline across-participants design was used to examine their performance across baseline, intervention, and maintenance phases.

Findings from the study noted that story instruction via SRSD (POW+WWW) as a targeted intervention through a three-tiered behavior support model was effective for improving story writing performance of all participants. Eighty-three percent of the students with internalizing behaviors and 100% of the students with externalizing behaviors demonstrated a functional relationship between the use of SRSD and strong improvement in story completion as measured by the number of story elements (Lane et al., 2010).

The ability for a student to develop counter reasons in a persuasive essay is somewhat imperative. Recent studies have addressed students' ability to demonstrate this skill, which requires one to take an opposing viewpoint against their own perspectives Mastropieri, Scruggs, Cerar, Bronaugh, Thompson, Guckert, Leins, Hauth & Cuenca – Sanchez (2012) conducted a study that examined persuasive writing and counterarguments of students with EBD. Twelve 7<sup>th</sup> and 8<sup>th</sup> grade students with EBD were grouped together according to their writing abilities and received SRSD instruction on POW+TREE. Students received strategy instruction over the course of four months, five days a week in 45 – minute sessions over a three month time frame.

Results of the study demonstrated that students improved in their ability to develop persuasive essays from baseline to post – instruction and post – fluency phases of the study in relation to length and quality of essays, where more words were used, sentences were longer, transition words were used more frequently, and persuasive essays contained counterarguments. Moreover, students enjoyed using the strategy, and began to have more confidence in their ability to develop persuasive essays.

Additionally, Cuenca – Sanchez, Mastropieri, Scruggs, and Kidd (2012) conducted a study to measure the effects of SRSD instruction in comparison to an established school writing curriculum. Twenty – one 7<sup>th</sup> grade students with EBD participated in the study where the experimental group (N = 11) received strategy instruction on writing persuasive essays using the POW + TREE writing strategy over a period of 33 days (four times per week in 30 minute sessions). The comparison group (N = 10) received instruction in the general education classroom setting through the *Writing Traits* curriculum, which was implemented school wide.

Results of the study demonstrated that students in the experimental group wrote more words, sentences, transition words, paragraphs, and better quality essays than students in the control group on posttest assessments. As mentioned previously, students' perspectives on writing were positive, and they agreed that learning the strategy improved their ability to write persuasive essays. Students' in the control group, however, reported that they learned very little about writing a persuasive essay and did not enjoy learning the strategy taught to them.

### **Summary of Emotional Disabilities and Writing Instruction**

The application of the writing process continues to be a difficult process for students with EBD. For the purposes of this study, a review of the research on writing instruction for students with EBD yielded seven significant studies. Previous research studies on SRSD and writing instruction noted the following outcomes:

- Students with externalizing and internalizing behavior concerns who demonstrated poor writing skills were responsive to SRSD

(POW+WWW) writing instruction. Many students in their study improved in their ability to write stories from baseline to post-intervention phases (Lane, et al., 2009);

- SRSD (POW+TREE) is an effective to instruct students with EBD on writing persuasive essays through a school-wide positive behavior support system (Little et al., 2010);
- Instruction on SRSD on writing of students with EBD must be intense and must be provided to students for a lengthy period of time, which will exceed the average amount of instructional time devoted to writing persuasive essays (Mastropieri et al., 2009); and
- Instruction on SRSD and writing instruction must be intensive and consistent for groups of diverse learners (Mastropieri et al., 2010).

Although several research studies have investigated and explored self-regulated strategies for students with disabilities, very few studies have investigated and explored the implementation of strategy instruction in writing for students with EBD who are not making progress within the general education environment and require intervention to address their academic and/or behavior deficits. Furthermore, few studies have addressed the quality writing instruction of students with EBD in specific content areas outside of language arts (Hauth, 2012).

### **Summary of the Literature Review**

The literature review in this chapter has provided an overview of characteristics of students with EBD and the effects of SRSD for students with disabilities in the areas of

language arts and math. Lacking the ability to write more than likely will result in lower academic performance and reduced chances to attend college. It may also significantly impact the ability to fully participate in civilian life due to advances in technology that require communication and socialization (Rodgers & Graham, 2008). However, a recent emergence of research in the area of written expression for students with EBD has suggested that students are becoming more proficient writers through strategy instruction.

Following Hillocks' early meta-analysis of writing research (1984), other studies have added to the knowledge base of writing instruction. For example, in studies on collaborative writing approaches, students are taught to work together to plan, draft, and revise their writing samples. Studies on teaching students writing strategies also focus on these stages of writing (Baker et al., 2009). Although some studies of the effects of SRSD on written expression have been conducted for students with SLD (De La Paz, 1999; Graham & Harris, 2002) and others have been conducted to investigate the effects of SRSD on written expression for students with EBD (Adkins, 2005; Mastropieri et al., 2008), few studies have been identified that investigated the effects of SRSD on the written expression of students with EBD in the content areas of social studies and science.

**Purpose of the research.** As demonstrated in the literature review, the process and skill of writing depends upon the ability to cohesively plan and organize written composition. Research in the area of written expression for students with EBD is steadily increasing; however, a significant gap continues to exist regarding writing instruction and students with EBD. In general, students with EBD have responded in a positive manner

to strategy instruction through writing and self-regulated in small group, special education classroom settings primarily in the content area of language arts. Nevertheless, very few studies have investigated the effectiveness of such strategies and written expression for students with EBD in general education classroom settings.

The purpose of this investigation is to examine the effectiveness of self-regulated strategy development or SRSD through a writing strategy for low-performing students with EBD in the content areas of social studies and science, as well as to provide implications for future studies related to such intervention. The selected strategy for teaching persuasive essays, referred to as POW + TREE (Topic sentence, Reasons - three or more-, Ending, Examine) (see Harris, Graham, & Mason, 2006), is similar to the previous research study of Little et al., (2010) and Mastropieri et al., (2009), which explored the implementation of strategy instruction in persuasive writing with a class of 13 elementary students, and ten adolescent students with severe emotional/behavioral disabilities respectively; however, components such as the design and variables are different. In the aforementioned studies, all students mastered the components of effective persuasive essay writing and performed competently on criterion writing measures, a vast improvement from performance at the beginning of instruction. Additionally, Harris et al. (2003) noted that students with disabilities may require explicit, focused and, at times, isolated instruction to address specific areas of need in order to maximize access to the curriculum. Research (Danoff et al., 1993; Graham & Harris, 1989; Mason et al., 2002) has also indicated that students' compositions improved

across a variety of strategies in reference to the quality, length, and structure of students' compositions.

### **3. METHODOLOGY**

This section presents the methods for the research study which addresses the following research questions:

- Will students use the POW + TREE in written expression to improve their writing through self-regulation strategy development from the baseline to post intervention phases?
- Will strategy instruction result in increased length of sentences, use of transition words, and number of paragraphs as evidenced through persuasive essays?
- Will teaching of SRSD increase on-task behavior from baseline to post intervention phases?
- Can students re-state the POW + TREE strategy as evidenced through interview questions?
- What are students' perceptions on learning the POW + TREE strategy to develop persuasive essays?

The setting, study design, and students are described. Student and teacher materials, as well as the independent and dependent measures are also described. Additionally, instructional procedures, testing and scoring procedures, fidelity of treatment implementation, and data analyses are discussed.

## **Research Design**

This study used a multi-probe, multiple baseline, across students design with data collected during four phases: baseline, intervention, immediate maintenance and generalization, which differed from previous designs that investigated the effectiveness of SRSD and writing for students with EBD (Little et al., 2010; Mason et al., 2010; Mastropieri et. al., 2009) due to the fact that participants' in those studies were required to meet specific criteria before proceeding to the next phase of the study. However, for this study, students were randomly assigned to receive the intervention as opposed to meeting specific criteria. This design allows for data to be collected intermittently across the baseline phase which provides two advantages. First, a multiprobe, multiple baseline design provides the researcher with the advantage of being able to collect adequate data points for estimating trends within the data. Secondly, the design controlled for possible threats to external validity by staggering the introduction of the intervention at different times (Kennedy et. al., 2005).

Furthermore, the collection and monitoring of student performance on writing assignments should be frequent and ongoing; therefore, the collection of baseline data for a few participants occurred more frequently than in previous studies. Additionally, the immediate maintenance phase documented if students immediately maintained the strategy after receiving instruction on the intervention as opposed to meeting criteria before moving to the post-intervention phase.

Each student participated in all phases of the study. Based on a previous pilot study conducted by the researcher, between 6 and 15 data points appear optimal for the

baseline period to allow for more stable performance patterns and to adequately identify trends in the data. In order to reduce bias in assigning the number of data points to be collected for individual students, a random assignment procedure was used. The numbers 6 – 15 were written on slips of paper, placed inside a bag, and randomly drawn. The numbers designate the number of data points (a minimum of 6 and a maximum of 15) that were collected for the individual participant during the baseline period. Once the randomly assigned number of data points is collected, the participant began the intervention phase. Through the use of this random assignment procedure, control for extraneous characteristics of the participants (e.g., writing ability, willingness to participate, attention span) that might influence the outcome was provided (Creswell, 2005). Variables of the study are defined and described below.

## **Variables**

### **Independent Variable**

Strategy instruction, the independent variable, consists of teaching students a series of steps to follow independently to solve a problem or achieve an outcome, in this case, to write an effective persuasive essay. Researchers believe that strategy instruction serves as a cue to help children self-manage behavior (Mooney, Ryan, Uhing, Reid, & Epstein, 2005). For the purposes of this study, the POW + TREE writing strategy (**P**ick

my idea, **O**rganize my notes, **W**rite and say more + **T**opic sentence, **R**easons, **E**nding, **E**xamine; Harris, Graham, & Mason, 2006) was the primary independent variable. The primary intention of teaching SRSD through the POW + TREE writing strategy was to support students in their written expression areas of need pertaining to the planning, producing and revising stages of writing persuasive essays and to enable students to monitor and manage their written products. An additional expected outcome of the POW + TREE writing strategy was the development in students of positive attitudes and beliefs about writing, and about themselves as writers.

### **Dependent Variables**

This section describes the dependent variables that were used in this study: on-task behavior, off-task behavior, and quality of written persuasive essays.

**On-task behavior.** On-task behavior was defined as one or more of the following behaviors: the student had appropriate materials for the lesson, was engaged with the task, and was attentive to instruction; the student asked appropriate and relevant questions; and the student appropriately used the POW + TREE strategy. On-task behavior was measured through a momentary time sampling procedure during writing instruction, where the presence or absence of on-task or off-task behaviors were recorded immediately following a specified time interval (Kennedy et al., 2005). The time sampling procedure for on-task behavior was used during all four phases of the study, and is described in the Measures section.

**Off-task behavior.** Off-task behavior was defined as a student who was not engaged in any of the on-tasks behaviors listed above, and was measured concurrently

with the sampling procedures used for on-task behavior. The time sampling procedure for off-task behavior was used during all four phases of the study.

**Quality of written essays.** Participant essays were evaluated using a rubric that includes the components of the POW+TREE strategy (i.e. topic sentence, reasons, counter reasons, explanations, and ending) and a count of certain elements (i.e., number of paragraphs, number of words and number of transition words). Measures of the variables are described in the following section.

### **On- and Off-Task Behaviors**

On-task behavior was measured through momentary time sampling procedure. Observations of students were made during writing instruction every 2 minutes. Using an Observation Form (see Appendix E), the lead researcher observed a student during the writing session and recorded at the end of every 2 minutes whether or not the student demonstrated on-task and off-task behaviors. Each observation continued until the student completed the writing task (Alberto et al., 2009). This time sampling procedure for on- and off-task behaviors was used during all four phases of the study.

### **Quality of Written Essays**

Writing samples were scored during baseline and intervention phases to determine the holistic quality of the persuasive essays the students produced. All essays were scored on a three-point scale:

- 3 points: the essay included, or expanded on, all required components of the POW + TREE strategy.

- 2 points: the essay was missing one or two required components of the strategy.
- 1 point: the essay was missing three or more requirements of the strategy.

Additional information about the essays, such as number of paragraphs, number of words and number of transition words, was counted and used as measure for this variable. Table 7 displays the rubric used for scoring writing samples.

Table 7

*Rubric for Scoring Writing Samples*

Strategy	Expected outcome	Points Earned: 1–3
<b>POW</b>		
<i>Pick my idea</i>	Students developed a framework for the characteristics of a good persuasive essay.	
<i>Organize my notes</i>		
<i>Write and say more</i>		
<b>TREE</b>		
<i>Topic sentence</i>	Students used graphic organizer and/or checklist to organize written product.	
<i>3 reasons</i>		
<i>Counter reason</i>		
<i>Ending</i>		
<b>WRITING MECHANICS</b>		
<i>Number of paragraphs</i>	Students developed multi-paragraph persuasive essays using transition words.	
<i>Number of words</i>		
<i>Transition words</i>		
<b>Total Points Earned</b>		

## **Social Validity**

Social validity was measured through the use of interviews and questionnaires. Following each students' immediate maintenance phase, the student was interviewed to assess his perceptions of the intervention (see Appendix D). Questionnaires were also used to assess students' satisfaction with the intervention. These questionnaires were administered at the end of the study. The questionnaire consisted of four, 3-point Likert-type statements scale (i.e. 1 = almost never to 3 = almost always) measuring the POW + TREE strategy and its benefits (Cihak, Alberto, & Fredrick, 2007). See Appendix F for the Social Validity Questionnaires.

## **School**

The study took place in a suburban elementary school in the Southeastern region of the country. The school was first occupied in 1973, and presently contains 24 classrooms, seven trailers, 218 computers, and SmartBoard technology equipment in all classrooms. The school has been fully accredited since the 2007-2008 school year, and has made Adequate Yearly Progress (AYP) for three consecutive years (2008, 2009, and 2010). The average class size as of June 2009 was as follows: KG (20); Grade 1 (23); Grade 2 (24); Grade 3 (24); Grade 4 (25); and Grade 5 (21). The school staff consists of two administrators, 14 classified employees, 36 instructional personnel, and seven

paraprofessionals. Fifty-three percent of all instructional personnel within the school have earned a graduate degree.

The total number of students who currently attend the school is 454. The ethnic background of the student body includes, 54.8% Hispanic, 23.1% African-American, 14.7% White, 4.3 % Asian, and 3% other race/ethnicities. Sixty-two percent of students who attend the school are classified as economically disadvantaged; 48% of students receive English as Second Language (ESOL) services, 8% of students in Grades K-3 are identified as gifted; 9% of students in Grades 4-5 are identified as gifted; and 13.8 % of students receive special education services.

**Positive Behavior Support Model.** The *Olweus Bullying Prevention Program* was the schoolwide positive behavior support model that was implemented throughout the building. The program focused on improving peer relations and making the school a safer, more positive place for students to learn by reducing existing bullying problems among students, preventing new bullying problems, and achieving better peer relations at school. Furthermore, the program is preventative and responsive, and requires systematic efforts to address situations over time.

### **Intervention Classroom**

The writing instruction intervention initially took place in the school's conference room during Sessions 6 – 15 [Student A (Session 6); Student B (Session 9); Student C (Session 11); Student D (Session 14); and Student E (Session 15)]. For sessions 13 – 24, instruction took place in a designated classroom for the study. The classroom was equipped with computers, chalk boards, a variety of visual organizers (e.g., word splash

wall, multiplication charts, daily schedule, classroom rules and procedures, etc.), and a table for students to work in groups as needed. Due to the significant nature of their behavioral needs, no more than three students worked collaboratively in groups as they progressed through the memorization and independent practice phases of instruction.

### **Generalization Classroom**

After the students had been taught the writing strategy in the special education classroom setting, the generalization phase on the use of the writing strategy took place in the content areas of science and social studies. Students were given a writing prompt pertaining to a lesson that was covered, where they were expected to develop a persuasive essay without prompts or visual organizers. Appendix C includes probes that were administered during science and social studies. Data on generalization of the writing strategy took place in the general and special education classroom settings depending upon where the student received instruction for science and social studies. For example, if a student received instruction for science in a general education classroom setting, then a student also received social studies instruction in a general education classroom setting. On the other hand, if a student received instruction for science in a special education classroom setting, then a student received social studies instruction in the same setting. Throughout the duration of this study, Student B received science and social studies instruction in general education classroom setting, but Students A, C, D, and E received instruction in the special education classroom setting.

## **Research Participants**

Prior to the start of the study, consent from the George Mason University and the school district human subjects Institutional Review Board (IRB) was obtained.

Permissions from the selected school division and the building principal of the selected school were also obtained. Moreover, written student assent, parent consent, and teacher consent was obtained.

