

## Persuading Students With Emotional Disabilities to Write Fluently

Margo A. Mastropieri, Thomas E. Scruggs, Sara Mills, Nancy Irby Cerar, Yojanna Cuenca-Sanchez, Dannette Allen-Bronaugh, Catherine Thompson, Mary Guckert, and Kelley Regan  
George Mason University

*ABSTRACT: A multiple-baseline design study was conducted to evaluate the effectiveness of strategy instruction in persuasive writing with eighth-grade students who attended a public day school for students with severe emotional and behavior disabilities. Students were taught to plan and write persuasive essays using the Self-Regulated Strategy Development model. Following mastery of the strategy, students were taught to apply the learned strategy to write fluently in 10 min. After more than 4 months of instruction, findings indicated that all students had mastered the components of effective persuasive essay writing and increased from baseline to postinstruction and fluency phases in length and quality of essays. Effects were also noted on maintenance and generalization essay probes administered over 11.5 weeks after fluency testing. Observed on-task behavior was significantly correlated with a number of fluency, maintenance, and generalization outcomes. Implications for teaching and further research are discussed.*

■ Students with emotional and behavioral disabilities (EBD) frequently fall behind their typical achieving peers on academic tasks (Kauffman & Landrum, 2008; Lane, 2004; Lane, Barton-Arwood, Nelson, & Wehby, 2008). However, academic interventions for students with serious EBD appear infrequently in the professional journals. Mastropieri et al. (2009) recently analyzed special education journals and reported that, over the past 19 years, only 15.9% of all research articles described academic or behavioral interventions. Only a small minority of this intervention research (9.6%, or 1.5% overall) included students with EBD. Of those studies, only a handful investigated academic interventions, particularly in the area of writing. Lane (2004) noted that "academic interventions targeting written expression ... represent, by far, the least developed instructional area" (p. 475).

Writing skills are important for all students, but perhaps even more so for students with EBD, who could be expected to benefit from instruction in organizing their thoughts, thinking systematically, and communicating clearly with others (Regan, Mastropieri, & Scruggs, 2005, 2009). Harris, Graham, Mason, and Friedlander (2008) described the Self-Regulated Strategy Development Model (SRSD), which is a promising instructional approach that has successfully improved writing performance

with students with learning disabilities and other students. During six stages of instruction, students develop relevant cognitive and self-regulation skills, including goal setting, self-instruction, and self-monitoring. Students are taught self-regulation, planning, organizing, and writing strategies. For example, to teach students to write persuasive essays, the acronym POW + TREE is used. POW represents the general planning and organizing component, such that P = Plan, O = Organize, and W = Write and say more. TREE represents the genre-specific strategy for persuasive essays: T = Topic sentence, R = Reasons, three or more, E = Explanations, and E = Ending. Additional instructional supports in self-regulation such as goal setting, self-monitoring, and self-instruction are embedded while explicitly teaching strategies to facilitate writing performance.

Although extensive research exists using SRSD to teach writing across a variety of genres and age levels, especially to students with learning disabilities (e.g., Graham & Perin, 2007, for a sample extensive review), very little research exists documenting the efficacy of the approach with students with EBD. Only six applications were identified that targeted the SRSD model specifically with students ( $N = 31$ ) who were either at risk for EBD or identified as having EBD, most of whom were enrolled in elementary grade, general education classes.

Mason, Harris, and Graham (2002) described a successful application of the SRSD model with one third-grade student with learning, attention, and behavioral disabilities. The student was taught the planning strategy of POW (plan, organize, and write) along with the strategy to teach narrative story writing: WWW, What = 2, How = 2 (Who is the main character? When does the story take place? Where does the story take place? What does the main character do? What happens? How does the story end? How do the characters feel? Mason et al. 2002, p. 498). In that case study, Mason et al. provided only writing samples to demonstrate growth. Although this description was promising, no systematic research design was presented.

Adkins (2005) successfully taught three second- and third-graders with EBD the POW + WWW strategy to write stories using a multiple-baseline design. After 19 to 25 individual instructional sessions, all students improved in the number of story elements, number of words written, and overall quality indices. Lane, Harris, et al. (2008) replicated the Adkins work with six elementary-aged students who were considered at risk for EBD who were also all involved in a schoolwide positive behavioral support intervention. Students received 10 to 15 instructional sessions before mastering the lesson components. All students improved from baseline to postintervention and maintenance testing on number of story elements, quality, and total number of words written. Mason and Shriner (2008) taught six second- through fifth-graders with EBD and at risk for EBD to use the POW + TREE strategy to write persuasive essays. Students in this study were largely served in inclusive classrooms and taught individually. Students improved on overall essay quality and number of words written at postinstruction, although maintenance and generalization findings were mixed. More recently, Mason, Kubina, Valasa, and Monger (2009) extended the persuasive essay instruction to a quick-write strategy. In this situation, students were required to plan and write persuasive essays within 10 min. Five middle-school students with EBD participated in the POW + TREE and quick-write instruction. Results of the multiple-baseline design study revealed some variability in student performance with respect to number of words and story elements included. However, overall, findings appeared very promising.

Finally, of direct relevance to the present study, Mastropieri et al. (in press) described a

mixed-methods study using the SRSD approach to teach persuasive essay writing to eighth-graders with EBD who attended a public day middle school for students with EBD. These students, who were racially and ethnically diverse, exhibited very serious emotional and behavioral challenges compared with student samples described in the previous studies. For example, all students had comorbidity of disabilities, including serious internalizing (depression, anxiety) and externalizing (aggression) behaviors in conjunction with learning disabilities, autism, or language impairments. Because of these differences, this investigation was undertaken to gather descriptive data about systematic writing instruction using the POW + TREE strategy for this population. Given the severity of behavioral issues, instructional procedures were continually modified throughout the instructional period to ensure student success and to provide insights for future research. Instruction occurred during a schoolwide 30-minute remediation period from October through February, for a total of 55 instructional sessions. Results revealed that all students improved considerably from preintervention to postintervention and maintenance testing on the Woodcock Johnson Writing Fluency subtest, essay quality, and number of words written. Although these findings were promising, the amount of instructional time required was significantly longer and more intense than reported in previous investigations, and because of the exploratory nature of the mixed-methods design, there was no comparison condition.

Literature to date provides preliminary support for the use of SRSD as an effective strategy for improving writing in students with EBD; however, that evidence is based on a small number of studies, most of which are with elementary students with, or at risk for, EBD, served largely in general education classes and taught in one-to-one settings. Only a single investigation (Mastropieri et al., in press) targeted students at the middle school age with serious EBD, and that study lacked a comparison condition. The present investigation, therefore, was intended to draw on the insights gained from the previous investigation and to replicate and extend that previous work by incorporating an experimental multiple-baseline design and by adding a fluency component as a second instructional phase, as in the Mason et al. (2009) study. This study took place in a separate school setting for

students with serious emotional disabilities and, like the previous investigation, involved direct, daily classroom interaction with the students over an extensive time period.

### Research Questions

Specifically, the research questions addressed in the current investigation were the following:

1. Can the SRSD model of instruction for the POW + TREE persuasive writing strategy, used successfully in previous research with students with learning disabilities, be adapted for middle-school students with serious EBD served in a separate setting?
2. Once students master the SRSD POW + TREE strategy effectively, can students be taught during a fluency phase to implement the same strategy quickly?

## Method

### Students

Students, who were classified as having serious emotional disabilities, all attended a public day middle school for students with significant behavioral and emotional needs. The range of student emotional and behavioral issues included depression, bipolar disorder, thought disorders, anxiety, oppositional defiant disorders, antisocial behavior, and attention deficit hyperactivity disorder. *Table 1* presents student characteristics. Fifteen eighth-grade students classified as having serious emotional disabilities were participants. The building administrators selected these students because they were the lowest performing writers in the eighth grade. The sample included 14 boys and 1 girl. Three students were dropped from the study. Two students were expelled from school within the 1st month of data collection. Another student was excluded because he was assigned to in-school suspension so frequently that he was unable to participate in the instruction. The remaining 12 students (11 boys), who were an average of 13.9 ( $SD = 0.53$ ) years of age, participated in the entire study.

Students' pretest writing levels were generally well below the eighth-grade level. The Woodcock Johnson Writing Fluency subtest of the Woodcock Johnson III Tests of Achievement (WJ-III; Woodcock, McGrew, & Mather,

2001) was administered to all students during baseline. Mean grade-level performance was 4.6 ( $SD = 2.5$ ). Other academic test scores were also generally low and well below eighth-grade level. School records identified all students as needing assistance on written communication skills. Written essay performance, as assessed by the mean essay baseline scores (see *Table 2*), was also low.

### Setting

The setting for the investigation was a specialized middle school exclusively for students with EBD, in a large public school district in the eastern United States (see Mastropieri et al., in press, for a comprehensive description). This school represented the most restrictive environment in the public school district of more than 100,000 students. All classes were taught by special education teachers and paraprofessionals, who received training in the systematic schoolwide behavior management system. School counselors were also present to provide counseling services to students when needed. Class sizes ranged from 3 to 10 students per teacher and assistant. All students participated in four core academic classes (English, science, math, and history), as well as physical education and two elective classes each day. All students in this school participated in statewide high-stakes testing, and their scores were sent to their home schools. Approximately 100 seventh- and eighth-grade students were enrolled in the school. Of those enrolled, approximately 81% were male and 19% were female. The sample was racially and ethnically diverse with 45.9% Caucasian, 27.1% African American, 17.7% Hispanic, 3.5% Asian, and 5.9% from other racial/ethnic groups. Forty-eight percent of the students received free and reduced lunch, and 22.4% were characterized as limited English proficient.

