Evaluating Effective Writing Instruction for Adolescent Students in an Emotional and Behavior Support Setting

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ABSTRACT: A multiprobe multiple baseline design was used to evaluate the effectiveness of strategy instruction in persuasive quick writing with 5 seventh- and eighth-grade students who attended a county alternative placement school for students with severe emotional and behavioral disabilities. Students were taught to plan and write a 10-minute persuasive response using the Self-Regulated Strategy Development instructional model. Instruction was conducted over five 30-minute sessions plus three 10-minute sessions. Positive effects were noted for all students on the primary measure, quality of written responses. The effect of the intervention was maintained over time. All students reported that the instruction benefited performance.

■ The learning problems of students with disabilities have been well documented. Students with disabilities have been characterized as inefficient learners who cannot easily access and coordinate the multiple mental processes needed for academic learning (Swanson, 1989). When compared to other students with disabilities, students with emotional and behavioral disorders (EBD) may have more difficulty with self-regulating the social and/or behavioral skills needed for academic success (Myles & Simpson, 2002; Reid, Trout, & Schwartz, 2005). These students are often characterized as having externalizing or internalizing behavior patterns that impede social, behavioral, and/or academic progress (Lane, 2007). Some students with EBD experience pronounced difficulties with problem behaviors, resulting in low academic performance, often after progress has been previously established and documented (Mason & Shriner, 2008).

Among students with disabilities, for the previously stated reasons, students with EBD are most likely to have significant academic deficits, often performing 1 to 2 years below grade level (Kauffman, 2001; Nelson, Benner, Lane, & Smith, 2004). Compared to students from other disability groups, students with EBD achieve lower math and reading scores and have higher rates of school failure and grade retention (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). Furthermore, 51% of students with EBD age 14 and older drop out of high school (U.S. Department of Education, 2001). Clearly, researchers should be focusing on improving academic outcomes for these students. In a review of academic instruction and tutoring interventions, however, Lane (2004) noted that out of all the interventions for students with EBD published between 1990 and 2003, only 14 studies evaluated students' academic performance.

Although addressing social and behavioral issues has been the primary focus of school-based research for students with EBD, the effects of well-designed academic instruction are fortunately becoming more of a focus of research (Sutherland & Wehby, 2001; Trout, Nordness, Pierce, & Epstein, 2003). Researchers, moreover, have noted that students with EBD may especially benefit from instruction that facilitates organization, systematic thinking, and clear communication skills (Regan, Mastropieri, & Scruggs, 2005). In a review of writing research, for example, Taft and Mason (in press) noted two recent studies in elementary schools specifically designed for students identified with EBD (Adkins, 2005; Mason & Shriner, 2008) and two studies designed for second-grade students at risk for EBD (Lane, Graham, Harris, Little, & Sandmel, in press; Lane, Harris, Graham, Weisenback, & Morphy, 2008). Self-regulated strategy development (SRSD) instruction for writing was used in all four studies. In another review of the evidence base for SRSD instruction, the importance of conducting writing intervention research for a variety of groups across

grade levels was noted (Baker, Chard, Ketterlin-Geller, Apichatabutra, & Doabler, 2009). Although writing is a critical academic skill for adolescents (Graham & Perin, 2007) and is difficult for many students with EBD (Reid et al., 2004), little research has focused on writing instruction for this group of learners.

SRSD Instruction

SRSD instruction is designed to promote writing independence by teaching students cognitive and self-regulation strategies for regulating the writing process. Six instructional stages facilitate the student's mastery of strategy use: develop preskills and background knowledge; discuss it; model it; memorize it; provide guided practice; and independent practice (Harris, Graham, & Mason, 2003). Goal setting, self-monitoring, self-instructions, and self-reinforcement to support student self-regulated learning are imbedded in SRSD instruction. Instruction is scaffolded by gradually shifting responsibility for strategy use and self-regulation of the writing process from the teacher to the student. Instruction is criterion-based rather than time-based. Students must demonstrate mastery of a particular stage or procedure before they are allowed to move to the next phase of instruction. The instructional stages and self-regulation procedures in SRSD instruction support students' attention in using writing strategies. Furthermore, the support and guidance that teachers provide during SRSD instruction through the use of prompts and interaction foster maintenance of learning.

As noted previously, SRSD instruction has been validated in four studies for students with or at risk for EBD. In the Adkins (2005) study with second- and third-grade students with EBD, effects of SRSD instruction for story writing at both post-instruction and maintenance were 100% of non-overlapping data (PND)[1] for story elements, quality, and number of words written. Effects of instruction generalized to writing a personal narrative. In the two Lane et al. (2008; in press) studies for story writing with second-grade students at risk for EBD, students' performance after instruction ranged from 86% PND to 100% PND at post-instruction, and from 88% PND to 100% PND at maintenance. Quality and number of words written also improved well above baseline scores at both post-instruction and maintenance.

Mason and Shriner (2008) taught persuasive writing to younger and older elementary-aged students with EBD. For students in grades two and three, 83% PND was achieved at post-instruction; for students in grades four and five 100% PND was achieved during post-instruction. All students achieved 100% PND during maintenance. The authors noted that the quality, the number of words written, and the number of transition words used were also improved, and that effects generalized to another setting. Given the positive effects of SRSD instruction for elementary students with EBD and for students with LD (Mason & Graham, 2008), the authors believed that this approach may benefit older students with EBD.

Persuasive Quick Writing

A short constructed writing task, known as a quick write, was selected for the target task in the current study for middle school students with EBD. The nature of short writing responses should not only promote fluency and quality of writing, but also increase students' attention to task or their perseverance and motivation to continue to write (Mason, Meadan, Hedin, & Mong Cramer, in press). Quick writes are often used to assess student content learning and are an important skill for the secondary classroom (Green, Smith, & Brown, 2007).

Quick writes are generally 10-minute writing responses to a question related to a specific topic (Fisher & Frey, 2008). Constructed writing activities, such as quick writes, benefit students' learning by encouraging students to make connections through the writing process (Tierney, Soter, O'Flahavan, & McGinley, 1989). In the classroom, quick writes are often implemented at the beginning, middle, or end of a lesson. Giving students opportunities to write short responses is also common in formal assessment. For example, in The National Assessment Educational Performance (NAEP) test, short written informative, narrative, and persuasive responses are used to evaluate student text comprehension. On a

[1]The percentage of PND is the most commonly used method to gauge the intervention effect (Scruggs, Mastropieri, & Casto, 1987). A PND of 90% and above is considered a large effect, 70–90% is a medium effect, and below 70% indicates a small effect.

recent 25-minute reading assessment, for example, eighth-grade students were asked to read a passage and answer questions including the following persuasive writing prompt (The Nation's Report Card, 2007): ''Do you think Ellie's meter project was a 'good science-fair project'? Support your opinion with information from the article.''