### **Students**

Student A, a fourth grade, nine-year-old student with EBD, receives special education services for the majority of the school day in the areas of reading comprehension, math calculations, social skills, and written expression. He also receives related services in the area speech and language (receptive and expressive language). His teachers reported that Student A has great difficulty remaining on-task with assignments and controlling his behavior. He frequently engages in arguments with peers and staff, and according to his teachers, these behaviors of concern appear to be related to his need for control and attention. A Functional Behavior Assessment/Behavior Intervention Plan was developed and implemented to address these concerns. Furthermore, in the area of written expression, Student A requires a significant amount of support to compose a complete sentence. According to his classroom teacher, he has difficulties with pre-writing strategies, developing drafts for lengthy writing assignments, reviewing and editing writing assignments, and often rushes to complete assignments.

Student B, a 10-year-old student with a primary disability of EBD, receives special education services to address his academic and social emotional areas of need. He

also has a secondary disability of Autism and receives itinerant services in this area. According to his teacher, Student B enjoys math but only participates in lessons that are interesting to him. Standardized assessments on the Woodcock-Johnson-III, Test of Achievement (WJ-III) in the area of written language demonstrated basic skills in writing sentences that provided identification; however, writing sentences that provided descriptions and expressed cause and effect were areas of weakness (SS=86; Low Average range). Writing is a laborious task for this student. He frequently refuses to complete writing assignments despite given direct instruction from his teacher as well as graphic organizers to assist him in writing. For example, on one occasion, time sampling procedures noted that he wrote six words in 30 minutes.

Student C, a 10-year-old fifth grade student with EBD, receives special education services to address his academic and behavioral concerns, and also has significant deficits in writing. His teachers noted that he has the ability to write two-three letter words but struggles with four letter words, or two syllable words. Student C was also inconsistent with the use of capitalization and punctuation, and had difficulty developing a topic sentence. Similar weaknesses were noted on the WJ-III Test of Achievement, Form B on writing samples where his performance was in the Very Low range (SS=60). An area of strength for Student C was his ability to generate good ideas for topics of interest and would produce a paragraph independently; however, he would become upset if he did not receive one-on-one assistance to assist in the spelling of words.

Student D, also a 10-year-old fifth grade student, was found eligible to receive special education services as a student with EBD as a primary disability and Autism as a

secondary disability. He was administered the WJ-III, Test of Achievement, Normative Update, Form B (WJ-III-NU) to assess his level of functioning in the area of written expression. Student D's performance was in the average range for writing samples, and in the high average range for spelling (SS=96). However, his performance on this assessment was not commensurate to completing writing assignments in class. Often, he refused to complete routine writing assignments. When he chose to write, his samples were characteristic of incomplete sentences, undeveloped ideas, and contained a limited number of words. At times, his behavior would escalate as a result of being required to complete a writing task.

Student E, a nine-year-old, third grade student with EBD, recently transferred to the school from out of state. Previous school records noted numerous infractions of classroom and school rules, as well as significant academic delays. Upon arriving at the school, very little assessment data on his abilities were provided, and were never received by the school. According to a curriculum-based measurement in the area of reading, Student E comprehended passages at a first-grade level. Moreover, writing was a significant area of concern where he would often refuse to complete any writing assignments—which at times would lead to significant behavioral outbursts.

Table 8 provides demographic information of the target population for the research study, who were elementary students receiving special education services under the category of EBD in a special classroom setting to address their area of need in written expression. Data was collected on their writing performance on standardized assessments, performance on Virginia Standards of Learning (SOL) assessments, or Virginia Grade

Level Assessment (VGLA); their IEPs regarding social emotional and written expression areas of need. Six students met criteria to participate in the study; however, one student opted not to participate for the remainder of the study at the onset of Session 4 during the baseline phase.

Table 8

*Demographics of the Target Population*

Participant	Sex	Age (in yrs/mos.)	Test Scores	SOL* Reading <i>M (SD)</i>	SOL Writing <i>M (SD)</i>	Social Emotional Goal
Student A	M	10.2	Full Scale IQ = 98 (WISCIV)	VGLA (pass)	***	Given direct instruction on social skills, Student A will use learned strategies to verbalize his feeling
Student B	M	10.0	(RIAS) with Verbal Index of 91-102, Nonverbal Index of 97-107, Composite	456	***	Given a directive from a teacher, Student B will comply without an argument

Index of  
92-102,  
and WJII  
(86)

Student C	M	11.6	Full scale IQ = 96 (WISCIV) WJ-III (60) – Writing Samples	444	392	Use learned strategies to speak in a positive manner with peers and adults
Student D	M	10.4	Full Scale IQ = 98; WJ-III (96) – writing samples	443	410	Given a difficult situation, Student B will request for use of sensory activities.
Student E	M	9.1	Transfer student from out of state; scores were not reported	***	***	Given instruction, Student E will cooperate with teacher requests

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*Note:* Each participant had an IEP goal for Written Expression

\* SOL = Commonwealth of Virginia Standards of Learning; VGLA = Virginia Grade Level Assessment  
Scores > 400 are passing scores on Virginia Standards of Learning

\*\*\* = **Standardized Assessment scores were not provided in student record**

## **Educators**

The primary researcher, a Central Office Administrator for students with emotional and specific learning disabilities and former special education teacher with experience with SRSD instruction, conducted the study. The primary researcher also informed the special education classroom teacher and paraprofessional on the intervention protocols.

The classroom teacher holds a Bachelor's of Art degree in political science. She is in her second year as a special education teacher, both of which have been at the selected school research site. Currently, she is pursuing a Master's Degree in special education. Previously, she was employed as a recreational counselor for seven years.

The paraprofessional is a retired federal government employee who was a graphic artist. Immediately after retirement, he enrolled in a graduate program and completed coursework in elementary education while working as a substitute teacher. For the next two years, he worked as a paraprofessional for public day program schools, and eventually worked as a special education teacher at a high school for three years. Recently, he returned to the teaching profession as a paraprofessional.

## **Overview of Study Phases**

The study took place in the following four phases: baseline, intervention, immediate maintenance and generalization. Instruction during each phase, with the exception of the generalization phase, was conducted inside the school's conference room, or in a separate classroom. The time allotted for all phases of the study was 50 minutes for instructional and testing phases per student. Due to their different grade

levels, instruction in Language Arts took place at different times during the school day. Each phase is described in this section.

### **Baseline Phase**

During baseline phases of the study for each participant, the special education teacher and paraprofessional in the classroom were asked to provide classroom instruction to all students (i.e. setting the stage for a lesson, providing opportunities for guided and independent practice, and bringing closure to the lesson) on the writing process, and to address academic or behavioral concerns in the same manner as they had done throughout the school year, and prior to the study. Following one day of instruction, a baseline testing probe was given to each student which instructed them to write a persuasive essay in relation to the topic of the prompt (e.g., Should students be allowed to wear skinny jeans to school? Little et al., 2010). Each participant received one writing prompt per testing session across a minimum of five sessions.

All students participated in the first testing session on the same day; however, as data was collected throughout the baseline phase, testing data points were staggered between students as to when they would receive a testing probe. Unlike previous studies where students were placed in groups according to their writing abilities (e.g., Mastropieri et al., 2009), and instructional lessons began in each of the groups staggered over time, participants received individualized instruction if necessary due to their unpredictable patterns of disruptive and non-compliant behavior. For example, Student A was tested on sessions one through five, but Student E was tested during sessions one, four, five, nine, eleven, twelve, thirteen, and fifteen. When a student had completed the

number of baseline testing probes as determined earlier through the aforementioned randomization procedure, the student began the intervention phase of the study.

Testing essays were evaluated by the lead researcher on baseline data, including mean holistic scores, number of words, number of transition words, and time on task for each participant. This procedure was repeated and staggered throughout the baseline phase for each student until he was scheduled to receive the intervention. Throughout the baseline phase for each student, a different writing prompt was given, and data on dependent measures were also collected.

### **Intervention Phase**

The intervention phase consisted of individual instruction initially in the school's conference room, but later in a small classroom setting designated for the study during the extended language arts period. Previous research (Graham et al., 1989; Mastropieri et al., 2009) provided intervention instruction to all students until they reached criterion performance on writing persuasive essays; however, classroom educators are constrained by factors such as instructional pacing guides that prescribe the amount of time allocated to specific curricular objectives. For example, the special education teacher was required to focus on building academic vocabulary and literacy through science, where students were required to learn approximately 30 – 35 new vocabulary terms for the 3<sup>rd</sup> quarter of the school year. As a result, this study provided 10 instructional sessions over 15 days to examine the impact of more limited amounts of instruction than would be available in applied settings. Student A participated in five 45-minute instructional sessions for a total of 225 minutes; Student B participated in six 45-minute sessions for 270 minutes; and

Students C, D, and E participated in for 45-minute sessions for a total of 180 minutes.

After students received instruction on the writing strategy, they were administered a testing probe on the following session day. For example, Student A began receiving instruction on the writing intervention during Session six, and then received a testing probe during Session seven. Overall, students did not require more than one day of instruction on the writing strategy per instructional lesson across a total of five lessons. Essays during this phase were evaluated by the lead researcher, and descriptors of these measures appear in the next section.

### **Immediate Maintenance Phase**

The purpose of the immediate maintenance phase is a measure of whether or not strategies or interventions of an experiment continue once the research is completed (Kennedy, 2005). Maintenance probes were conducted during this phase of the study. Students were given writing prompt and instructed to write a persuasive essay. While students wrote, on-task and off-task behaviors were recorded using the time sampling procedures discussed above. The essays were evaluated by the lead researcher on dependent measures such as the mean holistic score, number of words, number of paragraphs and number of transition words. Descriptors of these measures appear in the next section.

### **Generalization Phase**

The generalization phase began once students completed the immediate maintenance phase of the study. Generalization of the strategy occurred in novel situations in relation to using the strategy. During the generalization phase of the study, a

writing probe related to the student's science and social studies content was generated and used during each of these classes. Students were instructed by their special or general education teacher to write a persuasive essay pertaining to the class activities(s). Generalization of the POW + TREE strategy took place in the regular education classroom setting for Student B, and in the special education classroom setting for Students A, C, D, and E, and data were collected by the lead researcher.

### **Data Collection**

#### **Observer Training Procedures**

The primary researcher of this study was the lead researcher, trainer of the intervention to the teacher, and the primary observer. A special education administrative coordinator of the program for students with emotional disabilities and specific learning disabilities was trained as a secondary observer. This person has a special education teacher endorsement from the Commonwealth of Virginia for students with emotional, specific learning, and intellectual disabilities and is a K-12 administrator with more than eight years of teaching experience as a special education teacher and administrator.

Training sessions for the observer prior to the intervention included the operational definitions of on-task behavior, off-task behavior, the intervention strategy, and the total agreement approach for calculating interobserver agreement. Observations of the use of strategies were conducted in the language arts classroom setting to obtain data on accuracy of writing responses. Observation data of on- and off-task behaviors was collected during consecutive sessions until 85% or higher of agreement was established (Kennedy, et al., 2005).

## Interobserver Agreement

Interobserver agreement data was collected to ensure the integrity with which data were recorded (Kennedy et. al., 2005). The lead researcher trained a second observer using the time-on-task data sheet. In order to prevent researcher drift, ongoing reviews of observation codes by the lead researcher and second observer were implemented.

Interobserver agreement data was calculated using the *interval agreement* (Kennedy et al., 2005) approach by using the following formula:

$$\text{Agreement}/(\text{Agreement} + \text{Disagreement}) \times 100\%$$

The second observer was given multiple opportunities to practice observing and documenting students' on-task behaviors independent of the study. Once the observer was able to achieve at least 80% accuracy on observations, the second observer was allowed to participate in the data collection, which was achieved at 85% on the second trial.

The overall reliability of the second observer compared to the lead researcher was 91% for on-task behaviors during writing assignment throughout the three (baseline, intervention, and maintenance) phases of the study. Table 9 displays the interobserver agreement for time-on-task across all phases of the study.

Table 9

### *Interobserver Agreement of Time on Task Across Phases*

Phase	Agreement <sup>a</sup>
Baseline	86%
Intervention	92%

$$\frac{\text{Maintenance}}{\text{Total Agreement Agree}/(\text{Agree} + \text{Disagree}) * 100} = 100\%$$

### **Fidelity of Treatment**

In order to help ensure that the intervention is delivered as intended, the lead researcher used scripted lesson plans (see Appendix G). The specific areas monitored included (a) amount of time spent on each lesson and (b) consistency in using the POW + TREE writing strategy. Fidelity of treatment within the study was ensured through two different methods: (a) a checklist was completed by an observer for lessons observed; and (b) independent observations were completed by an educator to ensure the scripted lessons were followed. Fidelity was established using observations of eight (33.3%) of the total (24) number of sessions. The checklist aided the observer to document the following:

- scripted lessons were followed verbatim;
- visuals of POW+TREE were posted in the classroom;
- graphic organizers were provided to students;
- writing prompts were stated to students, time-on-task data was documented for each participant in two-minute intervals; and
- written persuasive essays were scored.

The POW + TREE Fidelity of Treatment Rating Scale used during the study is included as Appendix K. As a second method to ensure fidelity, informal observations were conducted by an educator who was familiar with conducting fidelity checks and the implementation of research-based interventions for students with disabilities. Prior to conducting any observations, the lead researcher provided the educator with a copy of

scripted lessons, and a copy of an instructional procedure checklist. Five observations were conducted to ensure fidelity of treatment. Following all observations, the lead researcher met with the educator to review areas of strength and areas of growth on lessons observed.

### **Intervention Materials**

The materials used in this study were similar to those used by previous research on SRSD instruction for the persuasive writing POW+TREE (Mason & Shriner, 2008; Mastropieri et al., 2008; 2009). The primary researcher provided all educational materials that were used during the intervention. In addition, other materials including a timer, tape recorder, attendance sheets, and a portable container for storage and organization of all study materials were used throughout the study.

### **Teaching Materials**

The primary researcher maintained copies and posters of all the materials described in the student materials section. During the training sessions, the primary researcher maintained a notebook of scripted lesson plans on how to teach the POW + TREE strategy, writing supplies such as paper, graphic organizers, pens, and pencils. The special education teacher and paraprofessional received two half-day training sessions on the POW+TREE writing strategy to make them aware of the intervention that students would be learning. Copies of the scripted lesson plans can be found in Appendix G. The first half - day of the training consisted of an overview of SRSD instruction, while the second half - day focused on how to instruct students using SRSD instruction (De La Paz & Graham, 2002; Mastropieri et al., 2010).

## **Student Materials**

Student materials consisted of three-ring binders and folders for students to keep their materials throughout the study. The materials included a graphic organizer of the POW + TREE strategy (see Appendix H), a transition word chart to aide in the development of transition paragraphs was posted on the classroom wall, and a journal notebook to reflect on ways to generate ideas and reflect upon the writing process. Although journals were provided to students, they frequently refused to do any additional writing following instruction. Students were given access to a word processor to accommodate fine motor deficits as needed, but no student required or used such accommodations.

## **Lesson Plans**

Detailed lesson plans for the intervention were implemented by the primary researcher. These plans included specific guidelines and formats to follow during instruction, which was a replication of previous research on SRSD and writing instruction (Harris, et al., 2008). SRSD and the POW + TREE writing strategy was taught individually to participants once they began the intervention phase of the study as determined through random assignment procedures discussed earlier in this chapter. Once two or more students began receiving instruction on the intervention, the researcher instructed students in groups; however, due to significant behavior concerns, all instruction occurred individually thereafter. This phase of the study of the study took place over the course of 19 total sessions. The following procedures occurred for each lesson outlined below.

### **Develop Background Knowledge of the Strategy**

Step one of the first stage provided students with the background knowledge of the writing assignment, where the mnemonic POW was reviewed. The lead researcher discussed what it stood for, and informed students that POW gave them power when they wrote. The researcher informed students that a good essay tells a reader what the writer believes, gives a reader reasons why, provides an explanation for each reason, and it might make the reader agree with the writer. After a brief discussion, the researcher reviewed the mnemonic TREE and each part was reviewed and discussed with students. A comparison was made to students of how TREE relates to a living tree, where the topic sentence is like a trunk; reasons are the roots; providing explanations makes the trunk stronger; and an ending is how the earth wraps around a tree.

Next, the student was instructed to silently read a sample opinion essay and to determine whether or not the writer used all of the parts of POW + TREE (i.e. what I believe, at least three reasons why, an explanation for each reason, and an ending sentence) as the researcher read the essay aloud. The student was also instructed to raise his hand once he heard what the writer believed, each reason why with an explanation, and an ending. Afterwards, the student re-stated the meaning of TREE with and without look backs, and a second opinion essay was distributed and the process was repeated. Two sessions per student were devoted to this stage.

### **Discuss the Strategy**

During the second stage of the intervention, the student and lead researcher discussed the importance of writing a persuasive essay using the new strategy that was

taught. The student was asked to write the POW+TREE mnemonic on a separate sheet of paper and to state what each letter represented. This technique was repeated throughout all stages of the intervention to ensure students understood the strategy. Two additional sample essays were given to the student, where he was instructed to verbally identify the essay parts. The student was also asked if he could think of more reasons and explanations. During this session, a list of transition words was given to the student, which was also posted in the classroom. (Frequently, transition words were called *million dollar words* to promote their use in a student's development of a persuasive essay). A substantial amount of time was spent on reviewing previous writing samples that a student had written. The student was instructed to read their essay and to determine what parts of POW+TREE existed – if any.