A positive behavioral support system, using a point system and daily vouchers (point recoding sheets), was employed consistently throughout the school. Vouchers were individualized to identify idiosyncratic target behaviors for each student; overall, students could earn points for preparedness, participating positively in classroom activities, appropriately asking for and accepting help, respecting others and respecting property, and promoting emotionally and physically safe conduct. Vouchers were completed at the end of every class period by teachers, who discussed with students why

**TABLE 1**  
**Student Characteristics**

Student	Gender	Ethnicity	Age (Years, Months)	Special Education Categories	Behavioral Goals	Test Scores
Evan	Male	Hispanic	14.50	ED, LD, ESOL	Stress reduction strategies	WISC IV; VCI 83; PRI 94; WMI 62; PSI 73; Full Scale = 75; WJ Broad Written Language 78
Jay	Male	Caucasian	13.40	ED, LD	Following directions, improve class participation	WISC III; V 88; P 91; Full Scale = 88
Bob	Male	Caucasian	13.10	ED, LD	Coping	WISC IV; VCI 112; PRI 96; WMI 97; PS 78; Full Scale = 96; WJ Broad Written Language 69
Ron	Male	African American	14.0	ED, LD, OHI	Self-awareness, coping skills	WISC IV; VCI 87; PRI 94; WMI 65; PSI 75; Full Scale = 77; WJ Broad Written Language 68
Sally	Female	African American	13.10	ED, OHI	Self-awareness and coping skills	WISC IV; VCI 87; PRI 82; WMI 97; PS 80; Full Scale = 82; WJ Broad Written Language 80
Mark	Male	African American	13.80	ED, LD, OHI	Self-advocacy, following directions	WISC III; VA 97; PA 95; Full Scale = 95
William	Male	African American	14.70	ED	Class participation, following directions	WISC IV; VCI 95; PRI 108; WMI 88; PS 94; Full Scale = 95; WJ Broad Written Language 80
Malcolm	Male	African American	13.20	ED, OHI	Work independently, decrease attention-seeking behaviors, follow directions	WASI; VA 98; PA 104; Full Scale = 101; WJ Broad Written Language 80
Sam	Male	Hispanic	13.30	ED, LD, SPL, ESOL	Follow directions, coping strategies	RIAS; VI 63; NI 89; CI 74; CMI 75; WJ Broad Written Language 62
Otto	Male	Hispanic	14.70	ED, LD, ESOL	Self-advocacy, coping strategies, attendance	WISC IV; VCI 96; PRI 79; WMI 97; PS 103; Full Scale = 90; TOWL-3 Overall Writing 67
Matthew	Male	Hispanic	14.60	ED, LD, ESOL	On task, follow directions	WASI; VA 73; PA 85; Full Scale = 76; WJ Broad Written Language 71
George	Male	African American	13.60	ED, LD	Coping strategies, attendance	RIAS; VI 65; NI 98; CI 81; CMI 54; WJ Broad Written Language 86

Note. ED = emotional disabilities; ESOL = English for Speakers of Other Languages; LD = learning disabilities; OHI = other health impairments; WISC IV = Wechsler Intelligence Scale for Children—fourth edition (Wechsler, 2003); VCI = Verbal Comprehension Index; PRI = Perceptual Reasoning Index; WMI = Working Memory Index; PSI = Processing Speed Index; WISC III = Wechsler Intelligence Scale for Children—third edition (Wechsler, 1991); V = Verbal IQ; P = Performance IQ; Full Scale = Full Scale IQ; RIAS = Reynolds Intellectual Assessment Scales Full Scale (Reynolds & Kamphaus, 2003); VI = Verbal Intelligence Index; NI = Nonverbal Intelligence Index; CI = Composite Intelligence Index; CMI = Composite Memory Index; WJ Broad Written Language = Woodcock Johnson Broad Written Language; WASI = Wechsler Abbreviated Scale of Intelligence (The Psychological Corporation, 1999); VA = Verbal Reasoning; PA = Performance; TOWL-3 = Test of Oral Written Language (Hammill & Larsen, 1996).

points were or were not awarded. Points earned daily could accumulate over time, and students could use these points to earn privileges and participate in special activities at the end of the week. In addition, students could be awarded WOW tickets for performing exceptionally well academically or behaviorally. WOW tickets could be exchanged for privileges and rewards at the end of the week.

The school also employed time-out procedures (Lewis, Lewis-Palmer, Newcomer, & Stichter, 2004), implemented when students were experiencing extreme behavioral problems. When students were especially volatile, they were provided with "flash passes," which could be used at any time to go to the Crisis Response Center (CRC). Students were sent to CRC for fighting, drugs, gang-related activities, racial comments, stealing, or sexual comments. When this happened, students met with the CRC counselor who determined whether school detention or suspension was warranted. In-school detention and suspension also were provided in the CRC.

### **Project Staff**

Project staff included a team of 10 individuals from the local university who worked in the school extensively throughout the entire project. Three faculty (all Caucasian, two female and one male) and six advanced graduate students, all female (four Caucasian, two Hispanic) who had an average of 10 years of teaching experience working with individuals with disabilities, were an average of 37 years of age. In addition, two female Caucasians were observers.

### **Materials**

All materials were based on the SRSD model and had been used during the previous study (Mastropieri et al., in press) but were modified and adjusted to meet the needs of the present sample of students. Original materials were based on Mason and Shriner's (2008) work, in which materials provide support to students in planning, organizing, and writing. In addition, self-regulation training in goal setting, self-instruction, and self-monitoring are embedded within the instructional materials (see Harris et al., 2008). In this case, a persuasive essay-writing strategy was taught, employing the acronym POW + TREE, in which P = Pick my idea, O = Organize my notes, W = Write and say more, and T = Topic sentence (tell what you believe), R =

Reasons (write three or more with explanations; why do I believe this and will my readers believe this? And E = Ending (wrap it up). Students were also encouraged to Examine (do I have all my parts?).

*Student materials.* Student materials included individual student folders that contained all student materials used throughout the project, including a student contract for learning, a POW + TREE chart containing all steps in the strategy, a transition word chart, a graphic organizer of the POW + TREE strategy, a self-statement sheet that was used to help students reflect on ways to think of good ideas, what to think while working, and when checking their work and self-evaluation and self-monitoring charts. Completed student essays were also kept in the folders

*Training materials and procedures.* Teaching materials included all student materials as well as detailed notebooks containing all lesson plans for learning how to implement the POW + TREE strategy based on those implemented in previous research (e.g., Mason & Shriner, 2008). Steps in the instructional sequence included the recommended SRSD stages of instruction, such as developing background knowledge and discussing it, modeling the strategy, memorizing the strategy, supporting the strategy with guided practice, and independent practice.

All teaching and project staff met together for training with experts in SRSD instruction. During this training, all materials from the lesson plans and notebooks were described, and videotaped model lessons from previous research studies were viewed. Instructors roleplayed implementing lessons until criterion performance in implementing SRSD was obtained by all project staff. During instruction, it became necessary sometimes to modify lessons based on student performance. When this happened, changes were discussed and shared electronically and in person with all staff. An electronic Web site was used to house copies of all lesson plans and any subsequent changes. Project staff met daily to review SRSD components, along with student performance and progress. Project staff also met periodically with building administrators to review student performance data.

### **Procedures**

After obtaining relevant Institutional Review Board approvals from the university, district,

administrators, students, and parents, the baseline phase was started in all groups. Next, instructional lessons began in each of the four instructional groups staggered over time, followed by postintervention essay testing. Immediately following postinstruction testing, the fluency phase was implemented, which was followed by post-fluency phase testing. Beginning 11.5 weeks later, students were administered surprise maintenance and generalization essay probes. Instruction occurred approximately 4 days per week, from September through February, during a 30-minute schoolwide remediation period for a total of 55 sessions, or a total of 29 hours of instruction over more than 4 months. Individual students received a mean number of 43.3 ( $SD = 4.1$ ) days of instruction, with a range of 36 to 49 days. When students were not present in class for instruction, they were frequently in school, but participating in other activities, such as the school CRC, school suspension, play practice, meetings with mentors, student council association meetings, or meetings with other teachers.

The model of SRSD instruction was implemented to teach students how to write persuasive essays. The first day of instruction, the teacher introduced the study, explained what would happen, and presented students with learning contracts to sign. The "Writing to Persuade Learning Contract" contained students' names, the date with target completion dates, the goal, how to meet the goal, signatures of both the student and teacher for the initial contract, completion dates and signature lines for students and teachers when instruction was successfully completed.

