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# Developing Quick Writing Skills of Middle School Students With Disabilities

Linda H. Mason<sup>1</sup>, Richard M. Kubina Jr.<sup>1</sup>, and Raol J. Taft<sup>2</sup>

## Abstract

Two multiple-baseline, across-participants design studies were used to examine persuasive quick write (10-minute writing responses) performance of seventh-grade students with disabilities. In the first study, 6 students were taught by a graduate research assistant; in the second study, 10 students were taught by their special education teacher. In both studies, students' written responses were evaluated before, during, and after self-regulated strategy development instruction for the POW + TREE planning strategy (POW: pick my idea, organize my notes, write and say more; TREE: topic sentence, reasons—three or more, explain, ending). All study participants improved in the number of persuasive parts included and the quality of the written response immediately after and weeks following instruction.

## Keywords

writing, self-regulation, middle school, teacher instruction

Good writers use metacognitive knowledge to organize, plan, revise, and monitor the writing process. They can generate ideas and themes into organized text structures to produce coherent compositions (Englert & Mariage, 2003). In contrast, students with learning and behavioral problems often lack knowledge about the writing process (Graham & Harris, 2003). They typically spend less time planning and have difficulties generating ideas and editing compositions. They tend to produce compositions of shorter length and have more mechanical errors than their nondisabled peers. Their compositions have less text structure when writing across genre and format (Anderson & Keel, 2001; Harris & Graham, 1999).

Adolescents with disabilities are often identified as a group struggling to demonstrate achievement gains in writing (Graham & Perin, 2007). Researchers have documented that adolescents—particularly, students with disabilities—can have difficulty with all writing genres: narrative, informative, and argumentative/persuasive (Coker & Lewis, 2008). Furthermore, for students with disabilities, writing within formats both simple and complex is challenging owing to a lack of self-regulation skills (e.g., begin a task, stay on task, and finish a task timely) and the cognition necessary for planning, organizing, and producing a final written product (Graham & Harris, 2003). Adolescents who struggle with written expression simply have a poor understanding of the critical cognitive strategies needed for effective writing (Conley, 2008).

The lack of writing strategies and skills for expressing ideas and for demonstrating knowledge negatively affects students' ability to maximize learning opportunities because

writing facilitates learning (Deshler, Palinscar, Biancarosa, & Nair, 2007) and promotes critical thinking (Tierney & Shanahan, 1996; Tierney, Soter, O'Flahavan, & McGinley, 1989). Classroom writing activities benefit students' comprehension and vocabulary by encouraging students to make connections through the writing process (Mason, Benedek-Wood, & Valasa, in press). It is therefore important to provide adolescents with opportunities for writing to support learning across the school curriculum (Dahl & Farnan, 1998). In addition, writing should be fully integrated into the content areas (Coker & Lewis, 2008; Graham & Perin, 2007). In secondary content classes, for example, teachers can use techniques such as quick writes as a writing-to-learn activity by providing students an opportunity to recall, clarify, and question the information (Fisher & Frey, 2004; Tierney & Dorroh, 2004).

## Quick Writes

Quick writes support content learning by presenting a nonthreatening, informal, and brief writing activity for students (Fisher & Frey, 2004; Mason, Benedek-Wood, &

<sup>1</sup>The Pennsylvania State University, University Park, PA, USA

<sup>2</sup>University of Missouri, Kansas City, MO, USA

### Corresponding Author:

Linda H. Mason, 210 CEDAR, The Pennsylvania State University, University Park, PA 16802

E-mail: [lhml2@psu.edu](mailto:lhml2@psu.edu)

Valasa, in press). Quick writes are generally 10-minute writing responses to a question related to a specific topic. The activity requires students to think about and explain what they know, through written reflection and elaboration (Mitchell, 1996; Wood & Harmon, 2001). To encourage free expression, writing mechanics are not taken into account (e.g., punctuation, spelling, and grammar; Harvey & Bizar, 2005). Quick writes can be implemented for a variety of written-language genres. In a science lesson on digestion and nutrition, for example, students may write (a) an informative response to “Describe the digestive cycle,” (b) a narrative response to “Tell about a time when a food made you or someone you know sick,” or (c) a persuasive response to “Should students your age eat junk food?”