An acceptable response, as noted by NAEP scoring criteria, contains an opinion, supportive details, and an evaluation or explanation of how these details support the student's opinion (Mason, Benedek-Wood, & Valasa, 2009). Unfortunately, even though researchers have noted their value in evaluating independent student performance, construction of written responses has rarely been used in research focused on students with EBD (Sutherland & Wehby, 2001).

The intervention in the current study, SRSD instruction for POW (Pick my ideas, Organize my notes, Write and say more) + TREE (Topic sentence, Reasons—three or more, Explain, Ending), was designed to address the criteria noted above as critical for effective, persuasive, constructed writing responses or quick write. The first strategy, POW, is a general planning strategy that includes three steps: (a) pick an idea or side of a topic; (b) organize ideas into writing using a graphic organizer; and (c) write and say more by modifying and improving the original plan while writing. TREE, the second strategy, helps students include basic elements of persuasion in their writing. This includes: (a) write a convincing Topic sentence that tells what you believe; (b) write at least three Reasons why you feel the way you do about a topic, in addition to one counterargument for why someone would not believe your reasons; (c) write Explanations to support each reason written and refute your counter-reason; and (d) wrap it up with a good Ending or summary sentence.

SRSD instruction for persuasive quick writing was examined in two multiple-baseline across-participants design studies with seventh- and eighth-grade students with learning disabilities and/or attention deficit hyperactivity disorder in an inclusive middle school (Mason, Kubina, & Taft, in press). In the first study, 6 students were taught in pairs by a graduate research assistant. Results indicated that students improved performance with 94% PND for number of elements written at post-instruction and 100% PND at maintenance. In the second study, 10 students were taught by their special education teachers in small groups. Results indicated that students improved the number of elements written with 84% PND at post-instruction and 64% PND at maintenance. Results for quality of the response in both studies were disappointing, 56% PND at post-instruction and 75% at maintenance in the first study and 62% PND at post-instruction and 50% PND at maintenance in the second study. In both studies, although students demonstrated improvement over baseline performance, authors noted insufficient scaffolding of support during guided practice as a potential influence in post-instruction variability in the quality of student responses.

Purpose

In the current study, SRSD instruction for persuasive quick writing for middle school students with LD and ADHD (Mason, Kubina, & Taft, in press) was extended by (a) adding additional scaffolded guided practice lessons for writing a timed response and (b) testing the effects for students with EBD. In writing, while the relationship between practice as a separate instructional component and higher order skills, as needed for a quality product, has not yet been widely explored or empirically tested, additional guided practice may yield beneficial results. In academic areas such as reading and mathematics, for example, practicing to competent levels has resulted in students attaining performance critical to higher order skills (e.g., National Mathematics Panel, 2006; National Reading Panel, 2000). Our hypothesis was that middle school students with EBD might benefit from evidence-based SRSD instruction with supplemental guided practice for writing a timed response. The following research questions were asked:

1. What are the effects of SRSD instruction for quick writing on: (a) the quality of the persuasive quick write, (b) the number of parts included in the quick write, (c) the corresponding text structure components in the quick write, and (d) the number of words written?
2. Does the effect of SRSD instruction for quick writing generalize to performance on a standardized test of writing fluency?
3. Was the treatment acceptable for the participants?

A multiprobe multiple-baseline across-participants design (Kennedy, 2005) was employed to assess the effects of SRSD instruction for POW + TREE across students over time. This multiple-baseline study design allowed for comparisons to be made within and between subjects across the baseline, intervention, and maintenance phases. Additionally, the multiprobe design ''is also an effective experimental strategy for situations in which extended baseline measurement may prove reactive, impractical, or costly'' (Cooper, Heron, & Heward, 2007, p. 212). Asking students with poor writing skills to engage in timed composition activities for weeks at a time would produce reactive and negative effects towards the experimental procedures.

Method

Setting

An alternative school in a large university town in the Mid-Atlantic region was chosen as the site of this study. The school offered Individualized Education Program (IEP) behavior support services for elementary, middle, and secondary students with EBD. At least two of three professionals—a teacher (who holds a bachelor's degree in special education), an emotional/behavioral support counselor, and a paraprofessional—were present in all classrooms at all times. There was also a part-time psychologist on staff. The program offered a continuum of services with the primary goal of re-integrating students to the general public home school setting by gradually moving students from the full-day placement at the school to a half-day placement. The program also served as an intermediary placement for students on waiting lists for residential placement. The majority of the school day was devoted to behavioral and social goals, with 5 to 7 hours of planned individual and group counseling per week. Students received 2 hours of reading and mathematics instruction per day. No formal explicit writing instruction was provided as part of the students' academic curriculum. Students, however, did respond to a short prompt during a 15-minute shared journal writing time approximately 3 days a week. The students received teacher feedback on their writing responses.

In order for a student to have been placed in the alternative school setting, the student must have exhibited behaviors in their home school that required intensive emotional and/or behavioral support beyond what could be provided in an inclusive setting. Together, the emotional support counselor, parent/guardian(s), home school principal, alternative school principal, and special education teachers from the home school and the alternative setting reviewed documented school behaviors and the services required in order to determine placement in the alternative school setting. The students' IEP academic goals were implemented by the special education teacher. Formal testing records, however, were not transferred with the student to the school. Their records, therefore, were not available to the research team. Parent/guardian and student consent was obtained from all participants. Student names have been changed to protect confidentiality.

Participants

Eight Caucasian students were enrolled in the middle school program at the start of the study. By the end of the study, the program had 10 middle school students from four area districts, with five students on a waiting list. All students enrolled in the middle school program with IEPS for EBD and goals for work completion in writing or goals for writing performance were eligible to participate in the study. Due to study design restrictions and logistics, students who enrolled in the program after the start of the study were not eligible. *Table 1* provides an overview of each participant's characteristics. Six students with IEPs for EBD, 5 males and 1 female, agreed to participate in the study. One of these students, however, was transitioned back to his home school and was unable to complete the study. One parent/guardian did not provide consent for their child.