*SRSD instructional procedures.* The SRSD instruction included the six phases of instruction: Develop Background Knowledge, Discuss It, Model It, Memorize It, Support It, and Independent Performance, while emphasizing throughout self-regulation, independent use, and student ownership. The instructional goal was to have students internalize self-regulation strategies to write persuasive essays independently. Initially, instruction and lessons were teacher directed. However, instruction was carefully scaffolded to have students gradually gain ownership of the strategy. During Phase 1, students acquired the knowledge for using the POW + TREE strategy to write persuasive essays. The POW component consisted of a general planning and organizing strategy, whereas the TREE component provided specific steps for writing a persuasive essay. Students

practiced learning the planning and writing strategy acronym and what it represented, and they discussed background knowledge. During the second stage of instruction, Discuss It, students continued with learning the specific acronym of POW + TREE, remembering what each component represented. Sample persuasive essays were reviewed, and students practiced identifying sections of model essays.

During the third stage of instruction, Model It, the teacher modeled the entire planning and writing process using self-statements and the graphic organizer. The teacher modeled think-aloud self-statements while she planned out each step involved in using POW + TREE from selecting the topic, to generating ideas for the organizer, to beginning writing. For example, the teacher used statements such as, "What do I believe?" "What is the next step I have to do?" "Did I answer all the questions?" and "I like that idea," to model planning, self-evaluation, and self-reinforcement throughout the process. Students also completed their own self-statement charts that could be referred to during subsequent lessons. During the planning, a large graphic organizer was placed on the board, and students assisted with generating ideas that were written on the organizer. Goal setting was also introduced, and students were taught that part of the goal for persuasive essay writing was to ensure that all components (topic sentence, three or more reasons, explanations for reasons, and ending) of the essay were completed.

Teachers also discussed and modeled organizing the persuasive essays into relevant paragraphs. Students were taught to write paragraphs, using the graphic organizer as a guide. The first sentence of each paragraph began with a transition word and stated a reason. Then, students were taught to write two to four sentences explaining the reason. Each paragraph followed this formula.

During the fourth stage of instruction, Memorize It, students demonstrated that they had learned what the strategy steps were for writing persuasive essays. In this case, all students were required to state POW + TREE and describe what each component represented.

The fifth stage of instruction, Support It, consisted of collaborative writing. During this stage, students worked collaboratively with the teacher, and writing was monitored by both students and teacher. Initially, the small groups selected an essay prompt from two options; students later selected their own essay prompt

from two options. During instruction, project staff made continuous modifications and adjustments based on the individual emotional, behavioral, and learning needs of students.

During the sixth and final stage of instruction, students transitioned into independent writing performance. During this phase, students wrote complete essays without the use of the graphic organizer, transition word charts, and other prompts.

*Fluency instruction.* During the fluency phase, students were taught to use all of the steps previously learned for planning and writing persuasive essays more quickly. These procedures were based on those developed by Mason (2009) and Mason et al. (2009) for teaching quick-write writing skills. Teachers modeled the procedure and guided students through essay completion within a short time period. Students were told that it was acceptable to have only a single paragraph in this response but that all the other components, such as a topic sentence, three or more reasons, explanations, and an ending were required components. Self-monitoring checklists tailored to student-specific needs were created for students to monitor their progress during the fluency phase. For example, specific student goals included having five sentences per paragraph or including periods at the ends of sentences. Teachers used timers during the modeling and collaborative practice of fluency lessons to demonstrate how the same strategy (POW + TREE) could be used to plan and write a shorter, but very comprehensive, response all within 10 min. Timers were used during the student independent practice lessons as well. Students completed their self-monitoring checklists after checking their essays.

*Schoolwide positive behavioral support procedures.* The schoolwide behavior systems were integrated within the SRSD instruction throughout the study. Because project staff functioned as classroom teachers for the writing class, they were responsible for consistently implementing the positive behavior support and reinforcement systems. For example, staff completed student daily performance reviews and awarded voucher points daily. In addition, they were responsible for awarding WOW tickets for exemplary student academic and/or behavior. Staff awarded these WOW tickets based on individual student performance either at the end of the class periods or throughout the period. For example, students were awarded WOW tickets for com-

pleting writing their essays or interacting in a socially appropriate way during class participation activities. Flash passes, which could be used by students to go to the CRC voluntarily, were used on a more inconsistent basis. Some students used flash passes fairly more frequently, especially during the initial phases of instruction, whereas other students never used them. For example, one student in particular used the pass a couple times per week during the first month of instruction but less frequently later on. In one instructional group, however, students requested self-timeouts three to four times a week.

*Treatment fidelity.* This intervention study was implemented during 55 school days over a period of 5 months. Instructors were highly skilled educators with expertise in teaching using SRSD instructional procedures and in working with students with EBD. One third of the sessions were observed for treatment integrity. It was decided to use the amount of lesson plan covered during each class period as the basis for each recording sheet. This enabled project staff to be able to revise and reteach as necessary, as indicated in the general SRSD instructional procedures. Observers used checklists designed to match the lesson plans that contained all lesson elements to record a measure of treatment fidelity.

### **Data Sources, Administration, and Scoring Procedures**

*Woodcock Johnson Writing Fluency subtest.* All students were pretested and posttested on the Writing Fluency subtest of the WJ-III (Woodcock et al. 2001). Tests were administered and scored according to the directions and guidelines in the WJ-III manual.

*Writing prompts and essay parts.* Essay probes were administered at baseline, post-intervention, postfluency, maintenance, and generalization. Students received five essay probes during postintervention and postfluency and a minimum of five essay probes during baseline. Students who were in later instructional groupings received one to three additional essay prompts during their extended baseline conditions. Maintenance and generalization probes were also administered beginning after 11.5 weeks following the fluency phase. Each time, students were provided two prompts and asked to select one for their essay. Many of these writing prompts were used in the Mastropieri et al. (in press) study; addi-

tional prompts were designed to accommodate the number of prompts required for the duration of the study. All writing prompts were reviewed for readability and interest level suitable for this population of students. Identical procedures were employed when administering the writing prompts during baseline, postintervention, and postfluency. During baseline and postintervention, students were provided as much time as they needed to complete their persuasive essays. During the postfluency phase, maintenance, and generalization testing, students were provided 10 min to plan and write their essays. In addition, during baseline and intervention, students were asked to name the parts of a persuasive essay.

*Essay scoring.* Each essay was scored using a holistic rubric with a scale from 0 to 10 and scoring rules. A score of 0 was awarded for no essay parts and 10 for a complete essay. Anchor essays, representing all possible scores, were used as reference essays. Essays worth 10 points had to include the following components: (a) topic sentence; (b) more than three reasons with explanations; (c) ending sentence; (d) a logical sequence of writing, including more than one counter argument; and (e) overall essay coherence. In addition, each essay was scored by number of words, paragraphs, transition words, and parts of the essay, including topic sentence, each reason, each explanation, and an ending sentence. Fewer points were awarded when elements above were missing. For example, essays received nine points if they had all of the above but only one counter argument; eight points were awarded with no counter argument. The parts of a persuasive essay were also tallied, with one point awarded for each correct part named. Independent scorers, who were paid project staff, read and scored each essay and essay parts individually. Scorers met to assess interrater reliability and discussed disagreements until they were resolved. The resulting interrater reliability was 98%.

*Strategy interviews.* Following all instructional phases and testing, students were interviewed regarding their perceptions of instruction and knowledge of the strategy. This was completed to determine students' acceptability of the intervention and generalized use of the writing strategies.

*On-task behavior.* A time-sampling procedure (Alberto & Troutman, 2008) was used to record students' on- and off-task behaviors during 30-second intervals for 15 minutes dur-

ing approximately one third of the instructional sessions. Student attention to task was operationally defined as the following: (a) in designated area of room, (b) engaged with appropriate materials, (c) reading/writing to the writing prompts, (d) asking relevant question(s), and (f) may appear in thought by intermittently and quietly looking away from material (engaged only with self not with others).

*Continuous record and observational data sources.* Throughout the study, continuous record data were collected to document student behavior in response to instruction (Mastropieri & Scruggs, 2002). Video cameras were employed frequently to supplement observations. Videotapes were used to review instructional procedures implemented, to further analyze student behaviors for use in daily lesson planning, and to verify direct observations and anecdotal field notes. However, videotapes were not used for any other analyses. Instructors wrote daily teaching logs to document lessons covered as well as student performance. In addition, fidelity of treatment was collected to document instruction integrity. Student written products were collected and reviewed.

## **Experimental Design and Statistical Analyses**

A multiple-baseline design across participants with multiple probes during baseline was implemented to assess the instructional effects across four groups of students (Kennedy, 2005). The lowest performing eighth-grade writers with EBD attending a public day middle school for students with EBD were identified by the administrators based on school assessments, including high stakes test results and academic grades. Those students were then placed into one of four instructional groups (group size = 3–4) based on writing ability. Group 1 contained the students with the lowest writing performance, and Group 4 contained students with the relatively highest writing performance. Groups were then randomly assigned intervention starting dates to conform to randomization test procedures (Todman & Dugard, 2001). This resulted in four legs of replication of the instructional procedures by each of the four groups. Baseline consisted of typical instruction for the eighth graders during that scheduled remediation period, which included instruction in basic skills, emphasizing math, and there was no explicit instruction in writing essays. During



the baseline phase, each student received a minimum of five baseline essay probes. During the intervention phase, instruction was delivered by one of the trained graduate research assistants described earlier. Each student received five essay parts probes during the intervention phase. After reaching criterion performance on writing persuasive essays, five postinstruction essays probes were administered, which was followed by the fluency instructional phase. Five postfluency phase probes were then administered. Maintenance and generalization probes were administered beginning 11.5 weeks after the fluency testing. A couple of students received the maintenance and generalization probes up to 15 weeks postinstruction because of challenges involved in scheduling the testing sessions. Students were also interviewed regarding their perceptions of the usefulness of the writing strategy instruction.