Afterwards, an essay rocket graph was distributed to the student, where he was instructed to fill in one space for each step in TREE, and if he had more than three reasons, then he could burst the rocket (Harris et al., 2008). The goal of writing better opinion essays was repeated on numerous occasions by the lead researcher, and that good opinion essays are not only fun for a student to write, but they are fun for others to read and they make sense. Instruction on this stage of the intervention occurred in one session for each participant.

### **Model the Strategy**

During this stage of the intervention, students were tested to see if they remember POW + TREE, and the POW strategy was modeled during the development of an essay. Each letter of the strategy was discussed aloud with students. For example, “Pick My

Idea” was modeled for students with my self-statements such as “I have to let my mind be free,” “Take my time,” and “Think of new, fun ideas.” Organize my notes was modeled by using self-statements such as “What do I have to do? I have to write a good opinion essay. My essay needs to make sense and have all the parts. Remember P in POW – Pick my idea. Let my mind be free. Take my time and think about what I believe and some good reasons why it will come to me.” “Now I can do O in POW which stands for Organize my notes.” This procedure was repeated for the W in POW: Write and say more.

At this point, the student was instructed on using self statements by reflecting upon his thoughts prior to writing, during the writing process, and at the completion of writing. The student then wrote Students were instructed on how to make self-statements, and the essay developed earlier in the lesson was graphed.

### **Memorize the Strategy**

During this lesson, the POW + TREE strategy was reviewed and students were tested. At the beginning of previous sessions, students defined POW+TREE aloud and described what each letter represented. All students were able to complete this task with no concerns, and students were weaned off the POW + TREE graphic organizer and helped to develop their own notes on a blank paper. The same collaborative writing procedures used in previous sessions continued to be implemented as well.

### **Support the Strategy**

Collaborative writing involving all students who reached this phase of the study took place in the classroom during this stage of the intervention. The POW+TREE

strategy was reviewed aloud and students were given a blank graphic organizer along with their self-statements sheets. Practice prompts were displayed and each of the POW + TREE processes was reviewed. Students lead the discussion, wrote self-statements on a blank sheet of paper and shared their ideas. The lead researcher consistently reminded students of the goal of writing better opinion essays and supported students' use of the strategy through collaborative practice. A group of students consisted of no more than two students; however, instruction as a group only occurred during session 12 with Students A and B, and during session 15 with students B and C. Following instruction, each participant wrote an opinion essay independently using their own notes and continued to graph their essays and color parts of the graph to represent the number of million dollar words used in their persuasive essays.

### **Independent Practice of the Strategy**

Throughout these lessons, students independently planned and wrote persuasive essays using the POW + TREE strategy and wrote self-instructional statements. Students continued to set goals, and write self-reflection statements about the writing process, but also collaborated with other students about the writing process.

At this point, at least four writing prompts were individually given to students prior to the start of the immediate maintenance phase of the study (Student A, N=5; Student B, N=6; Student C, N=4; Student D, N=4; and Student E, N=4). This process allowed the lead researcher to differentiate instruction to students, and support the strategy with reminders of using self-statements, using million-dollar words, and developing an essay that would make sense. Furthermore, this process reduced the

possibility of test anxiety because students were provided with opportunities to ensure they could apply the strategy under normal circumstances (Little et al., 2010).

### **POW + TREE Mnemonic Chart**

A chart depicting the process of the POW+TREE strategy for writing persuasive essays was used during instruction. The chart was posted on a wall in the classroom for all students to reference (see Appendix H).

### **Data Analysis**

The analysis of the outcome data includes visual and statistical analyses which are discussed in this section. Analysis of outcome data are similar to previous research studies on SRSD instruction and writing of students with EBD (Atkins et al., 2005; Lane et al., 2009; Mastropieri et al., 2009; Little et al., 2010).

### **Visual Analysis**

Data gathered from this study was evaluated through visual analysis of graphed data points taken during the baseline, intervention, maintenance, and generalization phases. Certain characteristics of the data paths within and across phases were examined in order to judge the effectiveness of the intervention. These characteristics include

- the mean level of data points in baseline and intervention;
- the trend in performance across phases;
- the percentage of data that do not overlap (PND) in adjacent phases; and
- the overall immediacy of change in baseline and intervention.

The mean level of data points was calculated for the baseline and intervention conditions by averaging the data points within each condition. The data points were

connected to determine the trend of the data path (i.e. magnitude–high, medium, or low; and slope–positive, flat, or negative). Trend data in regards to slope and magnitude are simultaneously evaluated; a positive slope within a phase is one in which data points are increasing in value within a phase. A negative slope is defined as a downward pattern in the data within a phase. Magnitude is defined as the size or extent of the slope, which is noted as high, medium, or low. For example, a high-magnitude slope is characteristic of rapidly increasing or decreasing patterns in data; a low-magnitude slope is a gradually increasing or decreasing pattern of data. Immediacy of change accounts for changes in the level and trend of the data (Kennedy et al., 2005). Variability of the data (i.e. high, medium, or low) was determined in relation to the trend of the data path. In addition, lines of progress were drawn within and across baseline and intervention phases to facilitate calculation of the aforementioned characteristics, and to determine the rapidity of change (Alberto et al., 2009).

The visual inspection of all data points throughout all phases of the study was also conducted through the percent of non-overlapping data (PND). Specifically, PND scores are intervention data points that do not overlap with the highest or lowest baseline data point over the number of total points in the intervention phases. (Scruggs, Mastropieri, & Castro, 1987). The results of the study are presented in the next chapter.

## 4. RESULTS

This chapter begins with a summary of the methods used to address each research question. The visual analyses of quantitative and qualitative results are discussed for each student in the following order:

- numbers of words used;
- number of transition words used;
- mean holistic score of persuasive essays, which addresses the use of POW as a pre-writing strategy and the use of TREE strategy in developing a persuasive essay for a given topic; and
- time on task when writing an essay.

Next, a statistical analysis of the data is presented, and finally, the analysis of the data from question three addressed how students viewed the quality and effectiveness of the intervention (i.e., the social validity of the intervention) is discussed.

Initially, six students consented to participate in the study; however, one student withdrew within two weeks. Ultimately, five students were administered the strategy through baseline and intervention phases resulting in a total of 75 independent observations collected during 24 sessions. As determined by the selection procedures discussed in Chapter 3, each participant was assigned to receive the writing intervention. Throughout the study, indicators of quality single-subject research recommended by

Horner et al., (2005) were used; the dependent variables were operationally defined and measured repeatedly; recordings were assessed for consistency and were selected for their social significance.

### **Research Questions and Methods**

Table 10 represents the research questions with a summary of analyses used.

Table 10

#### *Research Questions and Methodology*

Research Questions	Measure	Kind of Data	Analysis
1. How will students use the POW+TREE in written expression to improve their writing through SRSD from baseline, intervention, maintenance, and generalization phases?	Probes	Baseline, intervention, maintenance, and generalization phases	Visual inspection, Statistical analysis (PND)
2. Will strategy instruction result in increased length of sentences, transition words, and number of paragraphs as evidenced through persuasive essays?	Probes	Baseline, intervention, maintenance, and generalization phases	Visual inspection, Statistical analysis (PND)

3. Will teaching of SRSD increase on-task behavior across all phases of the study?	Time sampling teacher questionnaires	On-task/off-task behavior, quality of written essays	Visual inspection, teacher interviews. Statistical analysis (PND)
4. Can students re-state the POW + TREE strategy as evidenced through questionnaires and interview questions?	Interview questionnaire	Qualitative data	Four-point Likert scale
5. What are students' perceptions on learning the POW + TREE strategy to develop persuasive essays?	Interview of students'	Qualitative data	

### Visual Analysis of Data

This section presents the data collected for each of the five students participating in the study. As previously noted, the mean level of data points are calculated for the baseline and intervention phases by averaging the data points within each condition. Trend data in regards to slope and magnitude are simultaneously evaluated; a positive slope within a phase is one in which data points are increasing in value within a phase. A negative slope is defined as a downward pattern in the data within a phase. Magnitude is defined as the size or extent of the slope, which is noted as high, medium, or low. Immediacy of change accounts for changes in the level and trend of the data (Kennedy et al., 2005). Furthermore, a summary of performance across baseline, intervention, immediate maintenance and generalization phases is discussed. Table 11 provides an

analysis of student outcomes on SRSD instruction using the POW+TREE writing strategy.

Table 11

*Overall Results of Written Essays*

Components	Baseline Mean (SD)	Intervention Mean (SD)	Immediate Maintenance Mean (SD)	Generalization Mean (SD)
Number of words	23.90 (9.92)	55.13 (23.03)	50.53 (12.16)	41.20 (11.16)
Number of transition words	0.00 (0.00)	3.18 (2.55)	2.19 (1.47)	2.40 (1.36)
Mean holistic score	2.98 (0.40)	7.30 (1.54)	7.75 (0.90)	7.80 (0.75)
Time on task	25% (1.68)	68% (2.37)	78% (4.29)	68% (1.60)

**Baseline Writing Performance of Students.** Throughout the baseline phase for each dependent variable, none of the students demonstrated the ability to develop a persuasive essay. According to Table 11, the overall mean number for mean holistic score was 2.98 on a scale of 9 points, where essays contained a limited number of words, and students had significant difficulties remaining on-task. Scores on student essays ranged from 2.0 to 4.0, and no students wrote transition words in their essays. The length of sentences ranged from 1.0 to 3.0, which were very limited in details and were written

in a hasty manner. Furthermore, student performance across all components on writing a persuasive essay was low.

**Intervention Writing Performance of Students.** There was a significant improvement in the planning and writing of persuasive essays for all students as demonstrated by use of the POW+TREE writing strategy, as evidenced through the analysis of baseline and intervention performance of all students in reference to mean holistic scores, the number of words used, number of transition words used, number of paragraphs written. During baseline, all students' had difficulties developing a persuasive essay; however, during intervention, explicit instruction was given to students on defining the key components of developing a persuasive essay through POW+TREE (i.e., pick your topic, organize your thoughts, write and say more + topic sentence, three or more reasons to support your topic, ending and examine). Afterwards, they were administered probes and were instructed to write a persuasive essay. Data was collected during the intervention phase for instructional purposes to determine areas of strengths and growth of students. Also, the data was used by the lead researcher in order to gauge instruction as to what concepts needed to be re-taught to students. As noted in Table 10, students began to acquire knowledge of how to develop a persuasive essay, and remained on-task more frequently when writing a persuasive essay.

**Immediate Maintenance.** Table 11 presents the data demonstrating that all students improved in their ability to develop a persuasive essay through SRSD instruction on POW+TREE. Immediate maintenance scores demonstrated students improved from baseline measures in relation to number of words, number of transition words, mean

holistic scores, and time on task. Also, there was less variability in the standard deviation of scores in regards to mean holistic scores across immediate maintenance and generalization phases (0.90 and 0.75 respectively). Randomization tests similar to previous studies (Mastropieri et. al, 2009; Todman & Dugard, 2001) from baseline to generalization yielded statistical significance ( $p = .004$ ) in all cases indicating a high probability of a nonchance relation between the onset of intervention and change in writing performance. Individual student performance is discussed later in this chapter.

**Generalization.** Once a student completed the immediate maintenance phase, a generalization probe was administered three weeks later to measure retention of the POW+TREE writing strategy over time. The lead researcher administered the probe individually to a student in either their general or special education classroom setting for social studies or science in the same manner during previous phases of the study. Overall, the largest improvement across phases was demonstrated in the area of Mean Holistic Scores, where students effectively used POW+TREE to develop persuasive essays that were longer, more detailed with reasons to support their opinion, and consisted of more transition words. Furthermore, visual inspection and statistical analysis of the data noted that students maintained similar effects in comparison to their intervention and immediate maintenance performance. Due to the specific time constraints within the school setting, and the process of students preparing for and participating in yearly assessments, generalization data were limited to one data point per student.

## **Number of Words**

This section discusses the outcome of SRSD instruction and use of the POW + TREE strategy to develop a persuasive essay in regards to the number of words used. Figure 1 provides a graphical representation of their performance, an analysis of each student's performance, followed by an overall summary on the number of words written by students.

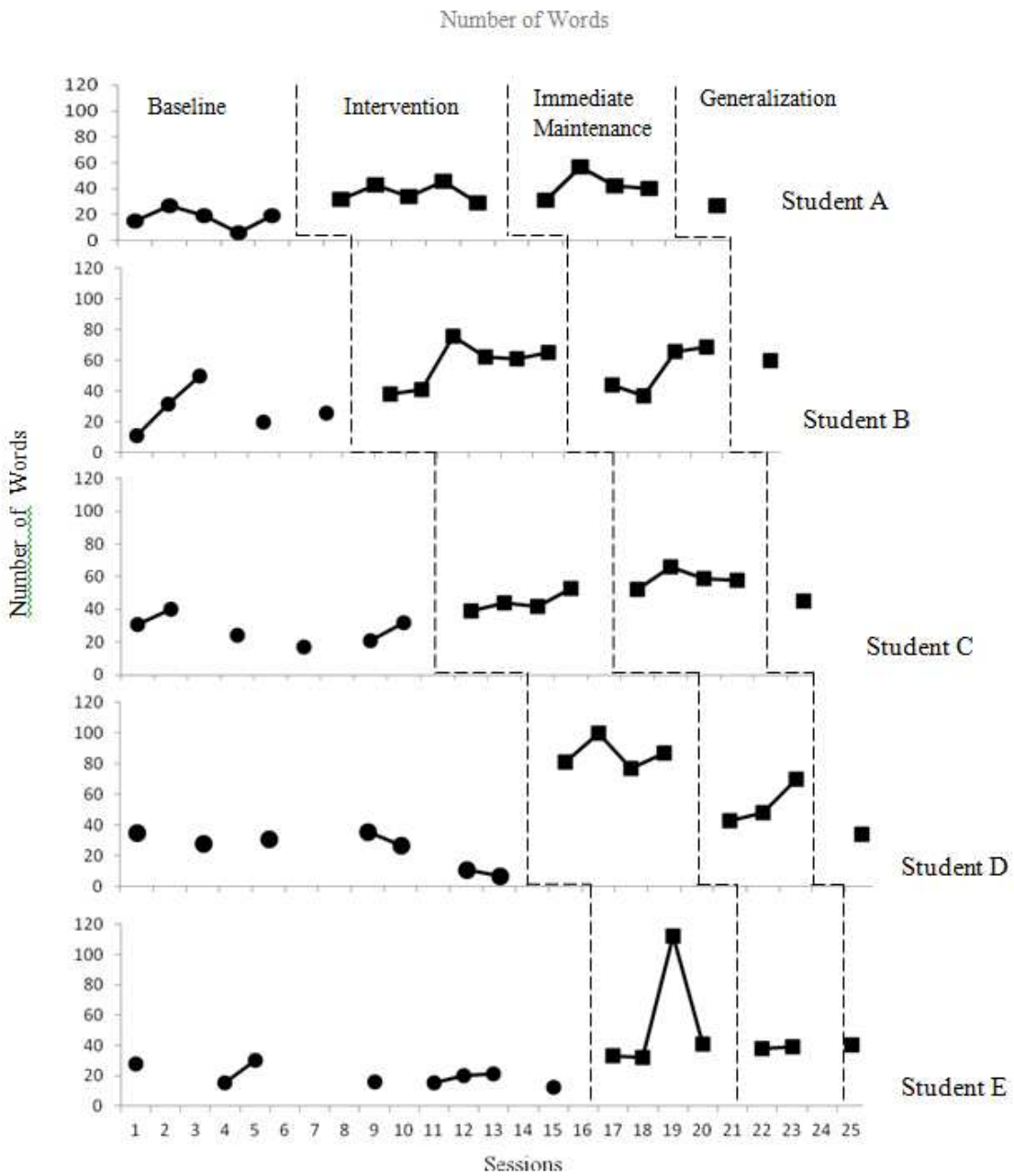


Figure 1 Graphical Representation of Student's Number of Words Written

**Student A.** The length of sentences also increased from baseline to intervention and maintenance phases for Student A. The mean length of sentences increased from 17

at baseline to 37 at intervention. His performance at immediate maintenance improved to 43 words, but declined to 27 words at generalization. The immediacy of change was moderate; trend data during baseline was low negative, but changed in treatment to high positive. No data points the intervention or maintenance phases overlapped with the highest point in baseline. Although there was an increasing trend in data from baseline to intervention phases, the slope of the change was not substantial. Overall, the POW + TREE writing strategy was associated with positive effects regarding the number of words written (PND score = 100%); maintenance effects of POW+TREE were effective (PND score = 80%). Table 12 displays these results for Student A.