As noted previously, writing activities such as quick writes in content classes benefit students’ learning by encouraging students to make connections through the writing process. Quick writes can also help with assessment of student learning at the beginning, middle, or end of a lesson. Green, Smith, and Brown (2007) note that quick writes are sensitive to instruction—therefore, a potential tool for instructional decision making. In fact, providing students opportunities to provide short written responses for assessment purposes is not limited to quick writing in the classroom.

### Assessment of Learning Through Writing

One critical assessment, the National Assessment of Educational Performance test, illustrates the use of short written responses to measure learning. The assessment uses short written informative, narrative, and persuasive responses (constructed responses) to evaluate student text comprehension. Students are given 25 minutes to silently read a short essay and answer five constructed-response questions and six multiple-choice questions. On a recent reading assessment, for example, eighth-grade students were asked to read a passage and answer questions, including the following persuasive-writing prompt (National Center for Education Statistics, 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 the National Assessment of Educational Performance scoring criteria, contains an opinion, supportive details, and an evaluation or explanation of how these details support the opinion. Approximately one third of the students taking the 2007 test wrote unacceptable responses or omitted the question entirely.

Clearly, many students have difficulty organizing a response to a persuasive-writing prompt—especially, one that calls for a short, timed response, as seen in the example of the National Assessment of Educational Performance.

Without a coherent strategy for responding quickly to a prompt, students often experience difficulty demonstrating knowledge. To date, researchers have not targeted instruction for adolescents with disabilities in the context of quick writing. Given this, the first author adapted what was known about effective writing instruction for students with disabilities into a quick write framework to meet the needs of two middle school teachers and their students. A well-established, evidence-based instructional approach developed by Graham and Harris (2003)—namely, the self-regulated strategy development (SRSD)—was used for this task (Baker, Chard, Ketterlin-Geller, Apichatabutra, & Doabler, 2009).

### SRSD

SRSD is designed to promote independent use of task-specific writing strategies by teaching students cognitive and self-regulation strategies so that they can better understand and regulate the writing process. Students are active participants in the learning process, and student effort is acknowledged and rewarded. Responsibility for strategy use and self-regulation of the writing process are gradually shifted from the teacher to the student by scaffolding instruction. 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 et al., 2003). Four self-regulation processes are embedded in SRSD: goal setting, self-monitoring, self-instructions, and self-reinforcement. Instruction is criterion based rather than time based; that is, students must demonstrate they have mastered a particular stage or procedure before they are allowed to move to the next phase of instruction.

SRSD has proven to be effective with adolescents with disabilities who struggle with writing (Mason & Graham, 2008). Results of research indicate that students receiving SRSD significantly improve the schematic structure of writing, when compared with direct teaching and control conditions (effect size = 1.86).<sup>1</sup>

### SRSD for POW + TREE

SRSD can be adapted to target specific writing tasks and genres. As an example, SRSD for POW + TREE was designed to provide two strategies to facilitate student learning of skills required to write opinion or persuasive papers (POW: pick my ideas, organize my notes, write and say more; TREE: topic sentence, reasons—three or more, examine, ending). The first strategy, POW, is a general planning strategy that includes three steps: pick an idea or side of a topic, organize ideas into writing using a graphic organizer, and 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 strategy includes the following: write a convincing topic sentence that tells what you believe, write three reasons why you feel the way you do about a topic, write explanations to support each reason written, and wrap it up with a good ending or summary sentence.

SRSD for POW + TREE has been shown to improve students' response length, elements, and quality. For example, when a POW + TREE strategy was taught to second- and third-grade students, effect sizes for three measures (number of parts, quality of essay, and number of words written) ranged from 1.53 to 4.64 (second graders) and from 1.07 to 2.14 (third graders; Graham, Harris, & Mason, 2005; Harris et al., 2006). In a multiple-baseline study with second through fifth graders with behavior disorders (Mason & Shriener, 2008), student responses written after instruction had more TREE parts, better quality, and an increase in the number of words written and transition words used. Percentage of non-overlapping data (PND) points reflected the intervention to be very effective, above 90% for all students.<sup>2</sup>

Given the effectiveness of SRSD instructional and the age level of the students, SRSD for POW + TREE was selected for the intervention in the two current studies. The TREE strategy was revised to include a counterargument to accommodate the school's writing standards (i.e., topic sentence, reasons—three or more plus a counterargument, ending sentence).