Dudley

Dudley was an eighth grader, 14 years and 4 months old, with a primary school–identified disability of autism who had difficulty with organizing time and materials and completing assignments. According to his IEP and behavior support plan, Dudley ''lashes out'' at teachers when frustrated by an academic assignment. His goals included breaking large assignments into small parts and developing self-supports to manage assignments. Dudley demonstrated an ability to perform at grade level in social studies, science, math, and English. However,

TABLE 1
Student Characteristics

Student	Gender	Ethnicity	Age	Disability	Behavioral Goals
Dudley	Male	Caucasian	14.5	Autism, EBD	Coping
Miley	Female	Caucasian	12.11	ADHD, EBD, SLD	Following directions Stress management
Walter	Male	Caucasian	13.6	EBD	Anger management Impulse control
Neil	Male	Caucasian	14.1	EBD	Improve social skills Self-awareness Coping
Toby	Male	Caucasian	13.3	EBD	Self-awareness Improve organization

Notes. EBD = emotional behavioral disorder, ADHD = attention deficit hyperactivity disorder, SLD = speech language disorder.

his grades in math and English were low due to incomplete assignments.

Miley

The only female participant, Miley, was a seventh grader who was 12 years and 10 months old. She has been diagnosed with EBD and co-morbid attention deficit hyperactivity disorder (ADHD) and a specific learning disability (LD) in listening comprehension and language processing and received IEP learning support services for math, reading, and writing. According to her IEP, Miley was below basic level in writing and had difficulty keeping her writing focused, often adding inappropriate details. Her teacher noted that when given a writing assignment, Miley often resisted completing her work. Miley's IEP goals included improving her response to verbal directions and writing a coherent essay according to a rubric that included sentence structure, organization of ideas, and topic and ending sentences. Miley was transferred to a residential placement shortly after she completed the study.

Walter

Walter (13 years, 6 months old and in seventh grade, with EBD), according to his IEP, was unable to control his impulses and manage anger. Walter displayed little self-control when presented with behavioral consequences and had low self-confidence in his academic abilities, although he demonstrated grade-level ability in all academic subjects. When presented with a writing assignment, Walter rushed to complete the assignment with little effort. Walter's IEP goals included enhancing social skills, impulse control, and anger management skills.

Neil

Neil, a seventh grader with EBD who was 13 years and 3 months old, had a support plan to address direct instruction in social skills, problem-solving, communication, and organization skills. Although Neil performed at grade level in all academic subjects, his social difficulties affected his ability to stay on task and complete assignments. Neil's IEP included extended testing time in math, reading, and writing and goals for improving social, self-awareness, and organizational skills.

Toby

According to his IEP, seventh-grader Toby, 14 years and 1 month old with EBD, often exhibited behaviors that impeded overall academic progress and ability to focus and complete assignments. Toby performed at grade level in all academic subjects; however, when given a writing assignment, Toby was hesitant to begin tasks. When he did write, his writing lacked organization and contained unreadable handwriting. Toby's IEP goals included improving social and organizational skills and increasing work completion and self-control.

Procedures

Recruitment and consent process was conducted within procedures approved by two area district school boards and the University's Internal Review Board. Following district board approval, parent/guardian consent was obtained, followed by student con-

sent. A multiprobe multiple-baseline across-participants design was used to assess individual student performance before, during, and after instruction. Prior to instruction, baseline performance was established by collecting 10 minute persuasive responses written in response to prompts (e.g., ''Should students be allowed to chew gum in school?''). Students were provided a choice in writing to one of two prompts and the side of an argument on which to take a position.

Experimental Design

Baseline probes were administered until a stable baseline was established. At least five probes were given during baseline, with additional probes administered just prior to the start of instruction for each student (Dudley, $N = 5$; Miley, $N = 6$; Walter, $N = 7$; Neil, $N = 8$; and Toby, $N = 9$). Instruction for each student did not begin until after the preceding student reached criterion performance of writing at least three 10-minute prompts with a quality score of 6 points or higher. Immediately after instruction, five probes were administered to each student to determine independent writing performance. All students were given one maintenance assessment.

Visual inspection procedures (i.e., level, trend, and variability of performance during baseline, intervention, post-intervention, and maintenance phases) were used to evaluate the effects of the intervention on the primary measure—response quality. Means and standard deviations were calculated for quality, response type and number, and number of words written. Percentage of overlapping data points, mean changes, and standard deviations at the student and group level were used to examine intervention outcomes. Descriptive statistics and *t*-tests were used to analyze the *WJ-Fluency* subtest. Treatment acceptability was reported descriptively.

Measures

Students' performance was evaluated by examining persuasive responses written to a prompt during a 10-minute period. The prompts had been developed and tested in three prior studies with middle school students, including students with EBD (Mason, Kubina, & Taft, in press; Mastropieri et al., 2009). Prior to scoring, each response was typed and saved in a Word document. Identifying information was removed and a code assigned to the paper so that scorers would be unaware of the testing time. Given that text appearance and mechanical mistakes can influence scorer judgment about writing (Graham, 2006), spelling, punctuation, and capitalization mistakes were corrected. Each response was scored for response quality (holistic quality), number and type (e.g., topic sentence, reason, explanation, counterargument, and ending sentence) of TREE parts, and number of words (length). To test generalization to a different fluency task, a secondary standardized test, the *Woodcock-Johnson Writing Fluency* subtest (*WJ-Fluency*), was given during a 7-minute time period. The graduate assistant instructor administered all assessments.

Quality

Overall response quality was scored using a 7-point holistic measure. Quality scores were based on response elements and response organization. For example, to earn a score of 7, the response needed to include a belief/topic sentence, three or more reasons, an explanation for at least three reasons, a counter-reason, and an ending sentence, and the response would be organized into a paragraph(s) with sentences. To earn a score of 4, the response needed to include a belief/topic sentence, two or more reasons, and two or more elements of a persuasive response (i.e., explanation(s), counter-reason, ending), and the response needed to be organized into a paragraph(s) with sentences. Responses scored a 1 included a belief/topic sentence with no other persuasive elements or included a belief/topic sentence, but then argued both sides of the argument (student's position not clear). Raters were given anchor papers representing each score level. The use of holistic scoring with anchor points has been developed in previous research (Harris, Graham, & Mason, 2006; Mason & Shriner, 2008). The anchor papers used for scoring in this study had been developed and used in the two Mason, Kubina, and Taft (in press) studies.

Response Parts

Writing prompts were scored for basic response parts: topic sentence, reasons, explanations, counter-reason with refute, and ending sentence. Students earned 1 point for each response part they included. In other words, 1

point was earned for a topic sentence, 1 point was earned for each reason, 1 point for each explanation, 1 point for a counter-reason, and 1 point for the ending sentence. Parts were counted and analyzed both for the total number of parts and by the type of part.

Number of Words

The number of words written was determined using the word count function of Microsoft Word. To eliminate potential error, scorers independently verified this word count by reading each response for typographical errors.