This design allowed for 12 replications between baseline and postintervention, and between baseline and postfluency, and 11 replications between baseline and maintenance and generalization. One student was unavailable for maintenance and generalization testing because he had been expelled from school. Data were analyzed using traditional multiple-baseline analysis procedures using visual inspection for level, stability, and trends (e.g., Kennedy, 2005). Percentage of nonoverlapping data points (PND) between baseline and intervention phases were calculated to determine the PND outcome effect (Scruggs, Mastropieri, & Casto, 1987). Mean changes were also calculated and statistical tests were computed between baseline and other phases using nonparametric tests. Effect sizes were also computed between phases. Finally, randomization tests (Kazdin, 1984) were computed and based on randomization procedures in the design, in this case, randomly assigning groups to intervention start dates. The randomization test yields an exact probability based on calculations of baseline-treatment mean differences of the data with randomly selected sequences of data (Scruggs, Mastropieri, & Regan, 2006; Todman & Dugard, 2001).

## Results

This investigation was implemented over a considerable portion of the school year and involved ongoing data collection using a variety of measures. Results are reported in the following sections: (a) treatment fidelity; (b) on-task behavioral and continuous record

data; (c) standardized writing measures; (d) writing performance at baseline, postintervention, postfluency instruction, and maintenance and generalization testing; (e) writing performance and on-task analyses; and (f) social validity, including student interviews and strategy usage information.

### Treatment Fidelity

Examination of treatment fidelity checklists indicated that the instruction had been delivered with a high degree of fidelity ( $M = 98$ ; range = 95%–100%). When individual lesson components were not covered, it was due to lack of time during a particular lesson. For example, it may have taken teachers and students longer to complete all target lesson steps than originally anticipated. When this occurred, the next lesson began with a daily review and started with the concluding lesson component from the previous day. When fidelity was examined taking that into account, all lessons were delivered adhering to lesson plans with a high degree (100%) of fidelity.

### On-Task Data

Students were observed throughout the investigation for on-task behavior. Across all instructional groups, 52 days of observation were implemented, and reliability of observation was assessed in 42% of the instances. Reliability of observation was assessed at 94% ( $SD = 6.8$ ) agreement. Overall, it was noted that the proportion of on-task behavior was less than desirable ( $M = 72\%$ ;  $SD = 9.9\%$ ; range = 57%–88%) during the time students spent in class.

Some students exhibited extreme difficulties maintaining attention and working efficiently during instruction because of the nature of their specific emotional challenges. For example, one student, who demonstrated signs of depression, had trouble concentrating during instruction. He was consistently disengaged, frequently refused to write, and was often absent from school. Another student's anger and lack of conflict management skills affected his attention to instruction. For instance, if he had experienced a behavioral incident in a previous class period, he typically dwelled on it for the rest of the day. When that happened, he would refuse to write or even talk, and he just seemed to shut down. Another student's hyperactivity and lack of behavioral control interfered with his ability to attend to instruction. For instance, some days he

**TABLE 2**  
**Essay Results**

	<b>Baseline Mean (SD) (N = 12)</b>	<b>Postintervention Mean (SD) (N = 12)</b>	<b>Postfluency Mean (SD) (N = 12)</b>	<b>Maintenance Mean (SD) (N = 11)</b>	<b>Generalization Mean (SD) (N = 11)</b>
Number of words	21.92 (10.78)	108.37 (50.39) <sup>a</sup> ES = 1.72 <sup>b</sup>	93.47 (32.28) <sup>a</sup> ES = 2.22	79.64 (48.77) <sup>a</sup> ES = 1.18	75.09 (48.55) <sup>a</sup> ES = 1.14
Number of parts	1.87 (0.66)	5.57 (2.13) <sup>a</sup> ES = 1.74	5.77 (1.58) <sup>a</sup> ES = 2.47	5.0 (2.40) <sup>a</sup> ES = 1.30	3.91 (2.95) <sup>c</sup> ES = .74
Number of paragraphs	0.17 (0.28)	1.43 (1.45) <sup>a</sup> ES = .87	0.95 (0.51) <sup>a</sup> ES = 1.53	0.82 (1.17) <sup>a</sup> ES = .56	0.73 (1.19) ES = .51
Number of transition words	0.73 (0.36)	4.2 (2.17) <sup>a</sup> ES = 1.60	4.55 (1.55) <sup>a</sup> ES = 2.46	3.36 (2.50) <sup>a</sup> ES = 1.05	2.45 (2.01) <sup>c</sup> ES = .90
Quality scoring	1.71 (0.59)	4.33 (1.76) <sup>a</sup> ES = 1.49	4.48 (1.25) <sup>a</sup> ES = 2.22	4.27 (2.20) <sup>a</sup> ES = 1.16	3.36 (2.42) <sup>c</sup> ES = .71

<sup>a</sup>Significantly greater than baseline,  $p < .01$ , according to the Wilcoxon matched-pairs, signed ranks test.

<sup>b</sup>Effect sizes were computed using all relevant postmeasure standard deviations due to apparent floor effects in baseline measures.

<sup>c</sup> $p < .05$ , according to the Wilcoxon matched-pairs, signed ranks test.

would be especially active; those days he would play with his desk, make loud comments, or walk around the room. Over time, this student began to have more self-regulation skills and recognized when a self time out was necessary, rather than having the teacher administer a time out to calm down. Finally, one student who also had learning disabilities exhibited extreme frustrations when required to organize his ideas in writing. When frustrated, he frequently became oppositional, refused to write, talked aloud, and distracted other classmates with conversation. Given the established relation between academic time on task and academic achievement (e.g., Mastropieri & Scruggs, 2004), this level of academic engagement clearly played an inhibiting role in instruction and contributed significantly to the amount of instructional time for students to reach mastery.

### Standardized Tests

Students made statistically significant gains on standardized scores of the fluency subtest of the WJ-III, with pretest means of 75.8 ( $SD = 17.9$ ) and posttest means of 84.8 ( $SD = 4.2$ ). These gains were statistically significant,  $t(11) = 3.55$ ,  $p = .005$ , resulting in a strong effect size of .81, and indicating real growth with respect to the normative sample.

### Writing Performance

*Baseline.* During baseline, none of the students appeared to complete any planning or

organizing prior to writing essays. As can be seen in *Table 2*, the overall mean number of words written was 21.9; essays contained fewer than two components, were less than a paragraph in length, and contained less than one transition word per essay. Quality scores were also generally very low with a mean of 1.71 at baseline. Similar patterns emerged when these data were examined by student and instructional group, in that each and every student was consistently low in performance across all baseline measures. The range of number of words written was 7.4 to 38; the mean number of sentences ranged from one to two, with one student writing three sentences. No students wrote any paragraphs at baseline. The number of transition words written ranged from less than 1 to 1.2, and the number of essay parts ranged from less than 1 to 2.6. The data by instructional group are presented in *Figures 1 and 2* for overall essay quality and number of essay parts.

*Knowledge of parts of a persuasive essay.* During baseline and intervention phases, students were periodically asked to name the parts of a persuasive essay (topic sentence, three reasons or more, explanations, and ending). During baseline, all students' performance was low and responses were scored to have less than one essay part on average. During the intervention training, students were administered probes on their knowledge of parts of a persuasive essay. This was done to determine whether students had mastered the knowledge of the required essay components

and to provide a measure of performance during instruction, without requiring students to write essays independently before mastering the strategy. These data are displayed graphically in *Figure 1*. As can be seen, during intervention, students were gaining in knowledge of the components of a persuasive essay and could correctly recall all persuasive essay parts by the fifth probe.

*Postintervention.* All students gained significantly in their ability to write persuasive essays. These results are supported by the 100% PNDs by instructional group as displayed in *Figures 1 and 2* for overall quality of essay and number of essay parts. Students' postintervention essay scores indicated large and consistent increases over baseline scores on measures of number of words written, number of essay parts, number of paragraphs, number of transition words, and overall quality of the persuasive essays. All student level changes across phases were high, and there was less variability in writing performance, as evidenced in the postintervention testing. The mean scores across all students were large and statistically significant, as listed in *Table 2* (all  $p$ 's < .01, according to Wilcoxon matched-pairs, signed ranks tests, from baseline to postintervention effects on all measures). Obtained effect sizes were uniformly large, with an overall mean of 1.83 (range = 0.87–2.47). Moreover, randomization tests (Todman & Dugard, 2001) from baseline to postintervention yielded statistical significance ( $p = .000$ ) in all cases, indicating a high probability of a systematic (i.e., nonchance) relation between onset of intervention and change in writing performance.