## Current Studies

Two studies were conducted to evaluate the effects of SRSD instruction on quick writing: a study with 6 middle school students with disabilities in graduate assistant–delivered instruction and a study with 10 middle school students with disabilities in teacher-delivered instruction. The intervention described in this article was developed in collaboration with two middle school special education teachers. As described by the teachers, quick writing and persuasive writing were both areas of difficulty for their students with disabilities. First, students' ability to participate fully in content classrooms was impaired by not having the skill to complete a quick write. In addition, the teachers noted that their students, when asked to write a persuasive response, would (a) write one or two sentences that simply told their opinion, (b) write a laundry list of reasons, or (c) provide both sides of the argument, without clearly stating a belief. In the teachers' estimate, the students clearly did not have the requisite skills for producing a quick write persuasive response.

## Methods

Two multiple-baseline, across-participants design (Kennedy, 2005) studies were used to evaluate the effects of instruction

across groups of students over time. In the first study, a graduate assistant delivered instruction to three student pairs. In the second study, in the same school a year later, the special education teachers delivered instruction to three small groups of students. Common methodology used in both studies is described first. A description of each study's participants, variations, and results follows.

## Setting

A Northeastern middle school in a midsize university city was selected for both studies. At the time of both studies, the middle school had a student population of approximately 300 students—88% White, 4% Asian, 5% Hispanic, and 3% other ethnicities. Approximately 10% of the student population was classified by the state as *economically disadvantaged*. The school district had an inclusive policy, and all participants received instruction in general education classrooms and received instruction from a special educator for IEP goals related to reading, math, and/or writing in a learning support classroom setting. The intervention took place in the learning center room in the school library (Study 1) and in the learning support room (Study 2) during the students' regularly scheduled language arts time.

## Procedures

A multiple-baseline, across-participants design was used to assess performance before, during, and after instruction. Before instruction, baseline performance was established by collecting quick write persuasive responses to prompts administered by the students' teachers (e.g., "Should students be allowed to use cell phones at school?"). Students were provided a choice in writing to one of two prompts and in selecting the opinion or argument stance for their response. Students were given a 10-minute time limit for planning and writing. Students were given only one measure in a school day.

**Experimental design.** At least three data points (Study 1) and five data points (Study 2) were given during baseline. Additional measures were administered just before the start of instruction for the second and third group of students to establish stable baselines. The second group of students did not begin until instruction had been completed for the first group (i.e., when students met criterion by writing at least eight TREE parts during instruction). Likewise, instruction for the third group began after the second group had met criterion during instruction. Instruction (five to six 45-minute lessons) took place during the students' assigned language arts class. Immediately after instruction, on the next school day, postinstruction data was recorded. A minimum of three postinstruction measures were administered to the students to determine

independent writing performance. Two weeks following the last individual postinstruction data point, students were assessed for maintenance. Up to three maintenance assessments were given to all students.

### Measures

Students' performance was evaluated by examining persuasive responses written to a prompt during a 10-minute quick write given by the teacher in the students' learning support room. For the purposes of the studies, in developing prompts, the researchers considered the importance of confounding effects of students' content knowledge and the accessibility to students with diverse experiences and background knowledge. Given these concerns, prompts used topics that were familiar to students and similar to those used to foster class discussion, as opposed to topics for evaluating students' knowledge or learning.

All prompts were reviewed by the special education teachers and a content area teacher for appropriateness (see Appendix A for sample prompts). Prompts were ordered to ensure that no students received the same assessment prompt at any time during the study. For example, Student 1 in each study would begin assessment with the Set A prompts; the next student would begin with the Set B prompts; and so on.