Table 12

*Student A POW+TREE – Number of Words*

Student A	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	17/-1.3	37/-0.3	43	27
Trend	Low negative	High positive	High positive	
Variability	Low	High	High	

**Student B.** Table 13 displays his performance in relation to the number of words written to develop a persuasive essay. The mean length of sentences changed from 28 at baseline to 57 at intervention, and remained somewhat consistent at immediate

maintenance. The number of words slightly increased at the generalization phase. The immediacy of change was moderate. Trend data during baseline was medium negative but substantially changed in treatment to medium positive as noted through the change in slope from baseline to intervention. No data points within the intervention or maintenance phases overlapped with the highest point in baseline. There was a reverse trend in data between baseline and intervention phases. Overall, the POW+TREE writing strategy was associated with positive effects in relation to the number of words written (PND scores = 60%); maintenance effects of POW+TREE were very high (PND score = 100%). Table 13 displays data on the number of words written by Student B.

Table 13

*Student B POW+TREE – Number of Words*

Student B	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	28/0.28	57/5.17	54	60
Trend	Medium negative	Medium positive	Medium positive	
Variability	Low	Medium	Medium	

**Student C.** The number of words that Student C wrote during the study increased from baseline to intervention phases. The mean length of sentences changed from 28

words at baseline to 45 at intervention. Student C’s performance improved during the immediate maintenance phase, where the mean changed to 59 words, but returned to intervention levels at generalization. The immediacy of change was substantial; trend data during baseline was low negative, but changed in treatment to high positive, as well as a negative slope during baseline to a positive slope during intervention. Two data points within intervention phases, however, did overlap with the highest point in baseline. There was a reverse trend in data between baseline and intervention phases. Overall, the POW + TREE writing strategy was associated with positive effects in relation to the number of words written (PND score = 80% and maintenance effects of POW+TREE were very high (PND score = 100%). Table 14 displays data on the number of words written by Student C.

Table 14

*Student C POW+TREE – Number of Words*

Student C	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level (M)	28/-1.15	45/4	59	45
Trend Variability	Low negative Low	High positive Medium	High positive Medium	

**Student D.** Table 15 displays Student D’s performance related to the number of words written to develop a persuasive essay. The mean number of words written changed from 25 at baseline to 86 at intervention; hence, the mean score regarding length of sentences rapidly increased from baseline to intervention. Immediate maintenance effects were positive (56), but there was a decline in the number of words written during generalization (35). The immediacy of change was moderate; trend data during baseline was low negative but changed in treatment to medium positive; however, there was not a substantial change in slope across baseline and intervention phases. Data points within the intervention phase overlapped with the highest point in baseline. There was a reverse trend in data between baseline and intervention phases. Overall, the POW + TREE writing strategy was associated with positive effects in relation to the number of words written (PND score = 80%) and maintenance effects of POW + TREE were very high (PND score = 100%). Table 15 displays these results.

Table 15

*Student D POW+TREE – Number of Words*

Student D	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	25/-2.11	86/-0.50	54	35
Trend	Flat	High positive	Medium positive	
Variability	Low	High	Medium	

**Student E.** Table 16 displays Student E’s performance related to the number of words written to develop a persuasive essay. The mean number changed from 20 to 54, indicating the mean score of length of sentences increased from baseline to intervention. Effects during immediate maintenance were flat (38), but the student was able to generalize the strategy effectively, where 40 words were written in his persuasive essay.

The immediacy of change was rapid; trend data during baseline was low negative and remained the same in treatment (low negative). The substantial change in slope from baseline to intervention also supports the rapid change in the trend. Data points do not overlap with the highest point in baseline across intervention phase. There was a reverse trend in data between baseline and intervention phases. Overall, the POW+TREE writing strategy was associated with limited effects in relation to the number of words written (PND score = 60%); maintenance effects of POW+TREE were high (PND score = 100%).

Table 16

*Student E POW+TREE – Number of Words*

Student E	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	20/-0.79	54/10.4	38	40

Trend	Low negative	Medium positive	Flat
Variability	Low	Medium	Flat

**Summary of number of words.** Overall, students used more words to develop persuasive essays through use of the POW+TREE writing strategy from baseline to generalization phases. Student B demonstrated the greatest improvement in the number of words written across baseline to generalization phases (28 to 60). Student D improved the most from baseline to intervention phases (25 to 86), followed by Student E (20 to 54). Student C had the lowest performance level (28 to 45), but nevertheless, improved from baseline performance. Additionally, Student C demonstrated the greatest improvement across intervention and immediate maintenance phases (45 to 59). However, Student A (43 to 27), Student B (59 to 45) and Student D (54 to 35) wrote fewer words across immediate maintenance and generalization phases.

### **Number of Transition Words**

This section discusses the outcome of SRSD instruction and use of the POW + TREE strategy to develop a persuasive essay in regards to the number of transition words used. Figure 2 provides a graphical representation of their performance, an analysis of each student's performance, followed by an overall summary on the number of transition words written by students.

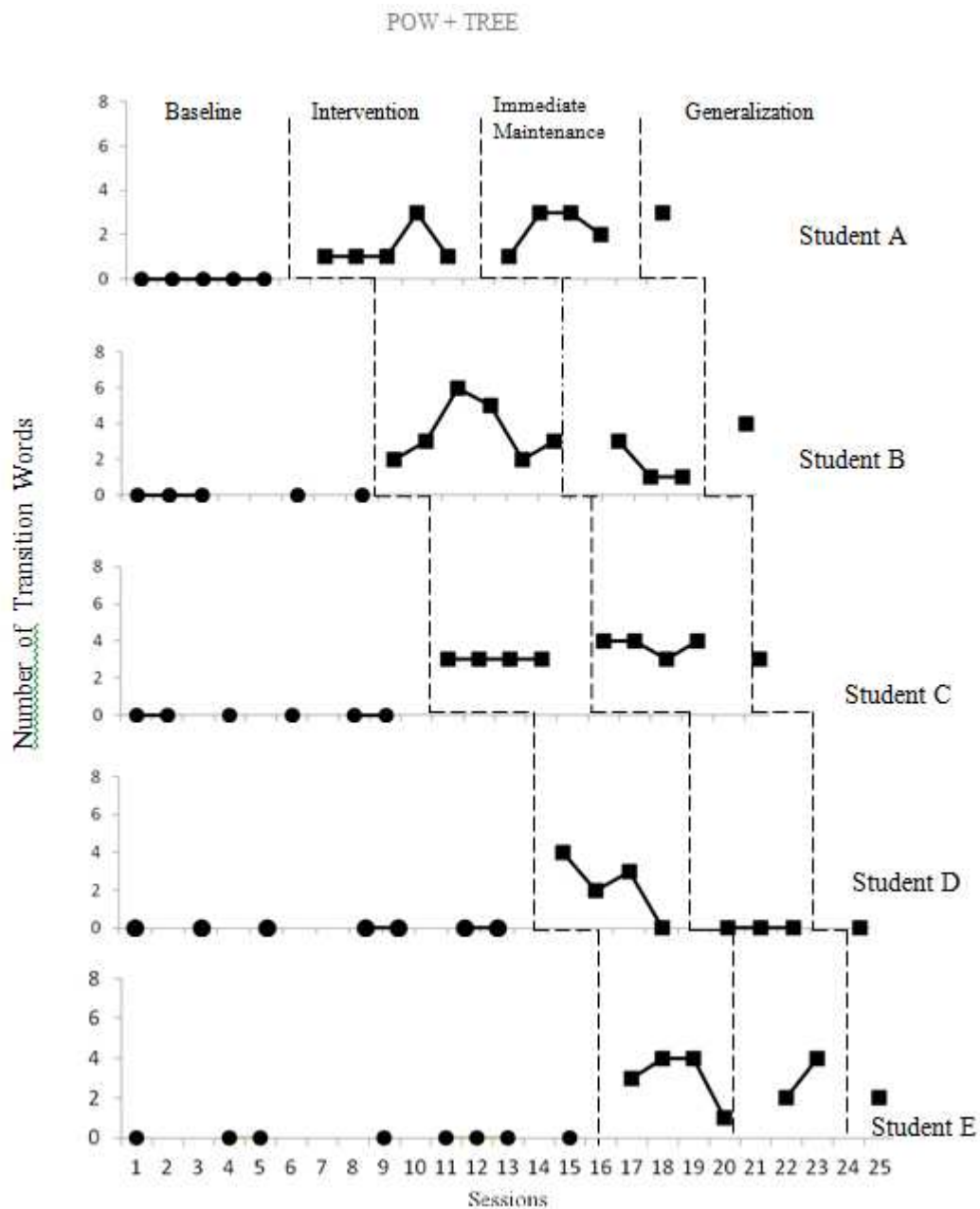


Figure 2 Graphical Representation of the Number of Transition Words Written.

**Student A.** There was an increase in the mean number of transition words used by Student A from 0 at baseline to 1.4 at intervention, and the number of transition words

increased at immediate maintenance to 2.3 words. Furthermore, Student A used three transition words in his persuasive essay at generalization, which was the most words used across all phases. The immediacy of change was low; trend and slope data during baseline was flat, but changed to low positive in treatment. There was no overlap with the highest point in baseline for any data points within the intervention phase (PND score = 100%); maintenance effects were high as well (PND score = 100%). Table 17 displays data related to Student A's use of transition words.

Table 17

*Student A POW+TREE – Number of Transition Words*

Student A	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	0/0	1.4/0.20	2.3	3
Trend	Flat	Low positive	Medium positive	
Variability	Low	Medium	Medium	

**Student B.** Student B also increased the number of transition words from baseline to intervention, where Student B used no transition words during baseline but during intervention phase, the mean level changed from 0 to 3.5. There was a decline in the number of transition words written at immediate maintenance (1.7), but the number of transition words written at generalization was 4. The immediacy of change was moderate;

trend data during baseline was flat but changed in the treatment phase to medium positive; however, the change was not substantial as demonstrated by the change in slope from baseline to intervention. No data points within the intervention phase overlapped with the highest point in baseline (PND score = 100%); maintenance effects were high as well (PND score = 100%). Table 18 displays data on the number of transition words written by Student B.

Table 18

*Student B POW+TREE – Number of Transition Words*

Student B	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	0/0	3.5/0.03	1.7	4
Trend	Flat	Medium positive	Low negative	
Variability	Low	Medium	Low	

**Student C.** There was an increase in the mean number of transition words used by Student C from 0 at baseline to 3 during the intervention phase. The number of transition words that Student C wrote increased at immediate maintenance to 3.8, but slightly decreased at generalization (3). The immediacy of change was moderate; trend data during baseline was flat but changed to low positive in treatment, but the slope

during both phase remained flat. No data points within intervention phases overlapped with the highest point in baseline (PND score = 100%); maintenance effects were high as well (PND score = 100%). Table 19 displays data on the number of word written by Student C.

Table 19

*Student C POW+TREE – Number of Transition Words*

Student C	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	0/0	3/0	3.8	3
Trend	Flat	Low positive	Flat	
Variability	Low	Medium	Flat	

**Student D.** Student D increased slightly in the mean number of transition words used reflected in the mean level which changed from 0 at baseline and 2.3 at intervention, but returned to baseline at immediate maintenance and generalization phases. The immediacy of change was slow; trend and slope data during baseline was flat but changed in treatment to low negative due to a return to baseline during Sessions 16 to 22. Data points within the intervention phase did not overlap with the highest point in baseline (PND score = 100%) and maintenance effects were high as well (PND score = 100%). Table 20 displays data regarding the number of transition words used by Student D.

Table 20

*Student D POW+TREE – Number of Transition Words*

Student D	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	0/0	2.3/-1.1	0	0
Trend	Flat	Low positive	Flat	
Variability	Low	Medium	Flat	

**Student E.** There was an increase in number of transition words used by Student E from baseline to intervention, where the mean level changed from 0 to 3 and remained constant through immediate maintenance. Student E's performance at generalization was fairly consistent as well (2). The immediacy of change was slow; trend data during baseline was flat, but changed in treatment to low positive; however, there was a negative change in slope from baseline to intervention, but the change was not substantial. All intervention points exceeded the highest point in baseline (PND score = 100%); immediate maintenance and generalization effects were high as well (PND score = 100%). Table 21 displays data related to Student E's use of transition words.

Table 21

*Student E POW+TREE – Number of Transition Words*

Student E	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	0/0	3/-0.6	3	2
Trend	Flat	Low positive/negative	Flat	
Variability	Low	Low	Flat	

**Summary of Transition Words Written.** Improvement on the number of transition words written by students was significant from baseline to intervention phases. During baseline, students did not any transition words, but Student B demonstrated the greatest improvement from baseline to intervention (0 to 3.5), followed by Student C (0 to 3) and Student E (0 to 3). Student E was the only student who wrote more transition words across intervention and immediate maintenance phases (3 to 3.8), and Student B demonstrated the greatest improvement across immediate maintenance and generalization phases (1.7 to 4). Student D returned to baseline performance and did not write any transition words during immediate maintenance and generalization phases.

**Mean Holistic Scores**

This section discusses the outcome of SRSD instruction and use of the POW + TREE strategy to develop a persuasive essay in regards to mean holistic scores. Figure 3

provides a graphical representation of their performance, an analysis of each student's performance, followed by an overall summary on mean holistic scores of essays written.

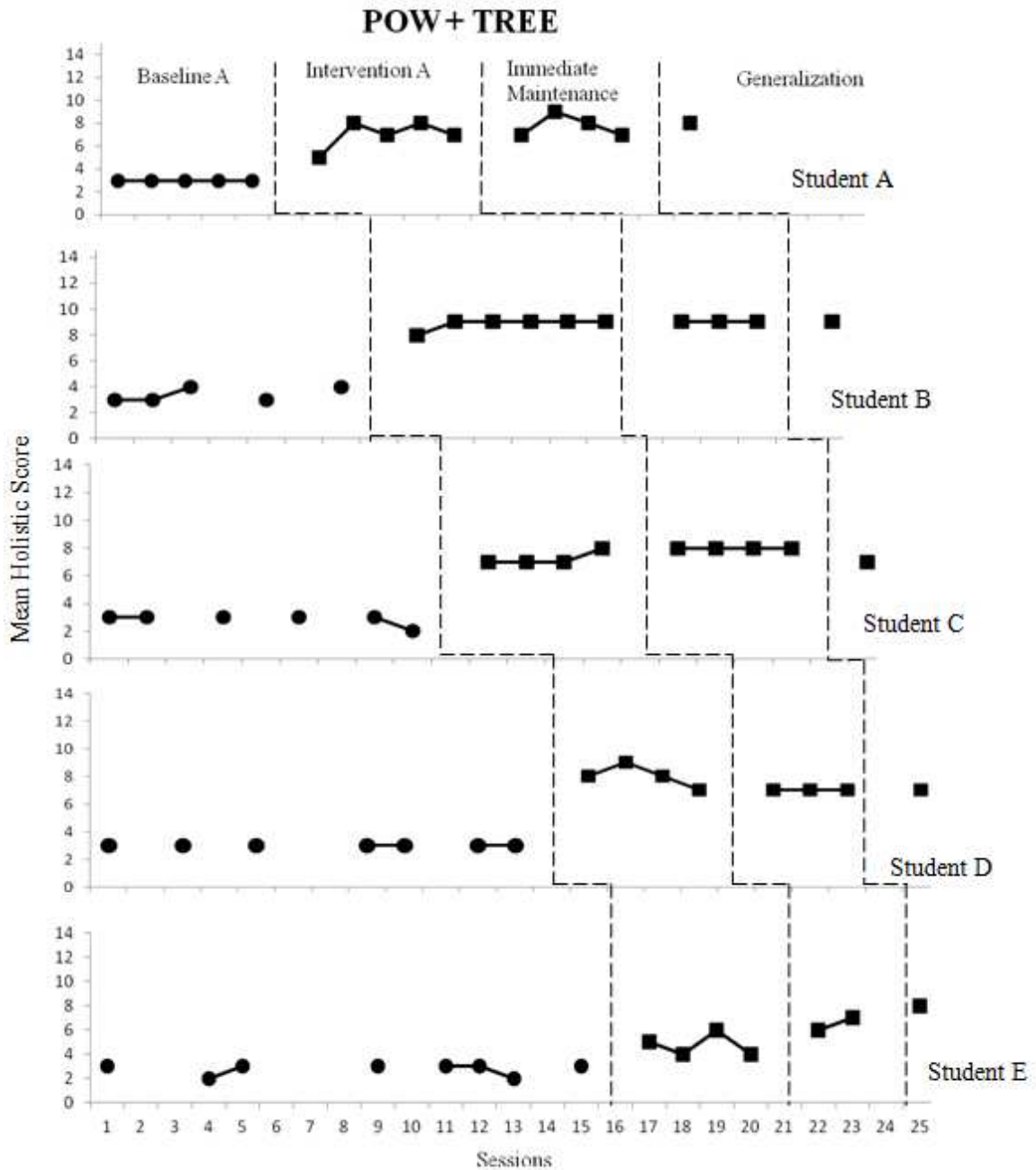


Figure 3 Graphical representation of Student's Mean Holistic Score

**Student A.** Strategy instruction for Student A began during session six and continued throughout 15 sessions. The mean level ( $M$ ) related to the overall use of the

strategy changed from 3 at baseline to 7 at intervention and remained somewhat consistent through immediate maintenance of the intervention. The highest score was obtained at generalization, where Student A scored an eight. The immediacy of change was low, with a flat trend during baseline, but it changed to low positive in treatment. The change in slope from baseline to intervention increased, but not substantially. PND results from baseline to intervention and during maintenance phase of the study were both 100%. Table 22 displays data related to Student A’s mean holistic score.