Individual student performance paralleled group performance data, in that each and every student improved from baseline to postintervention in number of words, sentences, paragraphs, transition words, and essay parts and in the quality of essays written. Graphic representations by student are displayed in *Figures 3 through 6*. As can be seen, some students greatly increased the number of words written from baseline to postintervention, such as William (26.6 to 203.4 words), Sally (24.2 to 113.8 words), George (38.8 to 154.4 words), and Ron (12.4 to 84.2 words). Even the overall lowest performing writers at baseline made substantial improvements, as evidenced by increases of 7.4 to 34 words (Mark), 11 to 85.2 words (Sam), 22 to 59 words (Evan), and 13 to 102.6 words (Matthew). All

other students also demonstrated higher gains than the lowest performers in the total number of words written by postintervention measures (see *Figure 3*).

Students improved on essay components from baseline to postintervention measures as well. Several students made very large gains in the number of sentences written from baseline to postintervention. For example, William, Bob, and Malcolm all wrote 1 or 2 sentences at baseline but produced from 13 to 18 sentences at postintervention. Other students also improved from writing one sentence or fewer at baseline (Jay, Ron, Sally, Sam, and Otto) to six sentences at postintervention.

Number of essay parts and quality of persuasive essays improved considerably for all 12 participants. At baseline, all students obtained uniformly low scores, but by postintervention testing had significantly improved. As seen in *Figure 5*, all students' written persuasive essays contained more critical essay elements on postinstruction measures. William increased from two to nine essay parts, Bob and Malcolm increased from three to eight, and Sally increased from two to seven parts. The majority of students made gains from one to five additional essay parts (e.g., George, Sam, Jay, Matthew, and Ron). Even the lower performing writers made substantial improvements. For example, Evan and Mark wrote an additional essay part in their essays at postintervention.

Quality scores improved significantly from baseline to postintervention measures; all students improved from baseline to postintervention measures. The largest gains were obtained by William, Bob, and Sally, who gained five, five, and four quality points, respectively. Other students also improved in overall essay quality, with gains ranging from two to three quality points. Even the lowest performers, Evan and Mark, each gained one quality point by postintervention (see *Figure 6*).

*Postfluency.* All students improved significantly from baseline to post-fluency instruction on all writing measures. All fluency data were statistically significantly higher than baseline data according to Wilcoxon matched-pairs, signed ranks tests (all  $p$ 's = .002). These data are displayed graphically in *Figures 3 through 6* by student and overall in *Table 2*. Data are compared with baseline measures because there was a 10-minute time limit imposed on the planning and writing. In

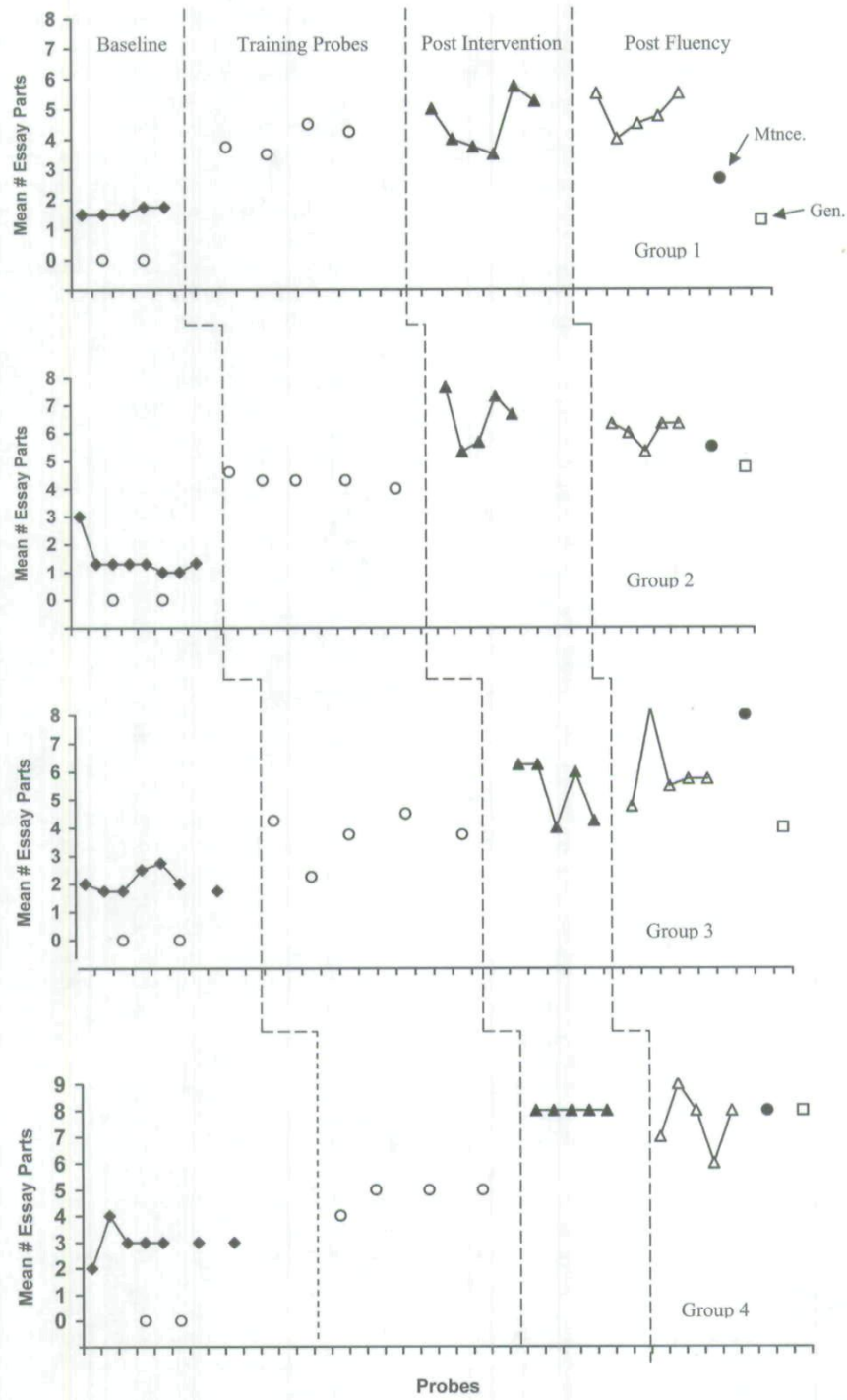


Figure 1. Mean number of essay parts by instructional group by phase: baseline, training probes, postintervention, postfluency, maintenance, and generalization.