WJ-Fluency

Standardized test administration and scoring procedures in the *WJ-Fluency* subtest testing manual were followed. In this test, students are asked to write a complete sentence using three provided words and a picture cue. The test includes 40 questions; students are given 7 minutes to answer questions. Alternate forms of the subtest were used, Form A at pretest and Form B at post-test. Reported test-retest reliability for seventh- and eighth-grade students is .59 (Woodcock & Johnson, 1990).

Treatment Acceptability

Following instruction and post-testing, students were asked to write a response to the following question: ''Should students your age be taught how to write using POW + TREE?'' Students' written responses were collected and typed by the instructor.

Scoring

Two advanced graduate student raters (scorers) received instruction in how to accurately score all measures. Papers were coded so that raters were blind to the student and testing phase or time. During scoring training, scorers rated persuasive responses until they achieved 95% reliability over 10 responses. Interrater reliability was computed for quality at 82% for exact agreement and 99% for within 1-point agreement, and for parts at 73% for exact agreement and 95% for within 1-point agreement. For disagreements, scores were averaged. Interrater reliability was computed at 100% for the *WJ-Fluency* test.

Intervention Procedures

Students were provided with one-on-one instruction in a hallway outside of the classroom by a trained, advanced special education graduate student instructor. Instructor training included: (a) participation in six 2-hour classes on writing instruction, (b) class-based SRSD intervention project with one-to-one instruction for an elementary-aged student, and (c) review and modeling of SRSD for quick writing lesson plans with the first author. Five 30-minute lessons and three 10-minute lessons were given over the course of 2 to 3 weeks. Existing school-developed behavior support plans for individual students were maintained during all instructional sessions.

All six stages of strategy acquisition and four self-regulation procedures in the SRSD instructional delivery model were employed throughout the lessons (Harris, Graham, Mason, & Friedlander, 2008). Prior to instruction, the student and instructor collaboratively determined writing goals and signed a learning contract. All lessons began with a review of previously learned concepts combined with memory practice of the parts of the POW + TREE strategy. Verbal praise was given frequently for correct strategy usage. In order to enhance motivation through self-monitoring, students were also given the opportunity to graph their own performance. All lessons were adapted from the two Mason, Kubina, and Taft (in press) studies for persuasive quick writing for students with LD. Lessons were revised to include criteria (i.e., writing a 10-minute response with at least 6-point quality) for the last guided practice lesson.

Lesson 1: Developing background knowledge/introducing the strategy. The purpose of Lesson 1 was to develop the students' background knowledge and introduce the POW + TREE strategy. Before the lesson began, the instructor described and discussed the words ''persuasive'' and ''writing response'' with the student. The student was then prompted to share times when he or she was asked to write a quick response in other classes. The instructor also introduced a POW + TREE mnemonic chart that listed all strategy steps. Each strategy step in POW + TREE was reviewed and described. Next, the instructor introduced a transition word list (a reference of words used to introduce an idea) and a chart for graphing the number of parts written.

The instructor and student then practiced locating persuasive parts in an anchor/model

persuasive response. Together, the student and instructor determined if the writer used all parts of a persuasive response and discussed what transition words were used. As the student identified persuasive essay parts, the teacher modeled writing notes for each part in the appropriate section of the TREE graphic organizer.

After reviewing the anchor response, the student reviewed a persuasive response previously written during the baseline phase. Parts and transition words were noted and recorded on the TREE graphic organizer. The student was given the graphing chart and filled in one space for each step of TREE present in their persuasive response. The instructor then provided examples of how to improve the essay (i.e., give more reasons, use a counter-reason, use good word choice, use an interesting first sentence, use an interesting ending sentence). To wrap up the lesson, the student was reminded of their goal to write better persuasive responses.

Lesson 2: Modeling and providing prompted practice. In order to set the context in this lesson and all future lessons, the instructor tested the student for memorization of POW + TREE strategy steps. The instructor then orally read a practice prompt and modeled how to use POW + TREE for writing a persuasive response. The instructor used self-instructions throughout modeling. For example, ''Remember that the first letter in POW is P—pick my idea. To do this, we have to be creative and think free.'' After modeling, the teacher asked the student if he or she could remember things the teacher said to get started, things said while working, and things said when finished writing. The instructor asked the students to write some things they could say on a self-instruction sheet. Next, the student and teacher collaboratively added TREE parts to the student's graphic organizer developed in Lesson 1. The student then rewrote the response, counted the number of parts in the revised response, and graphed the number of parts on the graphing sheet. Lesson 2 ended, as did all lessons, by closing with praising the student for using POW + TREE and reminding the students about the memory test for the next lesson.

Lesson 3: Collaborative practice. After memorization practice, the student and instructor collaboratively wrote a persuasive response. The student was given a blank graphic organizer, a transition word chart, the personal self-instructions sheet, and a practice prompt. The teacher prompted the student to remember and use all parts of POW + TREE to plan and write the response. The teacher and students then collaboratively developed reasons and explanations for the response. Students were encouraged to use personal self-instructions through the writing process. After writing, the student counted and graphed the number of response parts.

Lesson 4: Guided practice writing a persuasive response. The focus of Lesson 4 was to wean the student off the graphic organizer and transition word list. The instructor explained to the student that he or she will not usually have a graphic organizer or transition word sheet when writing a persuasive response. The instructor discussed and modeled how to write the POW + TREE reminder at the top of the paper and how to write notes for each part. After the student generated notes for all response parts, the instructor said, ''Remember to look back at your notes and see if you can add more notes for your response parts. Remember also to look for more ideas for good word choice.'' The student was encouraged to think of more good ideas and to use self-instructions while writing. In wrapping up the lesson, the student counted and graphed the number of parts in the essay and was reminded of memory practice for the next session.

Lesson 5: Guided practice writing a 10-minute persuasive response. During Lesson 5, the instructor modeled writing a persuasive response in 10 minutes. Following modeling, the student, with instructor guidance and prompting, wrote a 10-minute response. The student counted and graphed the number of response parts. Lesson 5 was repeated until the student could proficiently write a 10-minute persuasive response with a 6-point or greater quality score without instructor support.

Instructional Treatment Fidelity

Three steps were taken to ensure treatment fidelity. First, the graduate assistant instructor communicated daily with the first author to discuss the day's lesson and to review plans for the next lesson. Next, the instructor used a checklist for the step-by-step instructions in each lesson. As each step was completed during the lesson, the instructor checked the step. Finally, researchers collected observation data for 50% of lessons. Session integrity was computed by dividing the number of lesson steps taught by the total number of steps and multiplying by 100. Treatment fidelity was 100% for the checksheet and observations.