Table 22

*Student A POW+TREE – Mean Holistic Score*

Student A	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	3/0	7/0.4	7.6	8
Trend	Flat	Low positive	Low positive	
Variability	Low	High	Low	

**Student B.** Strategy instruction for Student B began during session 10 and continued through session 19 of the study. The mean level of the overall use of the strategy changed from 3.4 at baseline to 8.8 at intervention, and remained consistent at immediate maintenance and generalization phases (9). The immediacy of change in regards to the slope remained constant across baseline and intervention phases. PND results from baseline to intervention and during maintenance phases of the study were

82% and 100% respectively. Table 23 displays data collected on Student B’s mean holistic score.

Table 23

*Student B POW+TREE – Mean Holistic Score*

Student B	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	3.4/0.1	8.8/0.1	9	9
Trend	Flat	Low positive	Flat	
Variability	Low	High	Flat	

**Student C.** Strategy instruction for Student C began during session 11 and continued throughout session 20 of the study. The mean level related to the overall use of the strategy changed from 3.4 at baseline to 8.8 during the intervention phase. Performance at immediate maintenance and generalization phases were consistent in a positive manner with scores of 8 and 7 respectively. The immediacy of change was moderate, where the trend in baseline was flat, but changed to low positive in the treatment phase – which also correlates with the change in slope across baseline and intervention phases. PND results from baseline to intervention and during maintenance phases of the study were both 100%. Table 24 displays these results.

Table 24

*Student C POW+TREE – Mean Holistic Score*

Student C	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	3.4/-.01	8.8/0.3	8	7
Trend	Flat	Low positive	Flat	
Variability	Low	High	Flat	

**Student D.** Strategy instruction for Student D began during session 14 and continued through session 22 of the study. The mean level of the overall use of the strategy changed from 3 at baseline to 8 at intervention, but changed to 7 at immediate maintenance and generalization. The immediacy of change was moderate; the trend in baseline was flat, but changed to low positive in the treatment phase. Also, there was a negative change in slope from baseline to intervention. PND results from baseline to intervention and during maintenance phases of the study were both 100%. Table 25 displays data related to Student D's overall use of the strategy.

Table 25

*Student D POW+TREE – Mean Holistic Score*

Student D	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	3/0	8/-0.4	7	7
Trend	Flat	Low positive/negative		
Variability	Low	High		

**Student E.** Strategy instruction for Student E, the final student, began during session 15 and continued through session 24 of the study. The mean level (*M*), related to the overall use of the strategy, changed from 2.8 at baseline to 5.7 at intervention. Student E scored 6.5 at immediate maintenance but improved to 8 at generalization. The immediacy of change was moderate, since the trend in baseline was flat but changed to low positive in the treatment phase. As with Student D, there was also a negative change in the slope from baseline to intervention. PND results from baseline to intervention and during maintenance phases of the study were both 100%. Table 26 displays data on the overall use of the strategy by Student E.

Table 26

*Student E POW+TREE – Mean Holistic Score*

Student E	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	2.8/0	5.7/-0.1	6.5	8
Trend	Flat	Low positive	Low Positive	
Variability	Low	High	Low	

**Summary of Mean Holistic Scores.** Overall, students improved in their ability to write a persuasive essay in relation to using the POW+TREE writing strategy and writing mechanics (i.e., number of paragraphs, number of words, and number of transition words). Student B demonstrated the greatest improvement across baseline and generalization phases (3.4 to 9), and Student A (3 to 9), and Student E (2.8 to 8) demonstrated improvements as well. Although the effects were small for Student's C and D (3.4 to 7 and 3 to 7 respectively), there was an improvement from baseline to intervention. In addition, Student B also demonstrated the greatest improvement across baseline and intervention phases (3.4 to 8.8), and Student E across immediate maintenance and generalization phases (6.5 to 8). Student C's performance declined across intervention and immediate maintenance phases (8.8 to 8), as well as Student D's performance (8 to 7).

**Time on Task**

This section discusses the outcome of SRSD instruction and use of the POW + TREE strategy to develop a persuasive essay in regards to remaining on task with the writing assignment. Figure 4 provides a graphical representation of their observed behavior, an analysis of each student's performance, followed by an overall summary on writing and remaining on task with the assignment.

POW + TREE

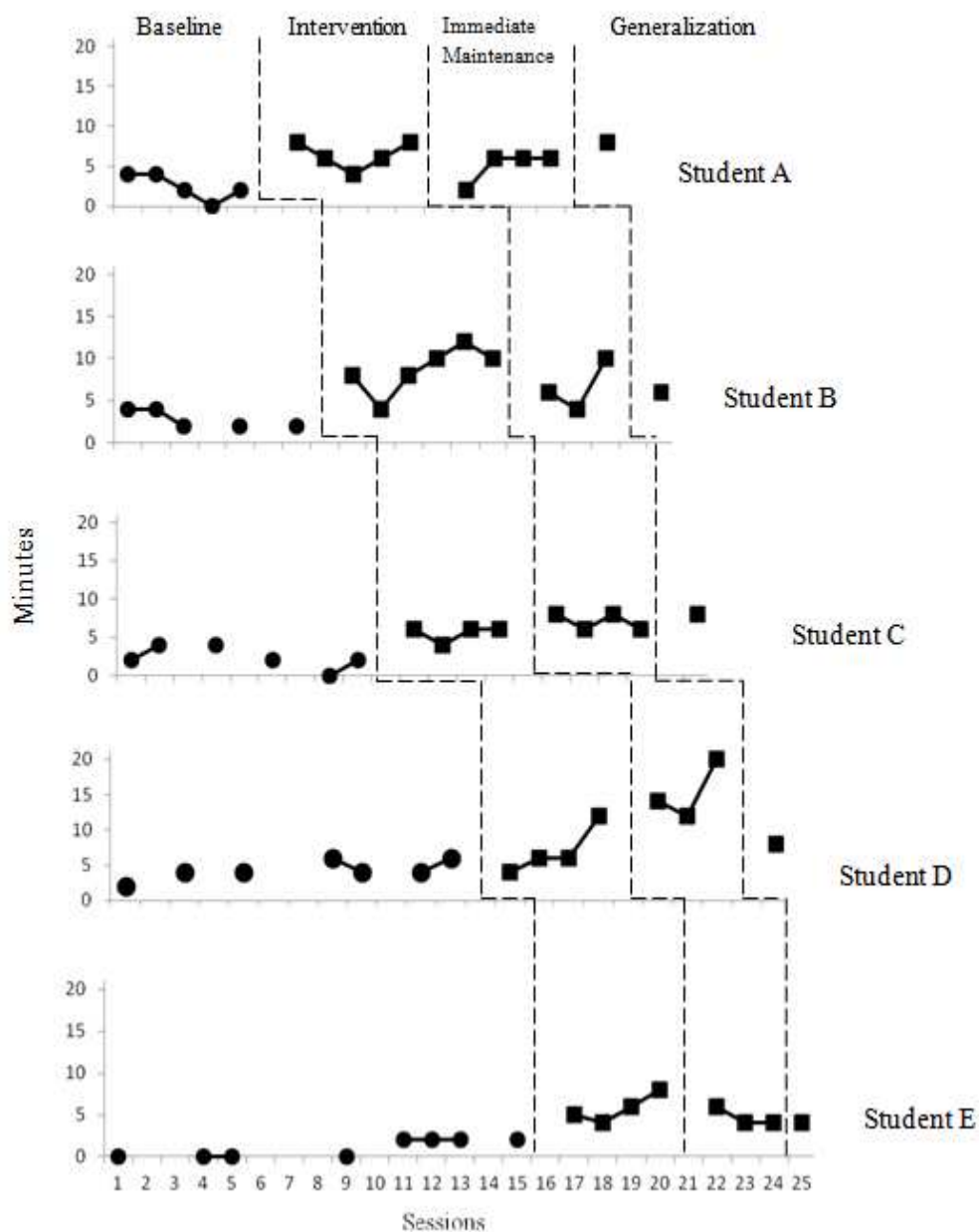


Figure 4 Graphical representation of Time on Task for Student's.

**Student A.** The amount of time that Student A was on-task with writing a persuasive essay increased from baseline to intervention phases. Student A was observed to be on-task 38% of the total time spent writing a persuasive essay during baseline, but was on-task 94% of the total time during intervention. At immediate maintenance, Student A’s ability to remain on-task slightly declined across immediate maintenance (88%) but improved during generalization (100%). There was in improvement in the slope from baseline to intervention, but the change was not substantial. Although the immediacy of change was low, there was a change in trend data from baseline to intervention phase. PND data from baseline to intervention was 82%, but increased to 100% through the generalization phase. Table 27 displays the data related to time-on-task for Student A.

Table 27

*Student A POW+TREE – Time-on-Task*

Student A	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	38 %/-0.8	94%/0	88%	100%
Trend	Low negative	Low positive/flat	Low positive	
Variability	Medium	Low	Low	

**Student B.** Student B remained on-task when writing a persuasive essay more often during the intervention phase than during baseline (i.e., 37% during baseline, and 93% during intervention of the total time spent writing a persuasive essay). However, Student B remained on task at immediate maintenance and generalization phases for 91% of the total time and 100% of the total time respectively. Although the immediacy of change was low, trend data pertaining to the slope improved from baseline to intervention phases. PND data from baseline to intervention was 78%; but it was 100% through the maintenance phase. Table 28 displays the result regarding number of minutes on task for Student B.

Table 28

*Student B POW+TREE - Time-on-Task*

Student B	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	37%/-0.3	93%/1.0	91%	100%
Trend	Low negative	Low positive	Low positive	
Variability	Low	Medium	Low	

**Student C.** Student C was on-task when writing a persuasive essay more often in the intervention phase (i.e., 35% during baseline, and 85% during intervention of the total time spent writing a persuasive essay), and improved his ability to remain on-task

through immediate maintenance and generalization phases (86% and 100% respectively). Although the immediacy of change was low, there was moderate change in trend and slope data from baseline to intervention phases. PND data from baseline to intervention was 87%, which increased to 100% through the maintenance phase. Table 29 displays these results.

Table 29

*Student C POW+TREE – Time on Task*

Student C	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	35%/-0.3	85%/0.2	86%	100%
Trend	Low negative	Low positive	Flat	
Variability	Low	Medium	Flat	

**Student D.** Student D also managed to remain on-task more frequently from baseline to intervention phases (48% during baseline, and 93% during intervention of the total time spent writing a persuasive essay). Student D’ performance remained consistent at immediate maintenance (91%), but performed at a lower level than intervention and immediate maintenance at generalization (80%). The immediacy of change was negative in the baseline phase, but changed to positive during the intervention phase which is

supported by slope data. PND data from baseline to intervention was 71% and increased to 100% through the maintenance phase. Table 30 displays on-task data for Student D.

Table 30

*Student D POW+TREE – Time on Task*

Student D	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	48%/0.2	93%/2.4	91%	80%
Trend	Flat	High positive	High positive	
Variability	Low	Medium	High	

**Student E.** Furthermore, Student E was on-task more frequently when writing a persuasive essay from baseline to intervention phases (18% during baseline, and 67% during intervention of the total time spent writing a persuasive essay), and his ability to remain on task at immediate maintenance and generalization phases were consistent with his performance during the intervention phase (77% and 67% respectively). Although the immediacy of change was moderate, there was a positive change in trend and slope data from baseline to intervention phase. PND data from baseline to intervention was 100% through the intervention and maintenance phases. Table 31 displays these results.

Table 31

*Student E POW+TREE – Time on Task*

Student E	Baseline/ Baseline Slope	Intervention/ Intervention Slope	Immediate Maintenance	Generalization
Mean Level ( <i>M</i> )	18%/0.2	67%/1.1	77%	67%
Trend	Flat	High positive	Flat	
Variability	Low	Medium	Flat	

**Summary of Time on Task Performance.** Following SRSD instruction on POW+TREE, all students improved in their ability to remain on-task from baseline to generalization phases, where student A demonstrated the greatest improvement (35% to 100%), and Student A demonstrated similar improvement (38% to 94%). Although Student's B, D, and E demonstrated small improvements, they were on-task more frequently during the generalization phase. Student's A and E improved the most between baseline and intervention phases (38% to 94% and 18% to 67% respectively), and Student D demonstrated the greatest improvement between intervention and immediate maintenance phases.

**Social Validity**

**Student Interviews.** Once a student completed the intervention phase of the study, he was interviewed by the lead researcher to gauge the students' perceptions of the POW + TREE writing strategy that was taught and learned. The purpose of the interview

was to develop a conceptual framework and understanding of “what’s going on” for students with EBD in relation to writing. The interviews were also used to guide decisions about instructional methods for writing persuasive essays (Maxwell, 2005). Each interview took place in the intervention classroom where the study took place to discuss areas of strength and areas of growth. A central theme emerged from the interviews in the area of behavior.

**Behavior.** In general, Students A, B, and C were able to restate the meaning of the acronym POW+TREE accurately. Student’s D and E, however, required additional prompts and clues in order to define TREE and POW + TREE, such as verbal reminders of the strategy, or reminders such as, “Remember the writing strategy we learned and practiced a few months ago?” This was quite alarming, and revealing, due to the fact that both students required similar reminders of academic and behavioral expectations throughout a given school day in order to maximize their learning capacity.

In addition to students remaining on task more frequently following the intervention, their behavior also improved. During baseline, students often engaged in verbal arguments with one another, or attempted to engage the lead researcher in a variety of conversations which were unrelated to the assigned task. As students used the strategy to plan, organize, and eventually write persuasive essays, their behavior improved in response. .

The use of visual charts and graphic organizers were also noted by the participants to be effective. Student C informed the lead researcher that it helped him think of more reasons to persuade readers to believe him. Student C also stated, “Yes,

because it helped me write my sentences.” Student B noted that he wanted to write as many reasons as possible to “try and get the rocket off,” in relation to the number of transition words used that correlated to a rocket launching in the air. Student D responded to the question about graphic organizers and visual charts, “Not sure.” However, he used all graphic organizers that were provided to him throughout the study.

The responses of Student D and E to interview questions were limited to one to three word responses, with mixed reactions pertaining to whether or not POW + TREE improved their writing abilities. For example, both students struggled with behavior in general; Student D missed a considerable amount of instruction due to the significant nature of his disability and severe behaviors of concern. For instance, on the last two data points of Student D’s baseline phase, he wrote a note to the lead researcher stating that his writing did not need to improve. During the last session of his baseline phase, he wrote a note to the lead researcher which stated that he did not want to continue with the study. However, Student D later recanted his statement and asked to participate in the study. Student E was able to participate in a number of writing sessions; conversely, he frequently rushed through assignments with little thought of using the strategy to improve his writing. His ability to remain on-task with writing assignments did improve over the course of the study. Table 32 includes selected student responses to selected interview questions.

Table 32

*Selected Responses to Interview Questions Regarding POW+TREE*

Questions	Response	Student
Did you like the writing strategy that was taught?	<i>Yes, I like how it was explained.</i>	Student E
Did you like the writing strategy that was taught?	<i>Not sure because I really didn't use it that much.</i>	Student D
What did you like about the use of visual charts when writing an essay?	<i>It helped me think of more reasons why someone would believe it.</i>	Student C
Did you like the writing strategy that was taught?	<i>Yes, because it was a good thing to learn.</i>	Student B
Will you use the strategy to write a persuasive essay in the future?	<i>Yes, I will use it when I have a writing test.</i>	Student A

**Student Questionnaire.** Additionally, each student was given a questionnaire during the intervention phase prior to being interviewed at the conclusion of the study. Findings from the questionnaire noted that 80% of students always used the POW strategy to plan their is that they frequently or almost always would use the POW+TREE writing strategy to develop persuasive essays in the future, and 80% of the students would use the strategy when writing a persuasive essay in the content areas of science

and social studies. A copy of the Social Validity Questionnaire is included as Appendix F.

**Summary of Social Validity.** The ability to communicate through written expression is a skill that must be developed through direct instruction on the skill. As previously noted, the ability to write significantly impacts performance in school, and has implications for future career and employment opportunities. Overall, students stated that learning the POW+TREE writing strategy not only helped them to develop persuasive essays, but assisted them in writing persuasive essays across the content areas of social studies and science. Secondly, their improved ability to elaborate on a given topic through writing provided opportunities for students to expand on their knowledge base on social studies and science topics in order to analyze and evaluate learned information.