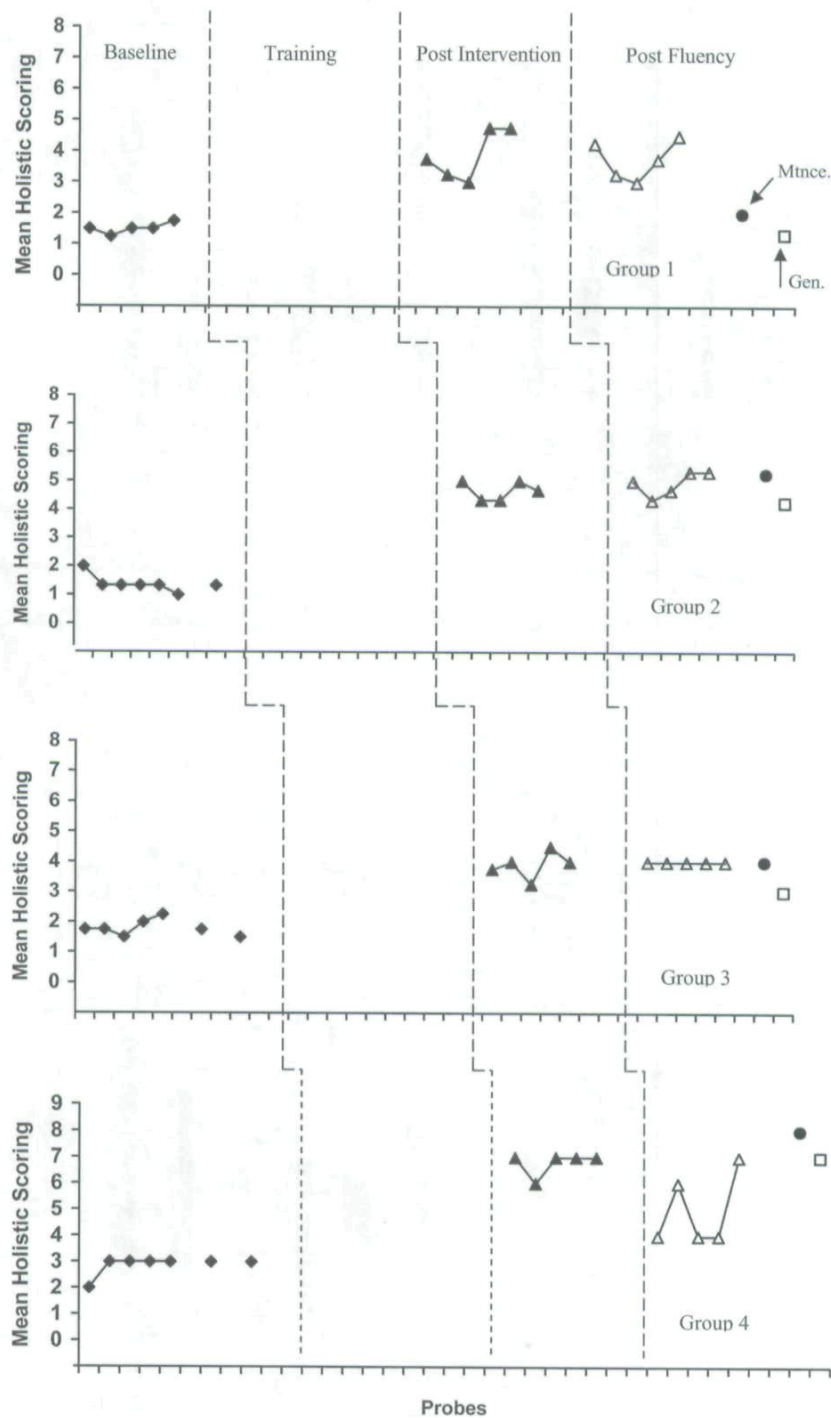
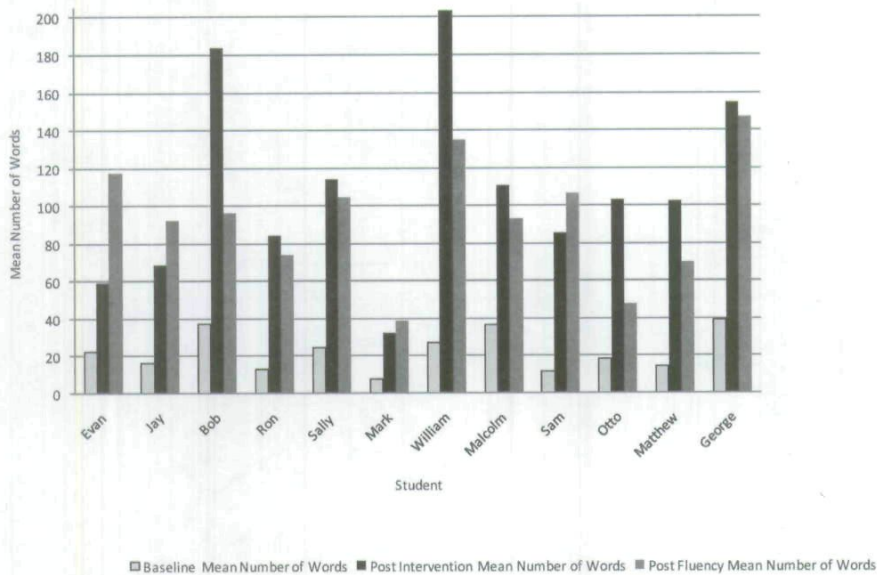


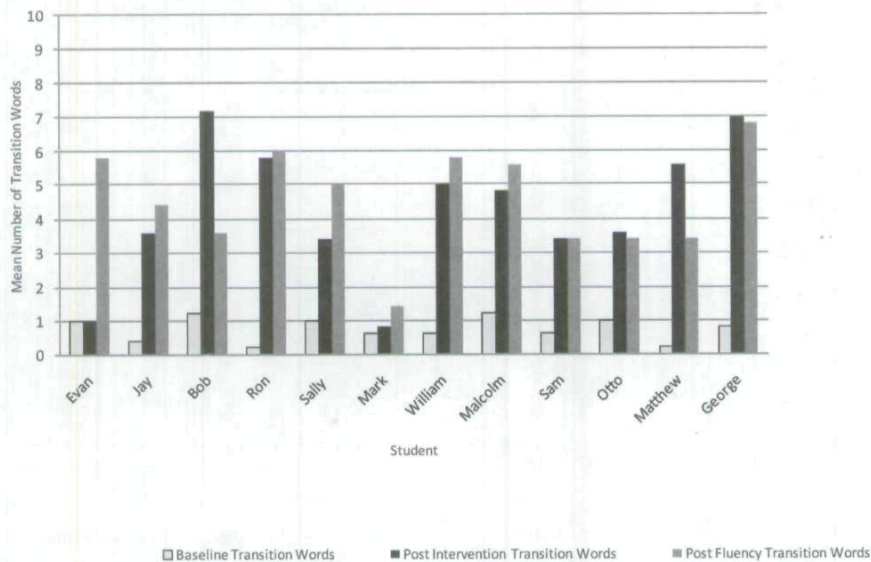
Figure 2. Mean holistic scoring of essays by instructional group by phase: baseline, postintervention, postfluency, maintenance, and generalization.



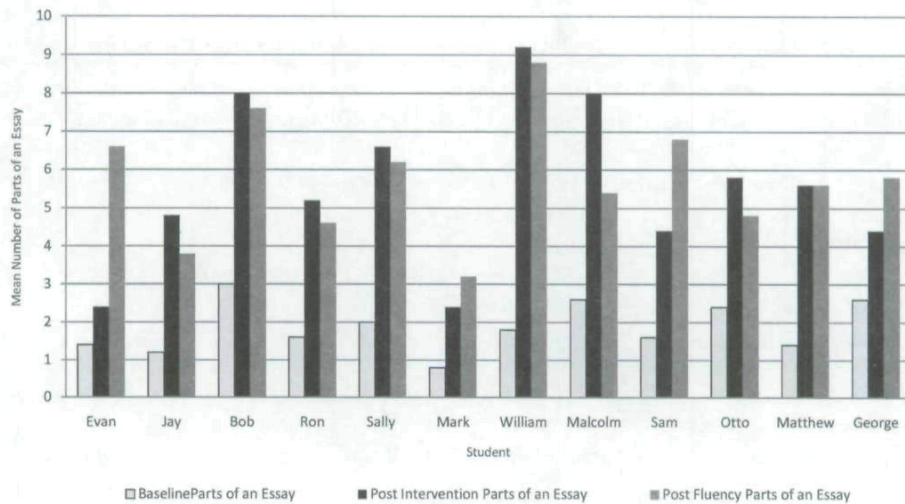
**Figure 3.** Mean number of words by student by baseline, postintervention, and postfluency phases.

number of words written overall, students improved significantly over baseline measures during the postfluency testing. The largest improvements over baseline were seen for William (26 to 135), Evan (22 to 118), Sam (11 to 106.2), Sally (24 to 104.2), Bob (37 to 96.2), and Jay (15.8 to 92.4). However, even the

lower performers (Mark, 7.4 to 38.8; Otto, 18 to 47.6; Matthew, 13.8 to 70, and Ron, 12.4 to 74) demonstrated substantial improvements over baseline phases. Interestingly, some students (Evan, Jay, and Sam) not only maintained postintervention levels but also increased in number of words written.



**Figure 4.** Mean number of transition words by student by baseline, postintervention, and postfluency phases.

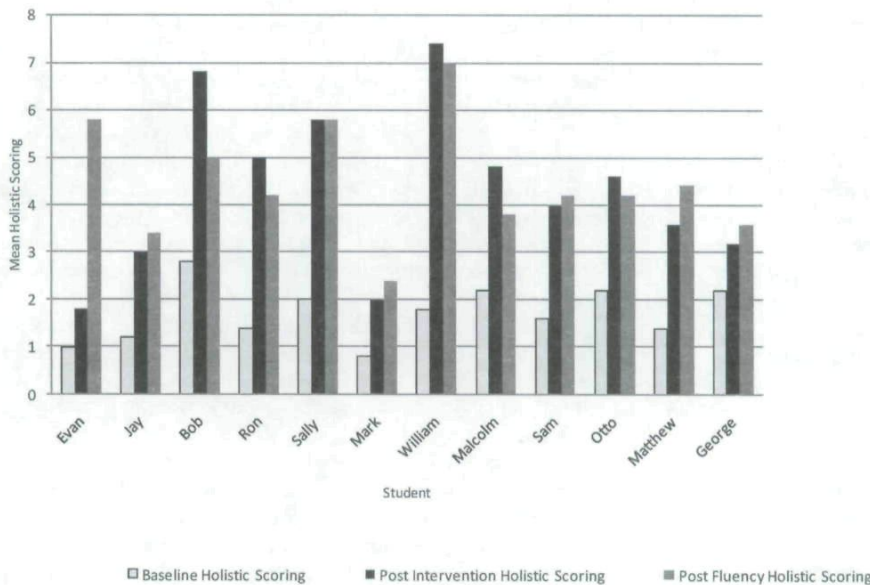


**Figure 5.** Mean number of essay parts by student by baseline, postintervention, and postfluency phases.

Number of essay parts of persuasive essays improved on all postfluency measures as well. Individually, all students wrote persuasive essays that contained more critical essay elements on postfluency measures. William increased from 1.8 to 8.8 in number of parts of the essay, Bob increased from 3 to 7.6, Sam increased from 1.6 to 6.8, Evan increased from 1.4 to 6.6, and Sally increased from 2 to 5.6 over baseline

measures. Evan, who had been a low performer even at postintervention, appeared to increase in his abilities to write more post-fluency instruction. This may indicate that he required additional time to catch on or that the writing during fluency within a shorter time period (10 min) was a more manageable task for him.