In baseline, postinstruction, and maintenance testing, the teacher followed the given protocol:

Say, "Please listen carefully as I read these prompts." Read both prompts out loud to the students. Point to the prompts as you are reading them. Say, "Please select one of the prompts and write a response to it in your journal. Be sure to use everything you have learned about writing." Read both prompts out loud again to the students. Say, "You will have ten minutes to write." Start timing. After 9 minutes say, "You have 1 minute left to write." Stop timing after the 1 additional minute and say, "Stop." Thank the students for working hard.

In Study 1, students (with one exception) handwrote all assessments. In Study 2, students typed responses on their personal school-provided laptop computers. Students in this second study used Microsoft Word for all planning and writing tasks and assessments. Before scoring, each response was retyped and saved in a Word document. Identifying information was removed. Spelling, punctuation, and capitalization mistakes were corrected. Given that text appearance and mechanical mistakes can influence scorer judgment about writing, these steps helped to minimize examiner bias (Graham, 2006). Each response was scored for number of TREE parts, response quality (holistic quality), and number of words (length).

**TREE parts.** The primary measure and the measure used to establish criterion performance was the number of TREE parts written. Students earned one point for each TREE part they included in their response. One point was earned for a topic sentence, one for each reason, one for each explanation, one for a counterargument, and one for the ending sentence (see Appendix B for scoring guide).

**Quality.** Overall response quality was scored using a holistic measure. According to Graham and Perin (2007), this is the most common method for scoring writing quality. Raters read the responses and scored the paper using a 0- to 10-point scale. Raters were given author-developed anchor points, or papers representing responses with a low (2), medium (5), or high (8) quality holistic score. The use of anchor points has been developed in previous research (Graham et al., 2005; Harris et al., 2006; Mason & Shriner, 2008).

**Length.** Response length was determined using the word count function of Microsoft Word. To eliminate potential error, scorers independently verified this word count through manual recount.

**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 by the teacher and typed by a graduate research assistant.

**Scoring.** Two advanced graduate student raters (scorers)—blind to the purpose of the study, age of the student, study phase, and school system—received instruction in how to accurately count response parts and use the holistic scoring system. During instruction, scorers rated persuasive responses until they achieved 95% reliability over 10 responses. Reliability for each measure was established by dividing the scorer's agreements by the total number of agreements and disagreements. For both studies, identifying information was removed from the responses, and each rater independently scored all writing samples. Interrater reliability was computed for parts at 86.6% for exact agreement and 99.3% for within 1-point agreement, and for quality at 53.3% for exact agreement and 95.6% for within 1-point agreement. For disagreements, scores were averaged.

### Instruction

Embedded into lessons were steps for strategy acquisition (develop preskills, discuss the strategy, model the strategy, memorize the strategy, participate in guided practice, and participate in independent practice) and procedures for self-regulation (self-instruction, goal setting, self-monitoring, and self-reinforcement). The POW + TREE persuasive-writing strategy guided the students through the planning



and writing process. Student groups received five to six lessons, 45 minutes each, during the instructional phase of the study.

The first author conducted all training in the assessment and instructional procedures. All instructors, both the graduate assistant in Study 1 and the special education teachers in Study 2, had prior experience with SRSD instruction through classwork with applied assignments and/or prior research experience. The graduate assistant and special education teachers, in addition, received 5 hours of instruction specifically for SRSD instruction for POW + TREE until mastery was met in applying instructional procedures (i.e., the instructor modeled Lessons 1, 2, and 3 for the first author).

**Lesson 1.** In Lesson 1, the POW + TREE strategies were introduced and students' background knowledge was developed. The instructor and students discussed the meaning of the words *persuasive* and *response*. It was important for the students to understand that they were learning to write a response that could be used in all classes. The instructor discussed the POW and TREE strategies and steps. The students were told that good persuasive responses contain a counterargument with explanation and negation. Transition words were introduced. The students were then asked to find the eight TREE parts in an anchor/model paper. Students were also asked to identify TREE parts in a paper they had written. The students graphed the number of parts written in their paper. The instructor and students discussed how they could have improved the paper. Students developed a goal to write a good persuasive response containing all the TREE parts. A learning contract was signed to indicate the students' commitment to learning the strategy.