Moreover, learning the strategy improved their ability to remain on-task with assignments more consistently which improved learning outcomes and minimized behavior concerns in the classroom. Throughout all intervention phases of the study, students used prewriting strategies to organize their thoughts before writing on a given topic. These observations were significant improvements in comparison to exhibited behaviors during baseline. Students also stated that they were on-task more frequently during writing assignments in other academic classes as well.

### **Summary of Results**

The outcome results of SRSD on written expression through the POW+TREE writing strategy indicated that performance on writing persuasive essays improved from baseline through the intervention phase. Furthermore, the improvement was maintained

during maintenance and generalization phases over baseline. Overall, students demonstrated improvement in writing persuasive essays in which the quality of writing samples consisted of a topic sentence, two or three reasons to support the student's position, and an ending to the essay. At times, a few students included counter reasons in their essays to note a different perspective that one could take. The largest area of improvement in student's ability to write persuasive essays was demonstrated in the number of words used to write essays from baseline to intervention. In this area, the mean and both lower and upper quartiles more than doubled.

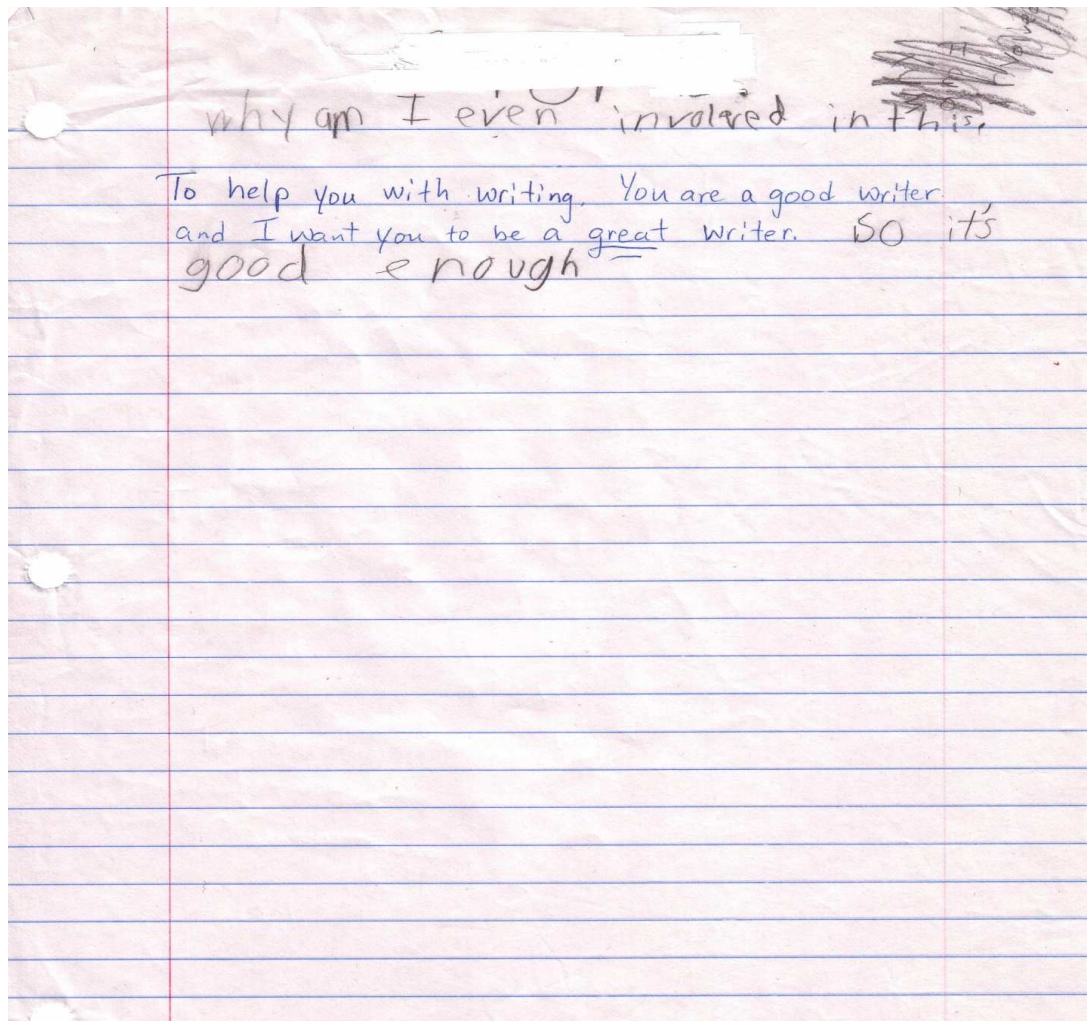
The students' mean holistic scores improved over the five months of the study; students were more on-task during instruction and independent practice, and, most importantly, students managed to sustain and maintain the strategy when writing persuasive essays for science and social studies during the generalization phase. The number of paragraphs written by all students remained at one throughout the duration of the study.

As a whole, students managed to use transition words in their persuasive essays after receiving instruction using the POW + TREE strategy. It was noted that students did not initially use transition words when writing essays to elaborate on their beliefs. Learning this skill can be directly attributed to receiving instruction on the use of the POW + TREE strategy.

Finally, as student's writing improved, so did their ability to remain on task with the given assignment of writing a persuasive essay. Frequently, students were observed using pre-writing strategies to plan and organize their thoughts to develop a persuasive

essay. Furthermore, it was also observed that students looked forward to writing a persuasive essay on a given topic rather than engaging in behaviors to avoid the task.

Figure 5 and Figure 6 are writing samples of Student D's performance during baseline in intervention phases of the study which illustrates this point.



*Figure 5 Student D's. Baseline Writing Sample*

4/5/11

I don't believe it will be a good idea to use portable game systems in school. First of all children will not be able to focus. Next children might play immature things to be inappropriate. Also the electronics may be very loud. However it may also benefit us! (At the end of the day, and we are done with work we may be able to use it to learn and take notes, make reminders, play in free time, and also be able to write things down when upset.) Which do you choose? I believe other students will say: "yes."

Topic Sentence: Yes                    +5  
Reasons: Yes                            # of words: 100  
Counter Reasons: Yes  
Explanations: Yes  
Ending: Yes

Figure 6 Student D's. Intervention Writing Sample

## 5. DISCUSSION

Recent research studies (Salahu-Din, Persky, & Miller, 2008; McMaster, Du, Yeo, Deno, Parker, & Ellis, 2011) have noted that writing continues to be an arduous task for many students where 65% of eighth – graders and 75% of 12<sup>th</sup> grade students were below grade level expectations. Handwriting concerns for students have been prevalent, where teachers need to explicitly teach skills pertaining to writing on less formal methods of instruction to maximize handwriting development (Graham, 1999). A significant body of research exists that demonstrates how students’ writing is improved by directly teaching strategies for planning, drafting, revising, and editing (Graham et al., 2009); however, writing is even more of a challenge for students with disabilities. Students with EBD have experienced even more difficulties with the writing process – primarily due to writing conventions such as generating ideas for a topic, developing a plan to write, establishing a theme with detailed supports, as well as using correct grammar, punctuation and spelling. Although few studies examined the effectiveness of strategy instruction and writing for this population of students, results from their findings demonstrated that students’ writing ability improved after receiving explicit, direct instruction on writing.

Results of the present study demonstrated that SRSD in writing using the POW+TREE was effective for students with EBD who have significant writing deficits.

All students who participated in the study wrote persuasive essays that were longer, contained more elements, were of better quality, and improved in their ability to remain on task from baseline to intervention phases. Moreover, students were able to generalize the strategy and develop persuasive essays in the content areas of social studies and science. This was important for students' because writing took place outside of the intervention classroom setting. In the final analysis of their writing performance across baseline and intervention phases, it can be concluded that their inability to develop a persuasive essay was not a performance deficit, but rather an acquisition deficit – they did not have the background repertoire or skills to complete the task (Menzies et al., 2009). In other words, when teachers use traditional methods of instruction in writing that require students to develop a written product, only students who already know how to write can successfully complete the task, and may not necessarily need the practice. Students who do not know how to develop a written response cannot acquire the knowledge from the task. Therefore, each participant in the present study required direct, strategy instruction on how to write a persuasive essay, and instruction on how to self-monitor the use of the strategy.

As noted previously, this study was similar to previous research studies on the use of POW+TREE, but differed in a number of ways. First, the methodology of the study was more reflective of classroom conditions than many others. Most classroom settings are unable to maintain balanced student/teacher ratios because graduate assistants, or additional school personnel, are not readily available to assist in providing an intervention. Therefore, to ensure the intervention was implemented with fidelity, a

special education administrator was trained to observe and collect data regarding key instructional components, such as time on task and following a script verbatim which may be more similar to actual instructional conditions. Secondly, unlike previous research studies on POW+TREE (Atkins et al., 2005; Mastropieri et al., 2009) where data were not collected as students received instruction on POW+TREE, probe data were collected during the intervention phase of the study prior to the onset of the immediate maintenance phase to address areas of strength and growth (Little, et al., 2010).

Following the intervention, students' completed surveys and were interviewed to explore their perceptions of POW+TREE. All students stated that learning the strategy helped them to develop essays much better after receiving the intervention. When asked about using POW+TREE in the future, four of the five students stated that they would use POW+TREE to develop a persuasive essay. When asked whether or not he liked the strategy that was taught, Student A stated, "Yes, because now I know how to write a paragraph and I learned." For example, during baseline and the first couple of intervention sessions, he played around with peers, was observed to be off-task and rushed through writing assignments. However, as the study progressed, he managed to remain on task with writing assignments more frequently and used POW TREE to organize and write persuasive essays. In contrast, Student D stated that he would not use POW+TREE to write a persuasive essay in the future because, "I didn't find it useful so I won't use the strategy." Nevertheless, his ability to write a persuasive essay using POW+TREE improved across baseline and generalization phases, which are best

captured in the following examples of his writing during baseline and intervention phases.

### **Research Questions**

The purpose of this study was to determine the effects of SRSD on written expression of students with EBD. In regards to the first research question, “Will students use the POW + TREE strategy in written expression to improve their writing through self-regulated strategy development from baseline to post intervention phases?” students’ demonstrated improvement in their ability to develop a persuasive essay through the use of the POW+TREE writing strategy as measured by writing performance based upon specific variables. The results of this study demonstrated that students with EBD generally respond to specific strategies in writing, and were able to develop and write a persuasive essay more efficiently after receiving direct instruction on a strategy.

In response to the second research question, “Will strategy instruction result in increased lengths of sentences, use of transition words and number of paragraphs as evidenced through persuasive essays?” this study extended previous research on the effectiveness of SRSD on writing persuasive essays of elementary students with EBD (Atkins et al., 2005; Little et al., 2010) through its examination of developing persuasive essays in the content areas of social studies and science. Overall, students used more words to develop persuasive essays through use of the POW+TREE writing strategy from baseline to generalization phases. Student B demonstrated the greatest improvement in the number of words written across baseline to generalization phases (28 to 60) and Student C demonstrated the greatest improvement across intervention and immediate

maintenance phases (45 to 59). However, Student A (43 to 27), Student B (59 to 45) and Student D (54 to 35) wrote fewer words across immediate maintenance and generalization phases. Although many reasons may explain why their performance fell, their performance did not fall below the levels of baseline performance. Throughout the course of the study, all students wrote longer sentences as they developed persuasive essays from baseline and intervention phases of the study. It was observed that as students became more involved in the writing process and learned POW+TREE, their ability to brainstorm ideas and organize their notes was apparent.

Secondly, four of the five students demonstrated improvement in the use of transition words across baseline and generalization phases. During baseline phases, no students used transition words in their persuasive essays; however, once strategy instruction began in this area (where the mnemonic million – dollar words was used to describe transition words), students began using words such as first, second, third, etc. to express their thoughts. Improvement on the number of transition words written by students was substantial from baseline to intervention phases. Student B demonstrated the greatest improvement from baseline to intervention (0 to 3.5), followed by Student C (0 to 3) and Student E (0 to 3). Student E was the only student who wrote more transition words across intervention and immediate maintenance phases (3 to 3.8). Student D demonstrated the least improvement in this area. He used transition words at the onset of receiving the intervention, but returned to baseline from Sessions 17 thru Session 22. This finding ran parallel to his behavior patterns and peer interactions in school, as his

perceptions of situations were frequently skewed and resulted in inconsistent responses to difficult or challenging situations.

Overall, students improved in their abilities to develop a persuasive essay from baseline to intervention phases which was demonstrated in the evaluation of mean holistic scores. Student B demonstrated the greatest improvement across baseline and generalization phases (3.4 to 9), and Student's A and E also demonstrated improvement as well. Although the effects were small for Student's C and D (3.4 to 7 and 3 to 7 respectively), there was an improvement from baseline to intervention. As discussed previously, Student C's performance declined across intervention and immediate maintenance phases (8.8 to 8), as well as Student D's performance (8 to 7). These findings were particularly interesting – given the fact that their behavior was unpredictable in regards to their willingness to write and remain on – task. However once engaged, Student C consistently responded to requests made by the lead researcher and completed writing tasks for the given activity. Students A and D's mean holistic scores improved moderately from baseline to intervention, but student E's performance improved at a slower rate. This can be attributed to his inability to consistently remain on task—not only throughout the study but in completing routine classroom assignments as well. In response to this behavior of concern, several immediate re-enforcers were put into place for this student when he displayed appropriate academic behaviors, which allowed him to remain on task for his assignments. Although improvements were demonstrated over baseline conditions, their performance after receiving instruction on the intervention would not be considered proficient at the 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade levels. For example,

students are required to develop multi-paragraph essays in response to a selected writing prompt; however, students' in this study did not write more than one paragraph.

The third research question, "Will teaching of SRSD increase on-task behavior from baseline to post intervention phases?" focused on improving on-task behaviors of students across baseline and generalization phases. Throughout the study, all students improved in their ability to remain on-task when writing a persuasive essay across baseline and intervention phases. They were observed using pre-writing strategies to organize their essays, and used transition words to expand upon reasons of their beliefs on a given topic. Student C demonstrated the greatest improvement (2.3 to 8), and Student A demonstrated similar improvement (2.8 to 8). Although Student's B, D, and E demonstrated small improvements, they were on-task more frequently during the generalization phase. Student's E and A improved the most between baseline and intervention phases (1 to 5.8 and 2.4 to 6.4 respectively), and Student D demonstrated the greatest improvement between intervention and immediate maintenance phases.

More salient, there was a noticeable improvement in their behavior after learning the strategy. At the onset of the study, many of the students engaged in disruptive and inappropriate behavior due to the inability to complete the writing task. Once they learned the strategy on writing a persuasive essay, their behavior improved as well. The improvement in behavior correlates with the initiatives of the schoolwide positive behavior support system which encouraged all students to put forth their best efforts to complete academic tasks and to adhere to classroom and school rules for conduct.

In regards to the fourth research question, “Can students re-state the POW + TREE strategy as evidenced through research questions?” there was a correlation between on-task behavior and the number of times students’ engaged in disruptive behavior. During baseline, students’ were frequently observed tearing up paper, refusing to write, and talking aloud without permission. As they received instruction on the strategy, their level of engagement with writing lessons improved and the number of behavioral incidents declined accordingly.

### **Perception of POW + TREE and Social Impact**

For students with EBD, the inability or unwillingness to write may result in devastating outcomes which not only may impact school performance, but may significantly impact future employment opportunities. Thus, a focus on improving writing outcomes is critically important for students who have writing deficiencies or a writing disability (McMaster et al., 2011).

The fifth research question, “What are students’ perceptions on learning the PO + TREE strategy to develop persuasive essays?” explored student perceptions on learning the strategy. Although students overall showed improvement in all areas measured, they also reported that learning the strategy enhanced their abilities to develop persuasive essays. As students’ completed writing assignments, they were pleased with their final writing product, and responded positively to verbal praise and immediate feedback. This was quite evident when students’ colored their rocket graphs, which noted the number of reasons and/or transition words used in their persuasive essays. It can be hypothesized that learning the new skill to complete an academic task empowered students with a

feeling of belonging in the classroom – as their written products were somewhat commensurate to, or in rare cases, better than their age appropriate peers. Learning this skill also minimized off-task behaviors of students’ who may have engaged in such actions as means of avoidance due to the inability to complete a writing task, or the need to control the classroom environment as opposed to being embarrassed about the inability to complete a given writing assignment. It can also be hypothesized that students may use the strategy to develop persuasive essays in a variety of classroom settings, such as language arts at the next grade level, history courses, math courses, and in courses such as family and consumer sciences.

More salient was the improvement in their ability to use pre-writing strategies to develop a well- planned persuasive essay, and improvement in the ability to remain engaged in writing activities as measured by time-on-task. Furthermore, it can be noted that their engagement in writing lessons resulted in fewer disciplinary concerns in the classroom.

### **Limitations of the Study**

In light of the effectiveness of the intervention, several limitations were noted as well. First, a threat to external validity exists due to the selection of students. Each participant received special education services as a student with EBD which limited the range of examples available for analysis (Horner et al., 2005).