Improvements were also observed in overall quality of written persuasive essays.



**Figure 6.** Mean holistic scoring by student by baseline, postintervention, and postfluency phases.

**TABLE 3**  
**Baseline, Postintervention, and Postfluency Writing Samples of a Stronger Performing Student**

<p>Representative baseline essay prompt: Should public school students be required to wear uniforms?</p> <p>Students in public school should not be required to wear uniforms. Students shoed have the rite to whar what tay want, That is waiy I think tha students should not have to wear uniforms.</p>
<p>Representative postintervention essay prompt: Would you rather receive a \$30 gift card as a gift or receive a sweater as a present?</p> <p>I would rather receive money than a sweater. To start money is all ways beter than a sweater. Seconly sweaters are ugly. lastly you can buy what you want.</p> <p>To start money is allways beter than a sweater. Sweaters are unconfebule. Whit money you can buy good close.</p> <p>Second sweaters are ulgy. They have bad paters [patterns] on them. But thay are still not as ugly as a sweate veast.</p> <p>lastly you can buy what you want whit money. You can get what you really what not sum random guse [guess] of it. You can not do that whit a sweater.</p> <p>To counclod [conclude] I would rather receive money than a sweaters. Becuas money is always beater than sweaters. Also sweaters are ugly and you can buy what you want whit money.</p>
<p>Representative postfluency essay prompt: Should students your age be allowed to get their ears pierced without their parent's permission?</p> <p>I think that students under the age of 16 shud not be allowed to get their ears pierced without their parent's permission. To start kids my age shoud not be alod to do stuff like that to ther bodys. Soum thing like that shoud not be aloud to happin to kids my age whitout parental permisshan. Also if the parant say it is ok then it should be ok. If the parants say it is ok than be abol [able] to refuas [refuse] to peas [pierce] a kids ears whis out [without] premishun [permission]. Stors can not let kids get ears perst whit out premishun To conclud [conclude] kid under 16 shud not be abal to get their ears persed whit out permisin from thar parants.</p>

Individually, students made significant performance increases as well. The consistently higher performing writers all demonstrated substantial gains: William, 1.8 to 7; Sally, 2 to 5.8; Bob, 2.8 to 5; and Malcolm, 2.2 to 5.4. Evan, who had been an inconsistent writer, improved from 1 to 5.8 in quality rating from baseline to postfluency performance. All other students demonstrated some postfluency growth over baseline performance. Somewhat surprisingly, several students' quality of essays after fluency instruction was higher than their performance at postintervention testing (see Figure 6).

In addition to the quantitative results of the SRSD intervention as assessed by measures on their essays, some very obvious results of the strategy can be observed in the examination of student written products prior to and subsequent to the instruction and postfluency. These differences were obvious with all students in this investigation. As an example, Table 3 presents illustrative examples of one student's baseline, postintervention, and postfluency essays after instruction in the SRSD POW + TREE strategy and fluency instruction. As can be seen, the very substantial difference in essay length and quality is clearly represented and is similar to the differences observed for all students in this investigation.

*Maintenance and generalization.* Beginning 11.5 weeks following fluency testing,

surprise maintenance and generalization probes were administered to students. One student, who had been expelled, was unavailable for any follow-up testing. Because fluency training was the last instructional phase, it was decided to assess students for maintenance and generalization using the 10-minute assessment period, which paralleled fluency procedures. Although the performance levels were slightly depressed from the fluency phase, overall performance was high and significantly greater than baseline performance. On each scoring measure on the maintenance persuasive essays, students significantly outperformed their baseline performance levels, ( $p$ 's < .05 according to the Wilcoxon matched-pairs, signed ranks test). On the generalization testing, students' scores were significantly higher than baseline on total number of words written, number of sentences written, and number of transition words ( $p$ 's < .05 according to Wilcoxon matched-pairs, signed ranks tests). The number of essay parts and overall essay quality approached significance ( $p$ 's = .059).

Individual student performance varied more considerably during maintenance testing. All students appeared to show strong maintenance effects compared with baseline condition performance. However, when performances were compared with post-fluency instruction, many students' scores decreased



somewhat. Not surprisingly, the highest performing writers appeared to maintain the higher level of performance, whereas the lowest performing writers appeared to decrease more from the postfluency testing phase. For example, William maintained his overall improved writing with 196 words, 17 sentences, and strong overall number of essay elements and quality of essay. Similarly, Bob and George maintained their writing levels, with each writing 112 words, eight and nine sentences, respectively, and maintaining strong performances in persuasive essay elements and quality. Other students appeared to write fewer words, have fewer essay components, and have slightly lower overall essay quality. For example, Sally decreased from 104 to 61 words at maintenance from fluency testing and obtained only four points for her essay elements and overall quality scores. However, these scores were still substantially greater than her baseline performance, when she wrote an average of only 24 words and received only two points for her essay elements and quality.

The students who had been the most inconsistent writers and were lower performing overall appeared to decline the most at maintenance testing. For example, Ray, Sam, and Otto wrote 25, 39, and 36 words, respectively, at maintenance. Although this was an improvement from baseline, when each student wrote on average 12, 11, and 18 words, respectively, these performance levels represented a less than desirable outcome. Similarly, their essay elements and quality were higher than baseline, but their levels declined somewhat from the fluency phase.

Generalization measures were administered to the same sample of 11 students. Although the levels of performance were lower than at postinstruction or postfluency, generalization probes were still above baseline mean levels for all students, with the exception of Ron, who wrote four words fewer on his generalization probe than at baseline. Students' scores were significantly higher than baseline on total number of words written, number of transition words, number of essay parts, and overall essay quality (all  $p$ 's < .05) according to Wilcoxon matched-pairs, signed ranks tests. The highest performing writers were able to generalize their writing to more novel writing prompts, whereas the lower performing writers experienced more challenges. William, Bob, and George wrote 180,

104, and 100 words, respectively. Their essays contained all relevant components and were of generally high overall quality. Conversely, Ron, Sam, and Otto wrote fewer words (12, 52, and 36, respectively) and declined in the number of essay parts and overall essay quality.

*Writing performance and time on task.* Correlations between writing outcome measures and observed time on task were calculated using the Spearman's rho coefficient (Siegel & Castellan, 1988). Overall, correlations with posttest measures were positive but nonsignificant ( $r$ 's = .18-.45; all  $p$ 's > .145). However, two fluency measures were significantly correlated with time on task: mean number of essay parts ( $r = .664, p = .018$ ) and holistic essay quality ( $r = .624, p = .030$ ). In addition, two maintenance measures were significantly correlated with time on task: number of sentences ( $r = .705, p = .015$ ) and number of paragraphs ( $r = .653, p = .029$ ), whereas two generalization measures were significantly correlated with time on task: number of essay parts ( $r = .632, p = .050$ ) and holistic essay quality ( $r = .638, p = .047$ ). Correlations between time on task and an additional three generalization measures exceeded .50 in value and approached, but did not attain, statistical significance: number of sentences ( $r = .567, p = .087$ ), number of paragraphs ( $r = .543, p = .105$ ), and number of words ( $r = .527, p = .117$ ).

### **Social Validity, Student Interviews, and Strategy Reports**

Students were interviewed individually following all instruction to determine their perceptions and knowledge of the POW + TREE strategy, its usefulness, and the POW + TREE lessons. Overall, there was general positive agreement that the SRSD strategy had been effective in improving their writing skills. *Table 4* presents some comments about the writing intervention that specific students reported during the individual interviews.

Students remembered components of the strategy. For example, 75% knew what all of the letters of POW + TREE represented. When asked to draw a graphic organizer, most of the students remembered the major components of the graphic organizer. When students forgot a component, it was the last step, or "examine."

When asked how the strategy had helped them, students most often noted that it helped

**TABLE 4**  
**Interview Comments After the Study**

- 
1. Now I know how to organize everything. I used to write everything in a bundle. (Sally)
  2. I am very glad that you guys came here to help me to write more, to learn how to write POW + TREE. (Sam)
  3. I was really bad at writing.... It taught me a lot. (William)
  4. I used to hate writing, but now I think it's not so bad. Now I pick my ideas before I write and the rest of it is easy. (Mark)
  5. I like writing a little bit more. I can do it. (Matthew)
  6. It taught me how to do stuff correctly so I can teach someone else when I am a teacher. It helped me concentrate and stay on task. (George)
  7. I like that it is faster and easier to write because I get more ideas and can organize it better. The graphic organizer really helped. (Jay)
  8. When writing longer essays, it made it easier to break it up into parts. It helped to organize it so I can write longer essays. (Bob)
- 

them organize their writing. Most students identified the graphic organizer itself as being the most helpful and what they liked best about the strategy. Several students mentioned that they liked the POW + TREE mnemonic strategy the best and that they enjoyed writing essays. Others talked about how the strategy helped them organize their thoughts before writing. Some students stated the strategy assisted them with knowing the order information should be presented in a persuasive essay, rather than just writing. Several students indicated that they were now able to write longer essays, they had better transition words and mechanics, they wrote improved sentences and paragraphs, and they now knew what components to include in a persuasive essay.