Results

There was an overall improvement in the persuasive writing of all of the participants following the SRSD instruction for the POW + TREE writing intervention. *Figures 1*, *2*, and *3*, respectively, display the multiprobe multiple-baseline results for the quality of responses, number of parts, and number of words written. Means (*M*) and standard deviations (*SD*) for quality, number of parts, and number of words written are noted in *Table 2*. *Table 3* lists the number of part types written.

Quality of Response

Each student's level and trend of quality of response improved and stabilized at above criterion (6 points) during and after instruction (see *Figure 1*). Dudley's quality score improved from a range of 0 to 5 at baseline to 4 to 7 at post-instruction. Miley improved from 3 to 6 at baseline to 5 to 7 at post-instruction. Walter improved from 3 to 5 at baseline to 4 to 7 at post-instruction. Neil's baseline performance ranged from 2 to 6 and Toby's ranged from 1 to 6. Both Neil and Toby earned a quality score of 7 for all post-instruction probes. Performance above baseline was maintained 2 weeks following instruction for all students with the exception of Dudley. PND for post-instruction compared to baseline was 84% and 60% at maintenance. Quality for individual students ranged from $M = 2.80$ to $M = 4.13$ at baseline, $M = 6.71$ to $M = 7.00$ at instruction, $M = 6.00$ to $M = 7.00$ at post-instruction, and $M = 5$ to $M = 7$ at maintenance (see *Table 2*).

Number of Total Parts Written

Each student's level and trend for the number of parts written stabilized at above criterion (8 points) during and after instruction (see *Figure 2*). Dudley's quality score improved from a range of 4 to 9 at baseline to 8 to 11 at post-instruction. Miley improved from 6 to 11 at baseline to 8 to 10 at post-instruction. Walter improved from 8 to 13 at baseline to 9 to 11 at post-instruction. Neil's baseline performance ranged from 5 to 8 and stabilized to 9 for all post-instruction probes. Toby's baseline ranged from 2 to 11 and post-instruction ranged from 9 to 12. Performance at or above criterion was maintained 2 weeks following instruction for all students. Only Neil had all number of parts written above his highest baseline probed for post-instruction and maintenance resulting in a group PND of 20%. Number of total parts written for individual students ranged from $M = 6.38$ to $M = 9.17$ at baseline, $M = 9.00$ to $M = 9.71$ at instruction, $M = 8.60$ to $M = 10.20$ at post-instruction, and $M = 8.00$ to $M = 11.00$ at maintenance (see *Table 2*).

Number of Part Types Written

Numbers of response parts by type are noted in *Table 3*. Students' mean performances across phases based on the strategy should be: (a) $M = 1.00$ for topic sentence, (b) $M > 3.00$ for reasons, (c) $M > 3.00$ for explanations, (d) $M = 1.00$ for a counter-reason, and (e) $M = 1.00$ for ending. During baseline, all students with the exception of Dudley included a topic sentence and at least three reasons. Performance for both writing a topic sentence and writing at least three reasons maintained with minimal growth across all phases. No student, however, explained all reasons during baseline (range $M = 1.00$ to $M = 2.33$). After instruction, explanations increased, with $M = 2.80$ to $M = 3.80$ at post-instruction and $M = 3.00$ to $M = 4.00$ at maintenance. Counter-reasons were not written consistently prior to instruction ($M = 0$ to $M = .66$). After instruction students consistently wrote a counter-reason ($M = 1.00$ for all students). All students maintained this performance with the exception of Neil. Similar results were noted for ending sentences ($M = .33$ to $M = 1.00$ at baseline). All students wrote ending sentences at both post instruction and maintenance ($M = 1.00$ for all students).

Number of Words Written

With the exception of Neil, all students decreased in the number of words written after instruction (see *Figure 3*). Visual inspection indicates an improvement in stability across instruction and post-instruction phases. Number of total words written for individual students ranged from $M = 79.00$ to $M = 165.17$ at baseline, $M = 92.29$ to $M = 110.74$ at instruction, $M = 88.80$ to $M = 126.00$ at post-instruction, and $M = 67.00$ to $M = 133.00$ at maintenance (see *Table 2*).