In regards to social validity, the interviews that were conducted were not an independent assessment of social validity due to the focus on instruction. Although perspectives of the intervention were accounted for from the students who participated in

the study, it was not accounted for from the teacher's perspective, or the parent's perspective for two reasons. First, the lead researcher in this study was very knowledgeable of SRSD and the POW+TREE writing intervention and determined that specific and direct instruction was necessary. Furthermore, the availability of the classroom teacher to provide consistent and timely instruction on the intervention was limited and would have skewed results. Secondly, due to the nature of this study, the methodology focused on instruction that occurs in the classroom, where teachers are encouraged to implement a plethora of research-based interventions and strategies to instruct students. If students' received instruction on another writing strategy independent of POW+TREE, then performance outcomes may have been significantly impacted in a negative manner.

Another limitation is that only boys participated in the study which does not account for the writing difficulties of female students with EBD. Finally, school was cancelled on numerous occasions during the study as a result of inclement weather. As a result, students were not available and missed opportunities to receive instruction on a consistent basis and the amount of data was reduced. Despite missing instruction due to weather, meeting instructional pacing guide requirements, and other challenges, students improved in their ability to develop persuasive essays. Evaluations over more consistent periods of time are needed to more accurately determine maintenance and generalization of the intervention effects.

## **Implications for Future Research**

The findings from this study have important implications for instruction and research, as it adds to the expanding body of research on the effectiveness of SRSD and writing. Although the focus of this study centered on students with EBD, future studies could focus on the effects of SRSD on written expression of students who are English Learners who receive special education services as students with EBD and/or SLD. Moreover, the development and implementation of an intermediate behavior management system while students with EBD receive SRSD through POW + TREE may improve the ability for students to remain on task with assignments at a greater rate.

## **Conclusion of Study**

This study took place over a five month period over 25 sessions which was intense and focused on writing deficits of students with EBD. Additionally, it extends research in writing persuasive essays by demonstrating that students with EBD can be taught SRSD to develop persuasive essays in the content areas of social studies and science.

This group of students responded to a targeted, research – based intervention and that was implemented with fidelity. The educational benefits of such practices are priceless for students. Although students demonstrated improvements over baseline in relation to the number of words written and time-on-task with assignments, results were not as strong pertaining to the number of transition words written and mean holistic scores as students generalized the strategy in the content areas of social studies and

science. Equally as important was their level of engagement in writing activities which minimized the number of behavioral concerns of students.

Furthermore, their perceptions of engaging in the writing process changed from an unwillingness to write to having more confidence in their ability to develop a persuasive essay and a willingness to complete a writing assignment. The results of this study demonstrate the effectiveness of SRSD instruction on improving the writing outcomes of elementary students with EBD.

## **APPENDICES**

**APPENDIX A. CODING INSTRUMENT FOR LITERATURE REVIEW  
ARTICLES**

<b>Variable</b>	<b>ES#_____</b>	<b>ES#_____</b>	<b>ES#_____</b>
Study ID			
AUTHOR			
ES_NUM (effect size number)			
N_SAMPLE (# in sample)			
SPED_CAT (sp ed category) 0 none; 1 LD; 4 EH; 8 Mixed 13 Nondisabled 14 Other			
GRADE			
INTERVENTION 30 Learning Strategies 42 Self-monitoring 43 Self-regulated 90 Writing strategy 94 Social Skills			

<p><b>DEPENDENT VARIABLE</b></p> <p>1 Criterion referenced</p> <p>2 Norm referenced</p>			
<p><b>TYPE OF DEPENDENT VARIABLE</b></p> <p>Content area</p> <p>1 Social Skills</p> <p>2 Attitude</p> <p>3 On – task behavior</p> <p>4 Strategy use</p>			
<p><b>QUALITY OF DESIGN</b></p> <p>1 High</p> <p>2 Medium</p> <p>3 Low</p>			

## **APPENDIX B SAMPLE ESSAY PROMPTS (BASELINE AND INTERVENTION)**

1. Students must go to school for one extra hour to increase the time for learning math and reading. Do you agree or disagree with making the school day longer?
2. Your teacher has decided to give three tests on one day. Persuade your teacher to spread out the tests over several days.
3. A doctor on Oprah said that all televisions should be off and all lights turned out by 8:00 p.m. so that students get a full night's rest. Your parents are considering doing what the doctor suggests. Write an essay for your parents and explain your position.
4. The school board is debating on whether or not to mandate school uniforms, write a persuasive essay either for or against the idea.
5. You want to get a Playstation WII this weekend. Write a letter home to mom/dad trying to persuade them to grant permission for something you want.
6. The principal argues that the random searches will not only guard against illegal weapons at school but will also help students feel safer. Write a letter to convince others that they should agree with you.
7. Some of the parents at your school have started a campaign to limit the homework that teachers can assign to students. Teachers at your school have argued that the homework is necessary. Write a letter to your teacher stating your position and supporting it with convincing reasons.
8. Students are throwing trash on the ground, leaving empty soda cans and bottles outside on benches, and dropping napkins and other trash on the cafeteria floor rather than carrying them to the trash can. Write a letter to your principal stating your position and supporting it with convincing reasons.

9. The Washington Redskins provided two computers in every classroom. Teachers at your school are planning instead to place all the computers together, creating two computer-based classrooms so that all students in a class can work at the computers together, rather than only one or two students at a time. Write a letter to your teachers stating your point of view and supporting it with convincing reasons.
10. Following a unit on underwater creatures, write a letter to the PTA convincing the PTA members to make a donation to the Save A Whale Foundation.
11. The snow has melted from the playground. Much litter is now visible. Write a persuasive essay to convince your schoolmates to stop littering.
12. Soccer season begins next week. You have observed a new student on the playground who seems to be a good athlete. Write a persuasive note convincing him/her to join your team.
13. Some fifth graders think they are old enough to decide how late they can stay up at night. Explain when you think kids are old enough to set their own bedtimes. Give reasons that will convince your readers to agree with you.
14. As a rule, students are asked not to wear skinny jeans to school. Write an essay to convince others to change that rule.
15. The teacher of Pioneer has applied for a grant to provide Pioneer with a state-of-the-art computer system for the library. The grant will be given to this school IF the students can convince the grant committee that it is needed. Write a letter to the President of the grant committee, Dr. David Johns, for or against this plan. Be sure to take note of your opposition's point of view. Sign your arguing name, "B.D. Best."
16. We know that many students begin smoking, even as young as students in our class. Write a letter to your classmates convincing them not to begin smoking.
17. The principal of your school has been asked to discuss with a parent group the effect watching TV has on students' grades. Think about the effect watching TV has on your grades and your friends' grades. Now write to convince your principal to accept your point of view on the effect watching TV has on grades.

18. The President's Council on Physical Fitness has reported that 65 percent of all elementary students are seriously out of shape. Mr. Teacher has recommended that elementary schools adopt a policy requiring physical education classes daily for all students. Write a letter to your principal expressing your agreement or disagreement with this proposed policy.
19. Think about where people live. People live in small towns, large towns or even big cities. Some people live on farms or in houses in the country. Think about where it is best to live and why. Choose the one place where you would like to live and give reasons why you think it is the best.
20. Your newspaper is offering a prize for the Best Relative of the Year. Think about which one of your relatives should win this prize. This relative could be a parent, grandparent, sister, brother, aunt, cousin, or anyone in your family. Think about the reasons your relative is the best. Write an essay to persuade the judges to give your relative the prize.
21. There has recently been much discussion about violence in the music, film, and television that children enjoy. They believe the violence that youths hear and see through TV, film, and music leads them to behave in violent ways. Write an editorial for your local newspaper convincing readers of your point of view.
22. As a resident of Arlington, you are quite concerned over plans to construct a trash incinerator in your community/ Write a persuasive letter to your town council stating and supporting your opinion.
23. You have just found what you think will be a wonderful pet (dog, cat, bird, dragon, tiger, rat). Now you must convince your parents to allow you to keep it. Give several reasons and support your ideas with details and examples.
24. Your school has decided to end summer vacations and go to year-round schooling. Write a letter to persuade the school board to make the change or to keep the policy.
25. What is the most important invention in this science? As someone who has studied this subject, persuade your teachers to teach about this topic.
26. Imagine that you are a political candidate for the Presidency, and you are asked at a debate to agree or disagree with one of the following statements: "All Americans are free," or, "All people are equal." Write an essay to persuade the American public to agree with you.

27. You are faced with the decision of whether or not to work while in high school. Write a persuasive essay to your parents either for or against teen employment.
28. NASA is looking for a teacher to travel aboard a space station. Write an essay to convince the principal to select the teacher you chose.
29. A company has just announced that they plan to build a chemical manufacturing plant next to your home. Local officials have asked for input from nearby residents. Write a persuasive essay to your newspaper that convinces your leaders to welcome or reject the company's plans.
30. The station that carries your favorite TV show has just decided to cancel it and replace it with reruns of a show for very young children, like Barney and The Wiggles. Write a persuasive essay that tells the station to continue showing your program.
31. Inventions are made to help our society, but not all inventions have good effects. Write a persuasive essay that convinces your community some inventions are not good.
32. The city council wants to pass a law banning the use of skateboards in the park. Write an essay to the local paper explaining why this action should or should not be taken.
33. In your science and math classes, you have studied how to use measurements. Your science project team wants to create something, but does not want to use a measurement system. Write a persuasive essay that tells them to use the system.
34. Suppose that you learned that your neighborhood might be destroyed so that the property could be used for a new freeway. Write a persuasive essay to your local newspaper, explaining your point of view as to why your neighborhood should not be destroyed.

35. Because of budget cuts, your school will have to drop art and gym classes. Write a letter to your principal persuading her not to cancel the classes.
36. Some states are considering changing the legal age for getting a driving license from sixteen to eighteen. Your teachers have asked you and the other students in your class to write essays in which you explain your thoughts about this change in the legal driving age. Write a persuasive essay that explains how you feel.
37. Imagine that your school had lots of after school activities. Now, however, tax cuts have made it necessary to cut all but one of these activities. Write a persuasive essay to be given to the Superintendent in which you tell which program you think should be saved.
38. One student will have the chance to work at a local television studio this summer. This student will be expected to answer phones, and do some library research. Write a persuasive essay to let the station managers know that you are the right person for this job.
39. Some people have said that the schools in the United States are not as good as the schools in other countries because students do not spend enough time in school. Your principal is asking students to write a persuasive essay giving their opinion and reasons that there should or should not be school on Saturday mornings.
40. Write a letter to your principal persuading him/her to buy Smoothie machines for your school.
41. Write a persuasive essay to convince your parents to let you have a special pet.
42. Write a persuasive essay to convince your parents to let you have a friend spend the weekend.
43. Should students give some of their toys to children who do not have toys?
44. Should students your age have to do chores at home?
45. Write a persuasive essay to allow students to eat snacks in the classroom.
46. Write a persuasive essay to allow students to chew gum at school.
47. Write a persuasive essay to your principal to cancel summer school for students.
48. Write a persuasive essay stating whether children under the age of 16 should be required to wear helmets while biking, scooting, skateboarding, rollerblading, and skiing.

49. Write a persuasive essay stating whether the school day should be lengthened by two hours so that all students can get help with homework.
50. The mayor of your city is trying to decide if a 7:00p.m. curfew for children under the age of 16 is needed. What do you think? Write a persuasive essay to the mayor [Mr. Thomas Menino] to convince him to enact or not to enact, the curfew.
51. Your family is moving and wants your opinion on where to buy a new home. Should it be in a city or on a country farm? Write a letter to your family persuading them to choose a home in the place you want to live.
52. Write a persuasive essay to your parents to take you to Disneyland for spring break instead of spending the week at Mr. Pannell's work farm.
53. Many students really do not like the contents of their school lunch. Parents pay for it because they feel their child will get healthy food and it is convenient for them to provide it. Yet, many students throw much of it out because they do not like the choices of food. Write a persuasive essay to your school suggesting specific menu changes in foods on the school menu.
54. Summer, Winter, Spring, and Fall. Every season has its own special qualities that make it the best. However, what is best for one person is not always best for another. Write a persuasive essay telling someone what the best season is.

Note: Questions adapted from *Powerful Writing Strategies for All Students*, by K. Harris, S. Graham, L. Mason, & B. Friedlander (2008).

## **APPENDIX C: Sample Essay Prompts in Science and Social Studies**

### **(Maintenance)**

Should humans continue to explore the oceans?

Should resources found in the ocean be used by humans?

Do you think that people should play a larger role in making laws?

Should students be allowed to vote?

Should schools be required to serve specific foods for meals?

Should there be laws to regulate the use of power and electricity in homes?

Do you think the use of oil and gasoline be limited?

Should a President be allowed to serve more than two terms?

## **APPENDIX D. STUDENT INTERVIEW PROTOCOL**

What is the writing strategy that you learned?

Did you like the writing strategy that was taught?

What did you like about the use of visual charts when writing an essay?

Did you like/dislike how the teacher asked what you knew about writing a persuasive essay before the lesson was taught?

Will you use the strategy to write a persuasive essay in the future?

**APPENDIX E. BEHAVIORAL OBSERVATION SHEET**

SRSD through POW + TREE Writing Strategy

Event Recording System

Student	2 minutes	4 minutes	6 minutes	8 minutes	10 minutes

X – Student was observed off-task

O – Student was observed on-task

## APPENDIX F. SOCIAL VALIDITY QUESTIONNAIRE

### Using the POW + TREE Writing Strategy

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

This questionnaire will help me learn more about your writing abilities using the POW + TREE strategy. Think before you write and be honest in your answers. You will not receive a grade on this and there are no correct answers.

After each statement, circle either ALMOST NEVER, SOMETIMES, OR ALMOST ALWAYS depending upon how often you do that action.

.....

When given a writing assignment, I use the POW strategy to give me power in writing my opinion.

ALMOST NEVER

SOMETIMES

ALMOST ALWAYS

=====

I use the TREE strategy to develop a topic sentence, provide three reasons to support my topic and a counter reason, examine my writing, and edit the final copy.

ALMOST NEVER

SOMETIMES

ALMOST ALWAYS

=====

I use the POW + TREE strategy when writing opinion essays in science and social studies.

ALMOST NEVER

SOMETIMES

ALMOST ALWAYS

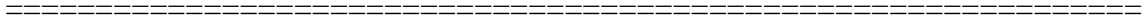
=====

In the future, I will use the POW + TREE writing strategy to develop opinion essays.

ALMOST NEVER

SOMETIMES

ALMOST ALWAYS



## APPENDIX G. SCRIPTED LESSON PLANS

### POW + TREE Writing Strategy Phase 1

**Student Objectives:** The students will orally state the qualities that make a good opinion essay. The students will be able to find essay parts in an essay read in class.

#### **Materials**

One copy for each student:

- POW + TREE Mnemonic Chart for students
- POW + TREE Graphic Organizer for students
- Essay samples for students
- Paper, pencils, and scratch paper

**Set the context for student learning:** Tell the students that they will be learning a new writing trick that will help them write a paper that tells the reader their opinions about specific subjects. This is called an *opinion* essay. Describe and discuss both words to be sure that the students understand the definitions of the words *opinion* and *essay*.

#### **Step 1: Develop Background Knowledge (20 minutes)**

- Review POW. Display the POW + TREE mnemonic chart so that only POW is revealed. Ask the students to tell you what the letters in POW represent and remind them that POW gives them *power* when they write.
- Describe and discuss what makes a good opinion essay. Some students may not be familiar with this. Be sure to tell the students that
  1. A good opinion essay tells a reader what the writer believes, gives a reader at least three reason why, provides an explanation for each reason, and has an ending sentence. (You will be practicing this with them, so be sure they have the idea here.)

2. Good opinion essays make sense and have several parts. Tell the students that they will learn a trick for remembering the parts of a good opinion essay

### Step 2: Introduce TREE (10 minutes)

- Uncover the rest of the mnemonic chart to reveal TREE. **Say, “Let’s look at the parts that make up a good opinion essay.”** Go over each part of TREE describing how it relates to a living tree.
  - a. T: The *topic* sentence is like the trunk. It is strong, and every part of the tree is connected to it.
  - b. R: The *reasons* are like the roots. They support the trunk. The more roots (or reasons) a tree has, the stronger the trunk will be.
  - c. E: The next part of TREE is *explained*. Explain means to tell more about your reason. The more explanations, the stronger the reasons and the stronger the trunk.
  - d. E: The *ending* is like the earth. It wraps around the tree, as in wrap it up.