Several students said that their favorite thing about the strategy was that it helped them stay focused on a topic throughout their essays. One student, who exhibited extreme difficulties attending, said the strategy helped him to concentrate. Because this student frequently appeared to be in his own world and had trouble maintaining focus on any topic, this appeared to be a powerful endorsement of the strategy for him. Some students specifically mentioned liking the self-regulation components of the strategy, including the self-statements and goal setting.

Students were also asked what they would add to or change about instruction. Although many students did not provide suggestions of changes that could be made to the POW + TREE lessons, several students mentioned that they did not like the writing prompts provided during instruction. Some of these students expressed that they would have preferred to pick their own prompts. In addition, several students noted that they would like instruction

to be "more fun," incorporating more game-type activities, receiving more rewards for written products, and working with partners.

Finally, students were asked if they had used the POW + TREE strategy in any other classes. Nine of the students reported using the strategy in their English classes, but other classes mentioned included history and math. This information was also confirmed by their teachers, who indicated that several of the students were using the graphic organizer in other classes. Furthermore, 3 students who were interviewed following statewide writing high-stakes tests said that they used the POW + TREE strategy during the essay component on the high-stakes test. This report was corroborated by teachers who monitored students during the testing. They reported that several students wrote out the graphic organizer before they began writing during the high-stakes testing.

## Discussion

These findings reveal substantial improvement across 12 students with significant EBD issues in writing persuasive essays with respect to overall quality, number of words, sentences, essay parts, transition words, and paragraphs on postinstruction, postfluency, and maintenance probes. Although maintenance and generalization performance was somewhat lower than fluency levels, performance was still substantially higher overall than baseline levels. Moreover, students gained statistically on a standardized measure of writing fluency, and reports of all students related the observed performance to the strategy instruction. This intervention took place over 4 months and

provided intensive, recursive instruction to students who were not only struggling writers but also experienced severe emotional and behavioral disabilities. This study also provides further evidence of the challenges associated with teaching SRSD strategies to middle-school students with significant emotional/behavioral disabilities, as well as the very substantial positive benefits that may result from these strategies, when appropriately taught. In this investigation, despite numerous affective and behavioral challenges, students learned the POW + TREE writing strategy and employed it to significantly improve their writing of persuasive essays.

The postintervention findings replicate the previous SRSD research conducted with students with and without EBD, in that training improved overall number of words and essay components, including quality for writing persuasive essays (see Mason & Shriener, 2008; Mastropieri et al., in press). These results also replicate the earlier findings of Mastropieri et al. (in press) by demonstrating that a lengthy intervention period was required for students with significant emotional and behavioral issues who are attending a public day middle school for students with EBD. More than 50 days of intensive, recursive instruction were required in the present study, which exceeds the amount of instructional time typically devoted to teaching students how to write persuasive essays.

All students improved significantly on all essay components when they were taught to apply what they learned to plan and write fluently in a 10-minute period. It was interesting to note that several students improved in their essay writing by the postfluency testing. For example, Evan appeared to finally excel during the fluency phase. It seems that perhaps Evan required the additional instructional time to master the entire writing strategy, including the writing fluency component. Several students appeared to feel more confident and attentive during the 10-minute sessions. The shorter period of "10 minutes to work" may be beneficial for students with EBD because they can see an end to the task. During the first phase of this study, writing essays frequently required an entire class period or more, and many students appeared to get discouraged when writing essays that consumed those longer time periods. These findings also replicate those recently reported by Mason (2009) with students with learning disabilities,

and Mason, Kubina, Valasa, and Monger (2009) with students with EBD who were taught to use a quick-write strategy. Those studies reported positive overall findings for students learning how to write a persuasive essay within 10 min. It may be that the quick-write strategy, which required significantly less instructional time, also could become a more versatile writing strategy for students with EBD. Future research could examine the optimal procedures for having students with EBD learn to write more fluently and whether or not students can begin to write more fluently after shorter initial instructional periods.

Maintenance results revealed interesting, but somewhat equivocal, findings. The maintenance results were all significantly higher than the baseline condition; however, they were somewhat depressed from the fluency testing. Because testing occurred after a delay interval of 11.5 to 15 weeks postinstruction, these findings are both encouraging and disappointing. It was encouraging to see gains over baseline; however, many students declined in performance from postfluency instructional levels. It might mean that students such as those in the present study require additional booster sessions spaced throughout the school year to maintain consistent performance levels.

Generalization findings were also mixed. Significant gains over baseline were observed for number of words, transition words, essay parts, and overall essay quality. However, we had hoped that students' essays would be more representative of the quality and length produced at postinstruction or postfluency. This may mean that more explicit generalization instruction is required for students to be able to generalize the SRSD strategy for writing persuasive essays. It would have been of interest to know whether students could generalize their skills more effectively immediately following instruction. Future research could examine more explicit generalization instruction embedded within the SRSD training and could assess generalization closer to the end of intervention periods.

Students' strategy reports and interviews also confirmed that they learned how to use the strategy. Many students reported enjoying the strategy and appreciating the benefits from the planning and organizing components. Most students stated that they used the strategy in other academic classes, such as their English classes. Anecdotal reports by teachers also

revealed that students actually wrote out their own version of the POW + TREE graphic organizer for planning in other classes as well as during their high-stakes testing. It is encouraging to hear these reports, but future research could examine more systematically alternative instructional procedures designed to facilitate generalized writing skills.

Students in this investigation demonstrated an overall lower percentage of time on task than considered desirable. However, lower levels of overall academic engagement in students with EBD are commonly reported in the literature (e.g., Hawkins & Axelrod, 2008) and have been seen to persist despite curricular or materials modifications intended to improve on-task behavior (e.g., Miller, Gunter, Venn, Hummel, & Wiley, 2003). In fact, overall lower levels of on-task behavior also were observed in a similar, previous investigation (Mastropieri et al., in press), despite the use of small instructional groups and high levels of teacher interaction. The present authors contend that insufficient academic and social behavioral gains will be met or more lengthy instructional sessions will be required if time on task is only 72%. Results of the present investigation also underlined the consistent relation between engaged time on task and writing outcomes (Mastropieri & Scruggs, 2010). Although these correlations were not large enough to be significant on posttest measures, a number of significant correlations between on-task behavior and fluency, maintenance, and generalization measures underscored the importance of on-task behavior in facilitating longer-term, generalized outcomes.

In the present case, however, students were not always off task simply because of disruptive classroom behavior, although these events were noted. Some students were more likely to exhibit serious signs of depression or anxiety, which interfered with their ability to attend appropriately. In these cases, students were not disruptive but still very much off task. The overall lower percentage of time being on task is directly related to the significantly longer, more intense instructional period required for students to master the SRSD strategy for writing persuasive essays. Students' affective and behavioral characteristics also contributed to their time spent out of the room meeting with counselors, which contributed to the necessity for extending the instruction considerably beyond the amount of time usually allocated to other students (e.g.,

students with learning disabilities) to learn the same strategies (see Harris, Graham, Brindle, & Sandmel, in press). Interestingly, the study reported by Mastropieri et al. (in press) included a highly similar sample of students, who also required significantly more instructional time. It is probable that the emotional and behavioral problems exhibited by the students in the present study interact negatively with opportunities to learn in school and result in lower overall academic achievement. Although project staff were able to accommodate these characteristics during instruction, considerable instructional time was lost in the process.

In the present study, 11 of 12 students were diagnosed with comorbid conditions (e.g., learning disabilities in addition to emotional disabilities). This dual or more diagnosis is thought to be a factor influencing the amount of instructional time. For example, in working with students with significant learning disabilities, emotional disabilities, and lower writing skills, staff noted that additional time was required to teach some of the more basic parts of the lessons. It is speculated that comorbidity of conditions significantly increased required instructional time (Scruggs & Mastropieri, 1986). Future research could examine the influence of comorbid conditions in relation to instruction and student performance gains.

Results of the present investigation contribute to the existing literature on writing instruction for adolescents with EBD and how SRSD instruction in persuasive essay writing interacts with the characteristics of students with EBD. Although these results are very positive, additional research is needed to add to our overall knowledge of writing instruction. Students in the present study improved significantly over baseline levels; however, their overall written performance after training would not be considered proficient at the eighth-grade level. Future research needs to examine instruction designed to promote higher levels of writing proficiency across a variety of genres. For example, in the present investigation, only one writing strategy was trained, and a considerable time period was needed to make this intervention successful. Perhaps in future research, strategies for several types of writing, such as persuasive, narrative, and expository writing, could be combined in such a way, emphasizing common features, so that the overall time of instruction for each strategy could be minimized. In addition, it

would be of interest to determine whether such instruction could be combined with instruction in the mechanics of writing (e.g., spelling, punctuation) seen to be lacking in this population yet often featured on high-stakes tests. Future work could also explore critical content issues related to time on task. At present, however, it can be stated that SRSD strategies for writing, with appropriate instructional supports, can be highly effective for improving the writing performance of students with EBD.

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Address correspondence to Margo A. Mastropieri, George Mason University, College of Education and Human Development, MSN 6D2, 4400 University Dr., Fairfax, VA 22030-4444. Phone: (703) 993-4136; Fax: (703) 993-2063; E-mail: mmastrop@gmu.edu.

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