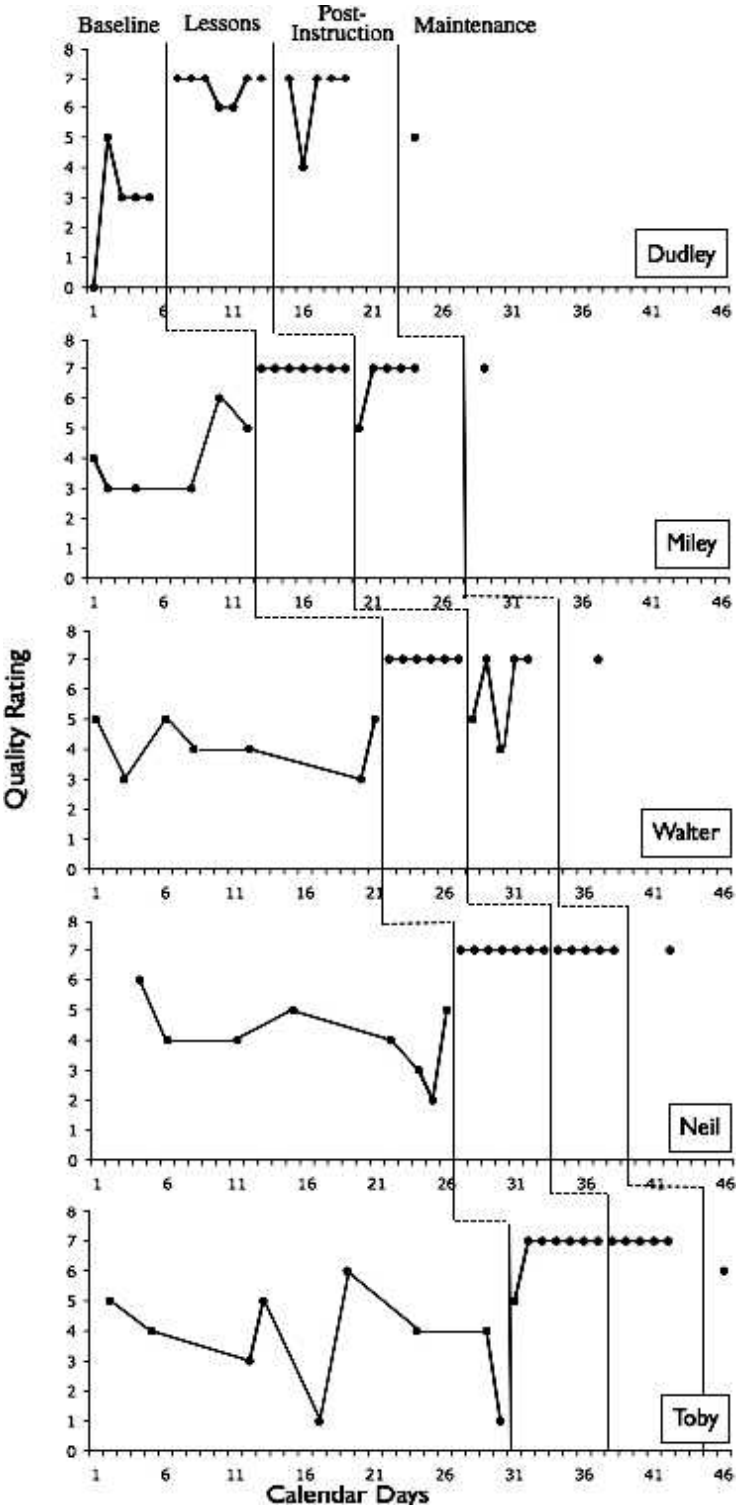

Figure 1. Response quality.

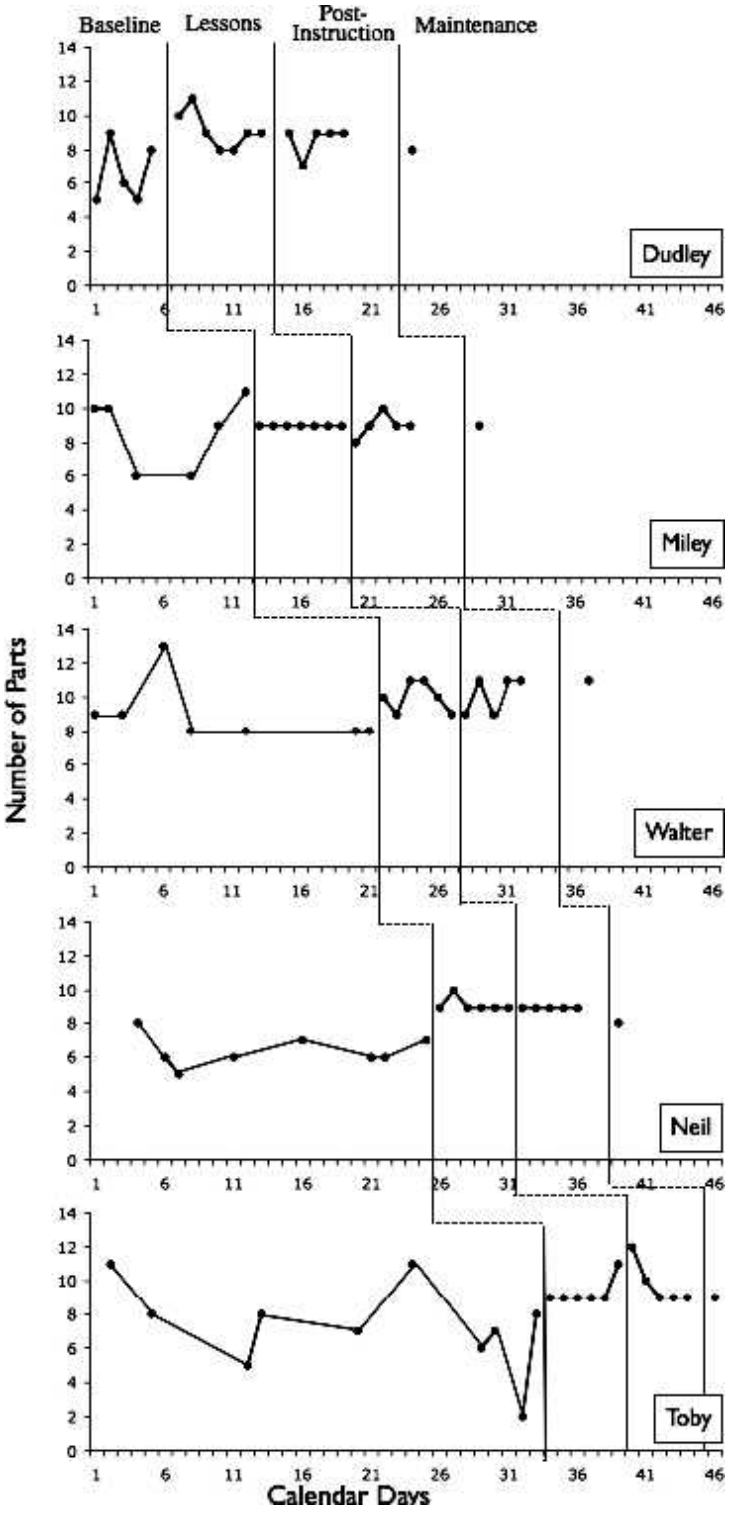

Figure 2. Number of parts written.