**Lesson 2.** Lesson 2, and all subsequent lessons, began with testing the students' memorization of the POW + TREE strategies. Using all support materials, the instructor modeled the use of POW + TREE to write a persuasive response. Problem definition, planning, coping, self-evaluation, and self-reinforcement/self-instructions were used as the instructor talked out loud during the modeling process: "What is it I have to do? Write a good persuasive response with all of the parts." "Think, my response has to make sense." "Take my time." After the instructor planned, wrote, and evaluated the response, the students recorded personal self-instructions.

Next, the students revised their previously written responses. The students and the instructor collaboratively wrote notes to achieve the desired criterion—eight or more parts. Students were encouraged to add transition words and a counterargument with negation in their revised response. The students counted and graphed the number of parts on their revised response. Students and instructor self-reinforced themselves for their achievement.

**Lesson 3.** In Lesson 3, the instructor and the students collaboratively wrote a persuasive response. Each student was

given a blank graphic organizer, a transition chart, and his or her self-instruction sheet. The instructor guided the students through each step of POW + TREE for writing a response. Use of self-instructions was encouraged. After the students wrote the paper, they counted the TREE parts and completed their graph. Students were rewarded through verbal praise for writing more than eight parts and were reminded of the POW + TREE test at the beginning of the next lesson.

**Lesson 4.** The purpose of Lesson 4 was to fade material and instructor support. The instructor explained that graphic organizers and transition word charts are not always available when one needs to write. The instructor then modeled how to write notes for TREE on blank paper. The students wrote a response by writing their own notes; then they counted and graphed the TREE parts written. Students self-reinforced for reaching eight or more parts.

**Lesson 5: Study 1.** Lesson 5 addressed improving students' writing time. Students were asked to think of times when assignments or tasks needed to be completed quickly (e.g., tests, games, sports). The instructor told the students, "The more you do something, the faster you become." The students and the instructor then discussed how, with a few strategies, a good persuasive response could be written in a short time. The students independently wrote a persuasive response. Students were given 10 minutes for writing the response. This lesson was to be repeated as needed for individual students. One student, Thomas, repeated the lesson.

**Lesson 5: Study 2.** For Study 2, Lesson 5 was modified to include an instructor-led modeling of writing a response in a 10-minute time frame. The instructor and the students discussed how often a time limit is given in class settings. Following the modeling, the students independently wrote a response within the time limit. When students completed their response, they counted and graphed the parts. Lesson 5 was designed to be repeated as needed for individual students. The lesson was not repeated.

### *Instructional Treatment Fidelity*

Three steps were taken to ensure treatment fidelity. First, the instructors (graduate assistants and special education teachers) communicated daily with the authors to discuss the day's lesson and to review plans for the next lesson. Next, the instructors used a checklist for the step-by-step instructions in each lesson. The instructors checked each step as it was completed during the lesson. Finally, the authors collected observation data. In Study 1, each instructional session was audio tape-recorded. In Study 2, all lessons were videotaped and/or observed. Two raters checked treatment integrity in each lesson by recording the presence or absence of each instructional step. Session integrity was

**Table 1.** Study 1 and Study 2: Student Demographics

Study and Group	Student	Age (Year-Month)	Sex	Disability
Study 1				
Group 1	John	12-10	M	SLD/ADHD
	Lineisha	13-9	F	SLD
Group 2	George	12-10	M	SLD
	Cheryl	12-10	F	SLD
Group 3	Gary	13-5	M	OHI/ADHD
	Thomas	13-3	M	SLD
Study 2				
Group 1	Jim	13-0	M	SLD
	Kim	12-9	F	SLD
	Sam	13-1	M	OHI/ADHD
Group 2	Kathy	12-10	F	SLD
	Lauren	13-5	F	SLD
	Tina	13-4	F	SLD
Group 3	Carey	12-7	F	SLD
	Tonya	13-5	F	SLD
	Dan	13-6	M	SLD
	Ron	13-1	M	SLD

All students were White. SLD, specific learning disability; ADHD, attention-deficit/hyperactivity disorder; OHI, other health impairment.