### Step 3: Find Parts in an Essay (20 minutes)

- Tell the students that they will read an opinion essay to find out if the writer used all of the parts (e.g., What I believe, at least three reasons why, an explanation for each reason, an ending sentence). Display the TREE mnemonic chart where the students can see it.
- Lay out a TREE graphic organizer. Point out the TREE mnemonic at the top and review what the letters represent.
- Give each student a copy of the first opinion essay: have the students read along silently while you read the essay aloud. Tell them to raise their hand when they hear what the writer believes, each reason why, an explanation, and an ending sentence. Each time you find a reason why, discuss with the students which words the writer uses to show that a reason is being given. Also, note how the writer gives the reason and then tells more about the reason (expands on the reason). You can move the chart around out of order as you find the parts. As the students

- identify each part, you should write each in the appropriate space on the graphic organizer. Do not use full sentences. Use note form.

**Step 4: Practice TREE (15 minutes)**

- Practice the TREE mnemonic and ask the students what each letter means. Turn over the chart and the students' papers. Ask each student to tell you the opinion essay parts mnemonic, and what each letter represents. Then have the students write the mnemonic on scratch paper. If the students have trouble, turn the chart back over and allow them to look. Keep doing this until all students can recall the mnemonic and write it on paper from memory.

**Step 5: Find Pats in a Second Essay (15 minutes)**

- Read the second opinion essay as before. Display the chart. Again, remind the students to raise their hand when they hear a part. Be sure that each part is identified. Do not write them out this time. Point to, or ask the students to point to, the places where the parts go on the chart.

**Wrap-up (5 minutes)**

- Announce a test for the next session. The students will not be graded. Tell them that they will write out POW + TREE and explain what they mean from memory. Have the students keep their scratch paper with POW and the TREE mnemonic on it with them for practice.

POW + TREE Writing Strategy  
Phase 2

**Student Objectives:** The students will write the POW + TREE mnemonic and state what each letter represents. The students will identify parts in an essay read in class, as well as in one of their own previously written essays.

**Materials**

One copy for each student:

- POW + TREE Mnemonic Chart for students
- POW + TREE Graphic Organizer for students
- Essay Rocket Graph for students
- Essay samples for students
- Students' previously written essays
- Paper, pencils, and scratch paper

**Set the context for student learning:** Test to see if the students remember the POW + TREE mnemonic (period) Also, review the definition of the term *opinion* essay (period) Give the students some scratch paper, have them write down POW, and ask them what the letters represent (period) If the students have trouble remembering POW, continue to practice it (period) Have the students write out TREE on scratch paper and ask them what each part of TREE represents (period) Alternate review between the students so that each student has an opportunity to answer several times (period)

(NOTE: It is essential that every student memorize the mnemonic. If some students are having trouble with this, spend a few minutes practicing it. Tell the students that you will test them on it each day to make sure they understand it. Remind them that they can practice memorizing it).

**Step 1 (Discuss the Strategy): Find Essay Parts (20 minutes)**

- Go through two more essay samples for younger students and have the students verbally identify the essay parts (e.g., what the writer believes, at least three reasons why, an ending sentence). For each of these essays, ask the students if they can think of more reasons and explanations.

### **Step 2: Look at Current Writing Behavior (20 minutes)**

- Hand out the students' previously written essays.
- Tell the students to read their essays and see which parts they have. Work out ahead of time which parts they had and which ones were missing; for opinion essays, the total can be eight or more (e.g., "What I believe," at least three reasons why, at least one explanation for each reason, an ending).
- Briefly note with each student which parts they have and which are missing. As a group, briefly note common missing parts.
- Note also that even though a part is present, that part can be made even better next time. This makes the essay more fun to write and more fun to read. Discuss examples of how the students could do each of the following using either their essays or the essays you read in the previous step:
  - Give more than three reasons
  - Use good word choices, or *million dollar words*
  - Use an interesting first sentence
  - Use an interesting ending sentence

### **Step 3: Graph Current Level of Performance and Set Goals (15 minutes)**

- Give each student an Essay Rockets graph. Have the students fill in the graph for the number of parts they had in their pretest essays. Be positive by reminding them that they are just now learning the trick of writing good essays. Explain that they fill in one space for each step in TREE – one for topic, one for reason, one for explanation, and one for wrap – up. Explain that if they have more than three reasons or explanations, they can *bust the rocket*. If they *bust the rocket*, you will write the total number of parts (eight or more) above the rocket.
- Explain the goal, which is to write better opinion essays. Remind the students that good opinion essays tell the reader what the writer believes, give at least three reasons why, give an explanation for each reason, and have an ending sentence. Also, good opinion essays are not only fun for them to write, they are fun for others to read and they make sense.
- The class goal is to have all of the parts and *better* parts the next time they write an opinion essay.

**Wrap-up (5 minutes)**

- Remind the students that there will be a POW + TREE test again at the next session.

- POW + TREE Writing Strategy

#### Phase 3

**Student Objectives:** The students will orally state the mnemonic for POW + TREE and state what each letter stands for. The students will attend to the teachers modeling lesson. The students will locate essay parts in a previously written essay if needed. The students will write self-statements for the POW + TREE writing strategy.

#### **Materials**

One copy for each student:

- POW + TREE Mnemonic Chart for students
- POW + TREE Graphic Organizer for students
- Essay Rockets Graph for students
- My Self – Statements
- Essay Prompts
- Paper, pencils, and scratch paper

**Set the context for student learning:** Test to see if the students remember POW + TREE. Do this aloud to save time. It is essential that each student memorizes these. If the students have trouble with this, spend a few minutes practicing it. Tell the students that you will test them on it each day to make sure they understand it.

### **DEVELOP THE STRATEGY AND SELF - REGULATION**

#### **Step 1: Revisit Locating Essay Parts (30 minutes)**

- If any student is still having trouble finding the essay parts as you read aloud, do another essay or two aloud at this time.

#### **Step 2: Model the Strategy**

##### ***Pick My Idea***

- Lay out a copy of the TREE graphic organizer. Say, “Remember that the first letter in POW is P for Pick my idea. We will practice how to write a

- *good opinion essay.* Review what that means if necessary. Say, “To do this, we must be creative and think free.”
  - Read aloud the practice prompt: *toys*. Explain to the students the kinds of things you say to yourself when you want to think of good essay ideas or parts. Be sure to say, “*I have to let my mind be free, “Take my time. A good idea will come to me,” and “Think of new, fun ideas.”*
  - Say, “*The things you say to yourself help you to work.*” Note that it’s not always necessary to think aloud and that they can think these things in their heads.

### **Organize My Notes**

- Say, “*The second letter in POW is O, which stands for Organize my notes.*” Tell students that today you are going to write an opinion essay with their help. Say, *I will use POW + TREE to help me. I will use this page to make and organize my notes; you will do this, too, the next time you write an essay.* Briefly review – point at – the parts of a good essay on the graphic. Review “*What should my goal be? To write better opinion essays.*” Remind them that good opinion essays tell the reader what you believe, give at least three reasons why you believe it, give an explanation for each reason, and have an ending sentence. Also, good opinion essays are fun for me to write and for others to read, and they make sense.
  - Model the entire process for Organize my notes. Use problem definition, planning, million – dollar words, self – evaluation, and self – reinforcement self – statements as you go. Follow the steps and statements, filling in ad lib statements where indicated. Ask the students to help you with ideas as well as the writing, but be sure you remain in charge of the process.
  - Say, “*What do I have to do? I have to write a good opinion essay. My essay needs to make sense and have all the parts. Remember P in POW – Pick my idea. Let my mind be free. Take my time and think about what I believe and some good reasons why it will come to me.*”

- Say, “Now I can do O in POW which stands for Organize my notes. I can write down ideas for each part. I can write ideas down in different parts of this page as I think them.” Be sure to model moving out of order during your planning. Say, “First, what do I believe? What do I want to tell the reader I believe?” Talk out and fill in notes for the topic sentence. Say, “Good! I like this idea! Now I need to come up with at least three reasons and give an explanation for each reason. Let my mind be free. Think of good ideas.” Talk out and briefly write notes for at least three reasons in note form. Using coping statements at least twice. After generating notes for all essay parts say, “Now I can leek back at my notes and see if I can add more notes for my essay parts.” Model this action using coping statements. Say, “I can also look for ideas for good choices or million – dollar words.”

### **Write and Say More**

- Say, “Now I can do W in POW, which stands for Write and say more. I can write my opinion essay and think of more good ideas or million – dollar words as I write.” Talk yourself through writing the essay; the students can help. Use a clean piece of paper and print. Start by saying, “How shall I start? I need to tell the reader what I believe, so I’ll need a topic sentence.” Pause and think, and then write out the sentence. Be sure to add one or two more ideas and million – dollar words on your plan as you write. Don’t hurry, but don’t slow down unnaturally. Also, ask yourself at least twice, “Am I using good parts? Am I using all of my parts so far?” Use a coping statement. Ask yourself, “Does my essay make sense? Will the reader believe my reasons?” Model writing the ending sentence. When you have completed the essay, say, “Good work! I’m done. It’ll be fun to share my essay with others.”

### **Step 3: Self – Statements (20 minutes)**

- Ask the students if they can remember the following: 1. things you said to yourself to get started, 2. things you said while you worked, and 3. things you said to yourself when you finished.

- Ask the students to write some things they could say to themselves on the self – statements sheet:
  - What to say to get started; this must be along the same lines as “What do I have to do? I have to write an opinion essay using TREE.” Be sure the students use their own words.
  - Things to say while working; self – evaluation, coping, self – reinforcement, and any others in the students’ own words
  - Things to say when finished in the students’ own words
  - Note that the students don’t always have to think these things aloud; once they learn them, they can think them in their heads or whisper them to themselves.

**Step 4: Graph the Essay (5 minutes)**

- Graph this essay on the Essay Rockets graph. *Ask, “Does this essay have at least eight parts?”* Fill in the graph.

**Wrap-up (5 minutes)**

- Remind the students that there will be a POW + TREE test again at the next session.

## POW + TREE Writing Strategy

### Phase 4

**Student Objectives:** The students will orally state the mnemonic for POW + TREE and state what each letter represents. The students will collaboratively write an opinion essay with the teacher and orally identify parts of the essay.

### Materials

One copy for each student:

- POW + TREE Mnemonic Chart for students
- POW + TREE Graphic Organizer for students
- Essay Rockets Graph for students
- My Self-Statements
- Essay Prompts
- Paper, pencils, and scratch paper

**Set the context for student learning:** Test to see if the students remember POW + TREE. Do this aloud to save time. It is essential that each student memorizes these. If the students have trouble with this, spend a few minutes practicing it. Tell the students that you will test them on it each day to make sure they understand it.

## DEVELOP THE STRATEGY AND SELF - REGULATION

### Step 1: Collaborative Writing – Memorize and Support the Strategy

- Give each student a blank graphic organizer and have everyone get out their self-statements sheets. Display practice prompts. Let the students lead as much as possible, but prompt and help as much as needed. Go through each of the processes. The students can share and use the same ideas, but each student should write an opinion essay using his or her own notes.
- Say, *“Remember that the first letter in POW is P, which stands for Pick my idea.”* Refer the students to their self-statements for creativity or thinking free. Help each student decide what he or she believes and start to think of good reasons why.
- Say, *“The second letter in POW is O, which stands for Organize my notes. I will use TREE to help me. I will use this graphic organizer to make and organize my notes.”* Review the goal, which is to write better opinion essays. Say, *“Good opinion essays tell the reader what you believe, give at least three good reasons why, give an explanation for each reason, and have an ending sentence. Also, good opinion essays are fun to write and for others to read, and they make sense.”* After the students have

generated notes for all essay parts, *say, "I have to look back at my notes and see if I can add more notes for my essay parts."* Remind them to also look for more ideas for good choices or million-dollar words.

- Say, *"The last letter in POW is W, which stands for Write and say more."* Encourage and remind the students to start by saying, *"What do I have to do here? I have to write a good essay. A good essay has all the parts and makes sense. I can write my essay and think of more good ideas or million-dollar words as I write."* Help the students as much as necessary, but try to let them do as much as they can alone. Encourage them to use other self-statements of their choice while they write. If the students do not finish writing during this instruction, they can continue at the next lesson.

### **Step 2: Graph the Essay**

- Have the students graph their essays. Ask the students to determine if their essays have at least eight parts. Let them fill in the graph. Reinforce them for reaching eight or more.

### **Wrap-up**

- Remind the students that there will be a POW + TREE test again at the next session. In the next lesson, the students will be weaned of the TREE graphic organizer. If you feel the students are not ready to move on to writing with scratch paper for notes, rather than the graphic organizer page, repeat Lesson 4 with other practice prompts. Repeat Lesson 4 as often as necessary.

POW + TREE Writing Strategy  
Phase 5

**Student Objectives:** The students will develop an organizer for an opinion essay, which they will write with at least eight essay parts.

**Materials**

One copy for each student:

- POW + TREE Mnemonic Chart for students
- POW + TREE Graphic Organizer for students
- My Self-Statements
- Essay Prompts
- Paper, pencils, and scratch paper

**Set the context for student learning:** Test to see if the students remember POW + TREE. Do this aloud to save time. It is essential that each student memorizes these. If the students have trouble with this, spend a few minutes practicing it. Tell the students that you will test them on it each day to make sure they understand it.

**DEVELOP THE STRATEGY AND SELF - REGULATION**

**Step 1: Wean Off Graphic Organizer**

- Explain to students that they won't usually have a TREE mnemonic chart with them when they have to write opinion essays, so they can make their own notes on blank paper. Discuss and model how to write down the POW + TREE mnemonic at the top of the page, leaving space on the paper to insert notes for each part.

**Step 2: Collaborative Writing – Independent Practice**

- Ask the students to get out their self-statements sheet. Display two practice essay prompts. Each student can select one to write about. Let the students lead as much as possible, but prompt and help as much as needed. The students can make notes on the paper on which they have written the mnemonic. Go through each of the following processes. The students can share ideas, but each student should write his or her own essay using his or her own notes.
- Say, "Remember that the first letter in POW is P., which stands for "Pick my idea" Refer the students to their self-statements for creativity, or thinking free. Help each student decide what he or she believes and start to think of good reasons why.

- Say, *“The second letter in POW is O, which stands for Organize my notes. I will use my TREE mnemonic to help me. I will use this graphic organizer to make my notes and organize my notes.”* Remember the goal, which is to write better opinion essays. Say, *“Good opinion essays tell the reader what you believe, give at least three good reasons why, give an explanation for each reason, and have an ending sentence. Also, good opinion essays are fun to write and for others to read, and they make sense.”* After the students have generated notes for all essay parts say, *“I need to look back at the notes and see if I can add more notes for my essay parts.”* Remind them to also look for more ideas for good choices or million-dollar words.
- The last letter in POW is W, which stands for Write and say more. Encourage and remind them to start by saying, *“What do I have to do here? I have to write a good essay. A good essay has all the parts and makes sense. I can write my essay and think of more good ideas or million-dollar words as I write.”* Help the students as much as necessary, but try to let them do as much as they can alone. If parts can be improved or better choices can be used, you can make suggestions. Encourage them to use other self-statements of their choice while they write.
- Have the students graph their essays. Ask them to determine if their essays have at least eight parts. Let them fill in the graph. Reinforce them for reaching eight or more.

**Wrap-Up, Celebrate Student Learning!!**

## APPENDIX H. POW + TREE MNEMONIC CHART FOR YOUNGER STUDENTS

### POW + TREE Mnemonic Chart for Younger Students

#### POW

Pick my idea

Organize my notes

Write and say more

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#### TREE



\_\_\_\_\_ Topic Sentence

\_\_\_\_\_ Reasons (3 or more)

Why do I believe this?

Will my readers believe this?

\_\_\_\_\_ Ending, Examine

Wrap it up.

Do I have all my parts? Yes/No

## APPENDIX I: TRANSITION WORDS

First  
Second  
Third  
Fourth  
Fifth

Another  
Also  
A different  
One more  
Next  
My final  
Finally



## APPENDIX J. ESSAY SAMPLE FOR STUDENTS

Should Children Have to Go to School?

Kids need to go to school. One reason why it is important to go to school is because at school you make friends who live outside your neighborhood. Another reason why school is important is because this is where you learn to read and write: for example, you learn about science and history. One more reason why kids should go to school is because school can be a lot of fun, especially during special activities and field trips. I know that some kids might say, “No school.” But I disagree. I say, “School is fun, it helps you make new friends, and teaches you what you need to know.”

Note: Questions adapted from *Powerful Writing Strategies for All Students*, by K. Harris, S. Graham, L. Mason, & B. Friedlander (2008).

**APPENDIX K. POW+TREE, FIDELITY OF TREATMENT**

<p><b>Accuracy of Implementation Rating Scale</b></p> <p><b>POW+TREE Writing Strategy</b></p>
<p>0 = completed accurately; X = incorrectly completed</p>
<p>Instructional Procedure Observation</p> <p>Provides students with appropriate materials _ _ _ _ _</p> <p>Visual aides are posted in the classroom _ _ _ _ _</p> <p>Follows script verbatim as noted on lessons _ _ _ _ _</p> <p>Has students restate POW+TREE writing strategy _ _ _ _ _</p> <p>Says “Begin writing.....” and starts timing students _ _ _ _ _</p>

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## REFERENCES

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## **CURRICULUM VITAE**

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