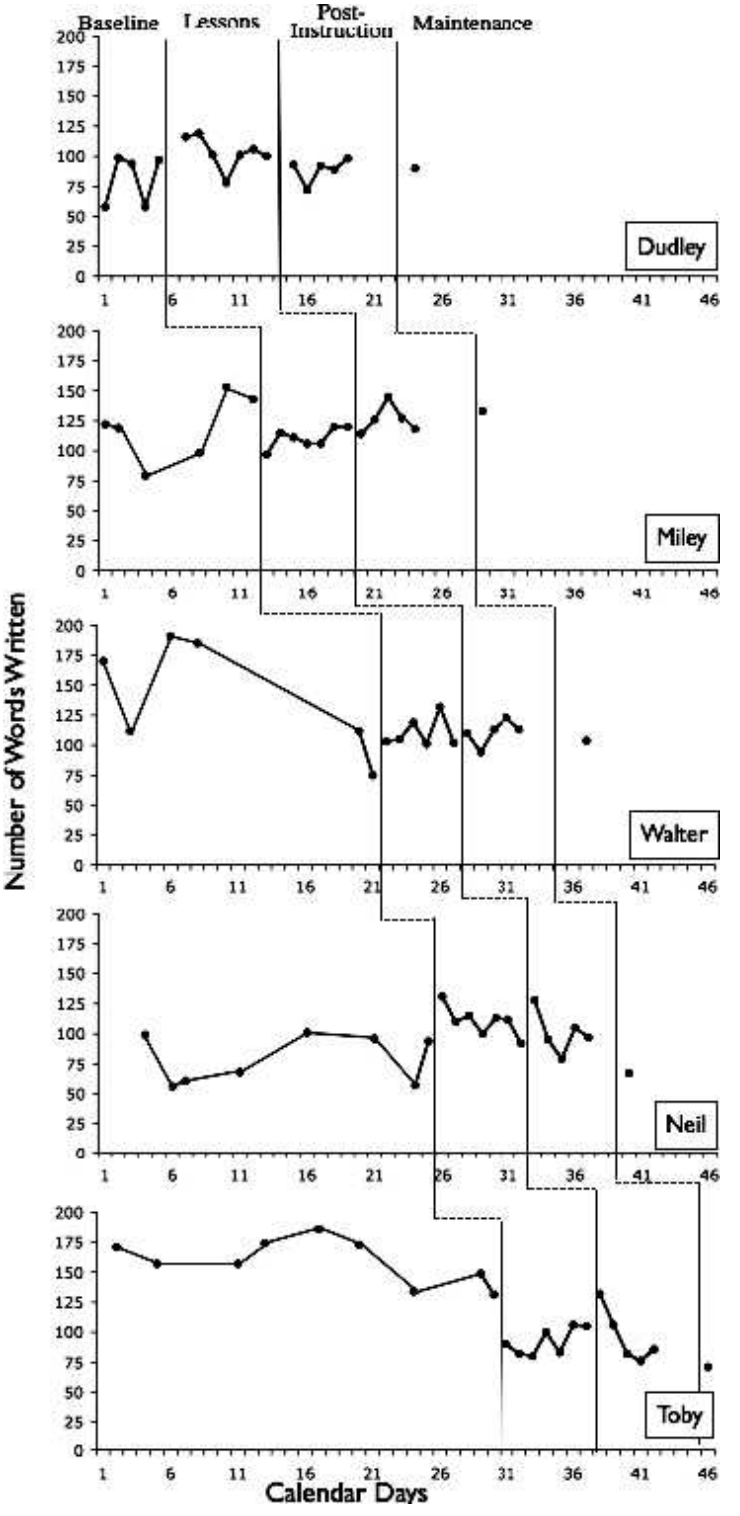

Figure 3. Number of words written.

TABLE 2
Response Parts, Quality, and Word Count

Student	Phase	Quality *M* (*SD*)	Parts *M* (*SD*)	Word Count *M* (*SD*)
Dudley	Baseline	2.8 (1.79)	6.6 (1.82)	81.2 (21.25)
	Guided Practice	6.71 (0.49)	9.14 (1.07)	103 (13.39)
	Post-Instruction	6.4 (1.34)	8.6 (0.89)	88.8 (9.93)
	Maintenance	5	8	90
Miley	Baseline	4 (1.26)	8.66 (2.16)	119 (27.50)
	Guided Practice	7 (0)	9 (0)	110.74 (7.78)
	Post-Instruction	6.6 (0.89)	9 (0.71)	126 (11.94)
	Maintenance	7	9	133
Walter	Baseline	4 (0.89)	9.17 (1.94)	165.17 (44.40)
	Guided Practice	6.71 (0.76)	9.71 (1.11)	105.29 (17.58)
	Post-Instruction	6 (1.41)	10.2 (1.10)	110.6 (10.50)
	Maintenance	7	11	104
Neil	Baseline	4.13 (1.25)	6.38 (0.92)	79 (20.20)
	Guided Practice	7 (0)	9.14 (0.38)	110.43 (12.26)
	Post-Instruction	7 (0)	9 (0)	100.8 (17.89)
	Maintenance	6	8	67
Toby	Baseline	3.67 (1.73)	7.22 (2.82)	159.11 (18.74)
	Guided Practice	6.71 (0.76)	9.14 (.90)	92.29 (11.24)
	Post-Instruction	7 (0)	9.8 (1.3)	96.4 (22.86)
	Maintenance	7	9	71

WJ-Fluency

Results of instruction indicated that all students improved in writing fluency as tested on the *WJ-Fluency* assessment (see *Table 4*). A paired samples *t*-test of group means and standard deviations was significant: $t = 3.919$, $df = 4$, $p = .017$. Calculation of effect size indicated a small intervention effect, Cohen's $d = .4605$.

Treatment Acceptability

All participants reported that students should be taught and learn POW + TREE. As stated by Toby, ''In my opinion teens my age

TABLE 3
Types of Response Parts

Student	Phase	Topic Sentence	Reasons	Explanations	Counter	Ending
Dudley	Baseline	0.80	3.60	1.20	0.60	0.33
	Guided Practice	1.00	3.14	3.29	0.86	0.86
	Post-Instruction	1.00	3.80	3.80	1.00	1.00
	Maintenance	1.00	3.00	2.00	1.00	1.00
Miley	Baseline	1.00	5.17	2.00	0	0.50
	Guided Practice	1.00	3.00	3.00	1.00	1.00
	Post-Instruction	1.00	3.20	2.80	1.00	1.00
	Maintenance	1.00	3.00	3.00	1.00	1.00
Walter	Baseline	1.00	4.50	2.33	0.50	0.83
	Guided Practice	1.00	3.57	3.14	1.00	1.00
	Post-Instruction	1.00	4.00	3.40	1.00	0.80
	Maintenance	1.00	4.00	4.00	1.00	1.00
Neil	Baseline	1.00	3.25	1.00	0.25	0.88
	Guided Practice	1.00	3.00	3.14	1.00	1.00
	Post-Instruction	1.00	3.00	3.00	1.00	1.00
	Maintenance	1.00	3.00	3.00	0	1.00
Toby	Baseline	1.00	3.11	1.44	0.66	1.00
	Guided Practice	1.00	3.14	3.00	1.00	1.00
	Post-Instruction	1.00	3.60	3.20	1.00	1.00
	Maintenance	1.00	3.00	3.00	1.00	1.00

TABLE 4
Woodcock-Johnson Writing Fluency

Student	Pretest	Post-Instruction
Dudley	22	25
Miley	20	24
Walter	22	23
Neil	21	25
Toby	1	8
Total	*M* 17.20 *SD* (9.09)	*M* 21 *SD* (7.31)

should be taught the POW + TREE strategy.'' Students noted at least three reasons for supporting POW + TREE as valuable in writing. Students specifically noted that the strategy helped with organization, thinking things through, writing more, generating better ideas, and writing neatly.

Discussion

The results of SRSD for POW + TREE indicated that adolescent middle school students with EBD were able to improve the quality of a persuasive quick write response. These findings confirm prior research indicating that SRSD instruction can enhance writing skills for adolescent students (Graham & Perin, 2007) and extend the research base by specifically demonstrating that SRSD instruction for the POW + TREE strategy for quick writing (Mason, Kubina, & Taft, in press) can improve performance for middle school students with EBD.