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 check sheet and observations in both studies.

### Data Analysis

Visual inspection procedures—that is, level, trend, and variability of performance during baseline, intervention, postintervention, and maintenance phases—were used to evaluate the effects of the intervention on the primary measure, TREE parts, and the quality of responses. Means and standard deviations were calculated for TREE parts, quality, 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. Treatment acceptability was reported descriptively.

### Study 1

The third author, an advanced graduate assistant, delivered all instruction to pairs of students in a quiet place in the school's library. Instruction, five to six 45-minute lessons, took place during the students' assigned language arts period. A special education teacher delivered assessments, 10-minute writing measures, in the learning support classroom during the students' language arts class.

### Participants

Two female and four male seventh-grade middle school students were selected by the students' classroom teachers and special education teachers to participate in Study 1. Two male students with behavioral disorder (BD) were transferred because they demonstrated difficulties with writing assignments in the general education content class. In addition, all participating students had writing goals on their IEPs. In accordance with school system policy, students' formal educational and cognitive testing was not available for researchers. See Table 1 for available student demographics.

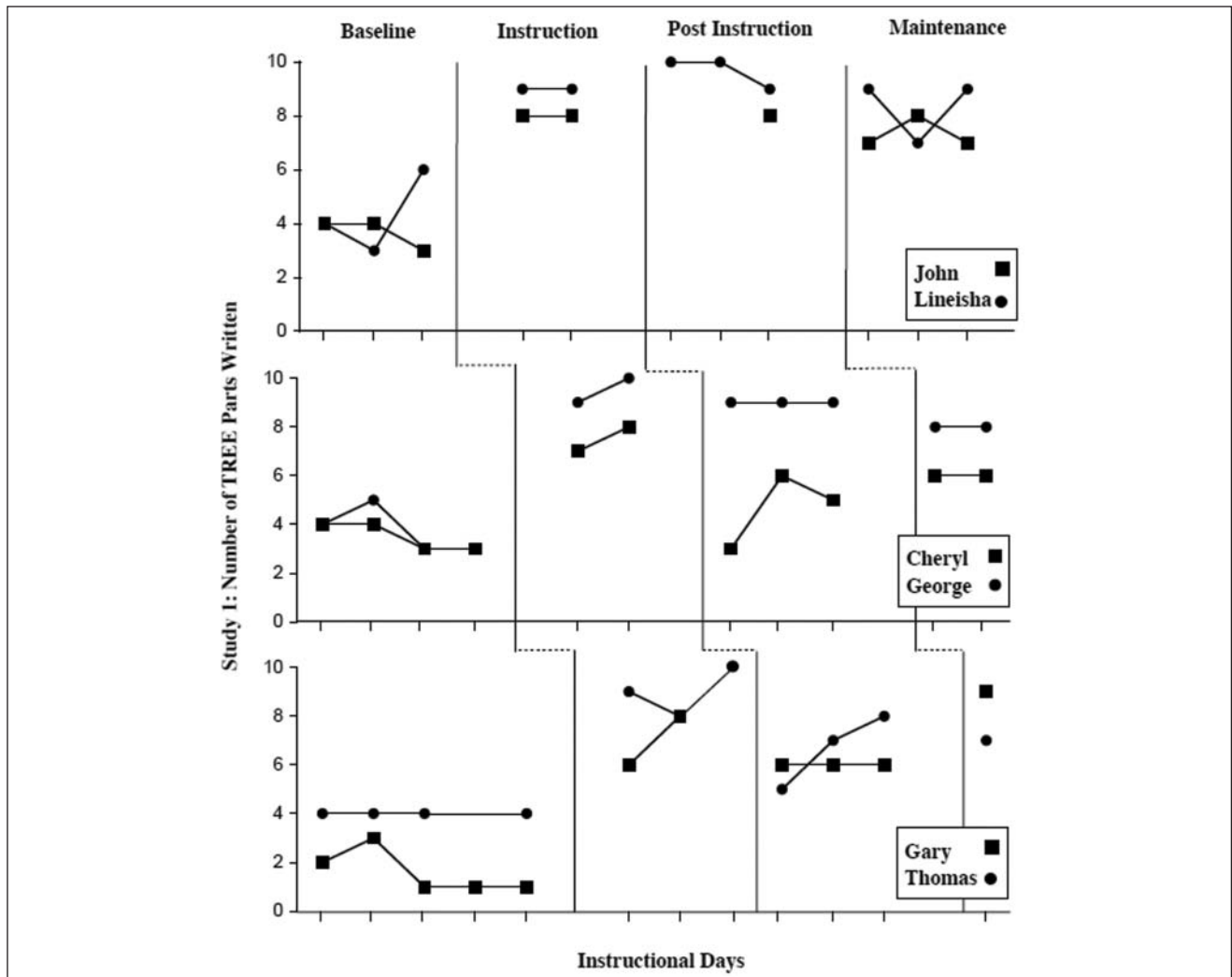
Lineisha<sup>3</sup> and John were randomly selected for the first group to receive instruction. In addition to having writing goals, Lineisha has IEP goals for reading and reading fluency, and John's goals included reading fluency. John was taking medications for attention-deficit/hyperactivity disorder and, according to the special education teacher, demonstrated some inappropriate behaviors and was under evaluation for emotional and behavioral disorder. Immediately after the last strategy lesson, John received an in-school detention. At the request of the teacher, the first two postinstruction prompts were given in a small room.