Stability of writing performance was an important finding in this study. Student performance varied and was inconsistent during baseline. However, this finding is not surprising given that inconsistent work completion and inattention to task was noted on all students' IEPs. The instability of baseline performance, however, is a limitation of the study in that 2 students demonstrated ascending performance (although not above the highest baseline point) prior to the start of instruction. The quality of responses for all students, for example, ranged from a score of 0 to a score of 6. Variability decreased for all students during instruction (range of 4 to 7), during post-instruction (range of 4 to 7), and at maintenance (range 5 to 7). In fact, out of 25 possible probes for all students during post-instruction, only four scores were below the 7-point ceiling for quality. This finding supports what was noted in each student's IEP. With the exception of Miley, who had specific writing goals for organization, all students were noted to have grade-level ability in writing, but performance was often below grade level due to difficulties in organization, work completion, and/or rushing through a task without expending effort.

In addition to the quality rating, effects of instruction were noted across a variety of measures, including the number of response parts, the type of response parts, and the number of words written. The analysis of response components illustrates what students learned during strategy instruction. Prior to instruction, students wrote responses with several parts (e.g., topic sentence and at least three reasons) but earned low to average quality scores. Miley, for example, who wrote an average of more than five reasons, included a topic sentence followed by a listing of disorganized reasons. Explanations, counter-reasons, and endings were omitted or inconsistently included in her responses. Miley therefore earned a high number of parts ($M = 5.17$) but an average quality score ($M = 4$). Dudley also wrote several parts and received low- to average-quality scores during baseline ($M = 2.8$). Prior to instruction, Dudley tended to argue both sides of the topic and/or omit explanations and the ending. During and after instruction, Dudley learned to include all response parts and argue only one side of a topic. His quality scores therefore increased ($M = 6.4$). Similar findings were noted for all 5 students.

Interestingly, the higher quality responses yielded a lower mean number of words written. At baseline the number of words written averaged $M = 120.70$ for all students. Students wrote $M = 104.35$ during instruction, $M = 104.52$ at post-instruction, and $M = 93$ at maintenance. In a visual analysis of written samples the authors noted a decrease in repetitive reasons and trivial information during and after instruction. The decrease in number of words supports what has been noted in prior research: quality and number of words are not always related (Graham, Harris, & Mason, 2005; Harris, Graham, & Mason, 2006).

The effects of the *WJ-Fluency* subtest indicated small growth with every student improving the number of sentences written correctly in the 7-minute time frame. Given the pretest–posttest delivery of this assessment,

experimental control is lacking; therefore, findings provide only a glimpse of writing fluency behavior. Students, however, did report that instruction improved writing performance and believed POW + TREE should be taught to other students their age. The effects of instruction across transfer measures should therefore not be completely discounted.

Although variability across measures at baseline was greater than many SRSD instruction studies for low-achieving students or for students with LD, the stability of findings at post-instruction and maintenance is consistent with what has been noted in the research literature for adolescent students with disabilities (Graham, 2006; Mason & Graham, 2008). Results of the study indicated that when students with EBD are taught a strategy for quick writing with SRSD instruction, not only does performance improve, but variability in performance also decreases. The instructional components inherent in SRSD instruction (e.g., strategy acquisition and procedures for self-regulation) supported learning for the middle school students with EBD in this study. The addition of structured guided practice lessons contributed to these effects.

Limitations and Future Research

The study has a number of limitations that limit the generalizability of findings. First, the majority of the participants were males and all students were Caucasian. Future research should examine the effects of SRSD for quick writing with a diverse sample of students with EBD to boost confidence in results. Unfortunately, we were unable to obtain full school records and family history for any of the participants. Potential competing factors are therefore unknown.

The primary measure for establishing criterion performance in this study was quality of the response. This was a novel approach; in prior SRSD studies, the number of parts or elements has been used to establish criterion (Graham & Harris, 2003; Graham, 2006). In prior quick writing research with middle school students, however, Mason, Kubina, and Taft (in press) found that students often wrote reasons in list order without attending to the components of a good response such as topic/ending sentences and explanations for reasons. The authors therefore developed the quality score to reflect typical scoring of constructed written responses (The Nation's Report Card, 2007) and to reflect the structure and organization of the TREE strategy. Authors noted that given the students' IEP goals, this arrangement was most appropriate. Given that the quality of students' responses stabilized at the 7-point maximum score, however, a ceiling effect may have occurred. Future studies should examine methods for extending the quality score to encompass additional criteria for well-written responses. Furthermore, using quality as criteria may have impacted the number of reasons included in each response. Stated differently, it is possible that students focused their limited time on explanations at the expense of writing additional good and valid reasons.

Additional research is needed to establish benchmarks for the amount of content that can be written by average performing students without disabilities. In other words, it is currently unknown how the performance of the students in this study compares with that of average fluency benchmarks. In the same manner, benchmarks for quality of writing should also be established. Finally, future research is needed to validate the effects of SRSD for quick writing in teacher-delivered small group instruction.

Implications for Practice

Findings from this study confirm what was noted in the previous quick write study (Mason, Kubina, & Taft, in press). Once a writing strategy has been taught and learned, students with disabilities need extended writing practice. This practice is especially important when restricting writing time, as was done in this study. In addition, teachers should model writing within time limits and provide supportive feedback for students as they learn to plan and monitor timed tasks.

Instructional time for the current study was surprisingly low: five 30-minute sessions plus three 15-minute sessions. Although the students with EBD in this study were noted to have grade-level abilities (with the exception of Miley), we did not anticipate that lessons would not have to be repeated as suggested by SRSD developers and researchers (Harris, Graham, Mason, & Friedlander, 2008). It is critical that teachers attend to student progress and repeat lessons as needed to ensure that each student is successful. Findings of this one-to-one intervention study in no way suggest that all students would learn strategies as

quickly in a group setting or under conditions not tightly controlled for meditating events. SRSD instruction has been designed to be recursive; in other words, lessons should be revisited as needed.

All components of SRSD instruction were implemented in the current study. Each of the six stages of strategy acquisition (develop preskills, discuss it, model it, memorize it, guided practice, and independent practice) and the four self-regulation procedures (goal setting, self-monitoring, self-instructions, self-reinforcement) were implemented with high fidelity of implementation. Graham and Harris (2003) have noted the importance of using all components of SRSD instruction with students who have the most difficulty with writing tasks. The findings of this study provide evidence of the effectiveness of the SRSD instructional approach for adolescent students with EBD when instruction is implemented with fidelity and attention to the needs of individual students.

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