The second group randomly assigned to receive instruction was George and Cheryl. In addition to having writing goals, George had IEP goals for reading fluency and comprehension, whereas Cheryl had goals for reading. Furthermore, Cheryl was receiving occupational therapy at the time of the study and had an accommodation to use a computer word prediction program, Co:Writer, for all writing. Cheryl used this accommodation throughout the study. Gary and Thomas received instruction during the third grouping. Gary had goals for reading comprehension, and Thomas had goals for reading fluency and reading comprehension.

### Results

Overall results indicated that all students improved performance in 10-minute quick write persuasive responses following SRSD instruction for POW + TREE. Three postinstruction measures were collected for all students except John, who missed two measures because of school suspension, and Thomas, who missed one because he broke his leg. With one exception (Cheryl, for her first postinstruction measure), no student returned to his or her baseline writing performance for the primary measure number of parts. Three maintenance measures were collected for John and Lineisha, two for Cheryl and George, and one for Gary and Thomas.

*Number of response parts.* As noted in Figure 1, although all students met the eight-part criterion during instruction, student performance after instruction varied. Three students,



**Figure 1.** Study 1: The number of TREE parts written before, during, and after instruction.

John, Lineisha, and George, maintained performance at or above the eight-part criterion for the three measures. Gary's and Thomas's performance during postinstruction was below the 8-point criterion; however, performance improved 3 points and 2 points above their highest baseline performance, respectively. Cheryl returned to baseline during her first postinstruction measure but improved in the next two measures 2 and 3 points above baseline. All students' level and trend data indicated improvement in writing response parts. PND was 94% for postinstruction and 100% for maintenance.

**Quality.** Results for the quality of student performance also varied after instruction (see Figure 2). Only one student, Lineisha, demonstrated quality performance above baseline performance during all postinstruction and maintenance measures. All students' level and trend data indicated

improvement in writing quality. PND was 56% for postinstruction but improved to 75% at maintenance.

**Descriptive analysis.** Number of TREE parts, quality of response, and number of words written are reported by means and standard deviations for measurement phases (baseline, instruction, postinstruction, and maintenance) per student (see Tables 2 and 3) and group (see Table 4). As noted in Table 4, mean number of parts for the group of students ranged from 2.90 to 4.00 at baseline, from 7.75 to 8.50 during instruction, from 6.60 to 9.25 at postinstruction, and from 7.00 to 8.00 at maintenance.

The quality-of-response means for all six students improved during instruction, postinstruction, and maintenance (see Table 2). Baseline performance ranged from 2.00 (Cheryl) to 5.75 (George); postinstruction ranged from 4.00 (Gary) to 7.00 (John and George); and maintenance ranged



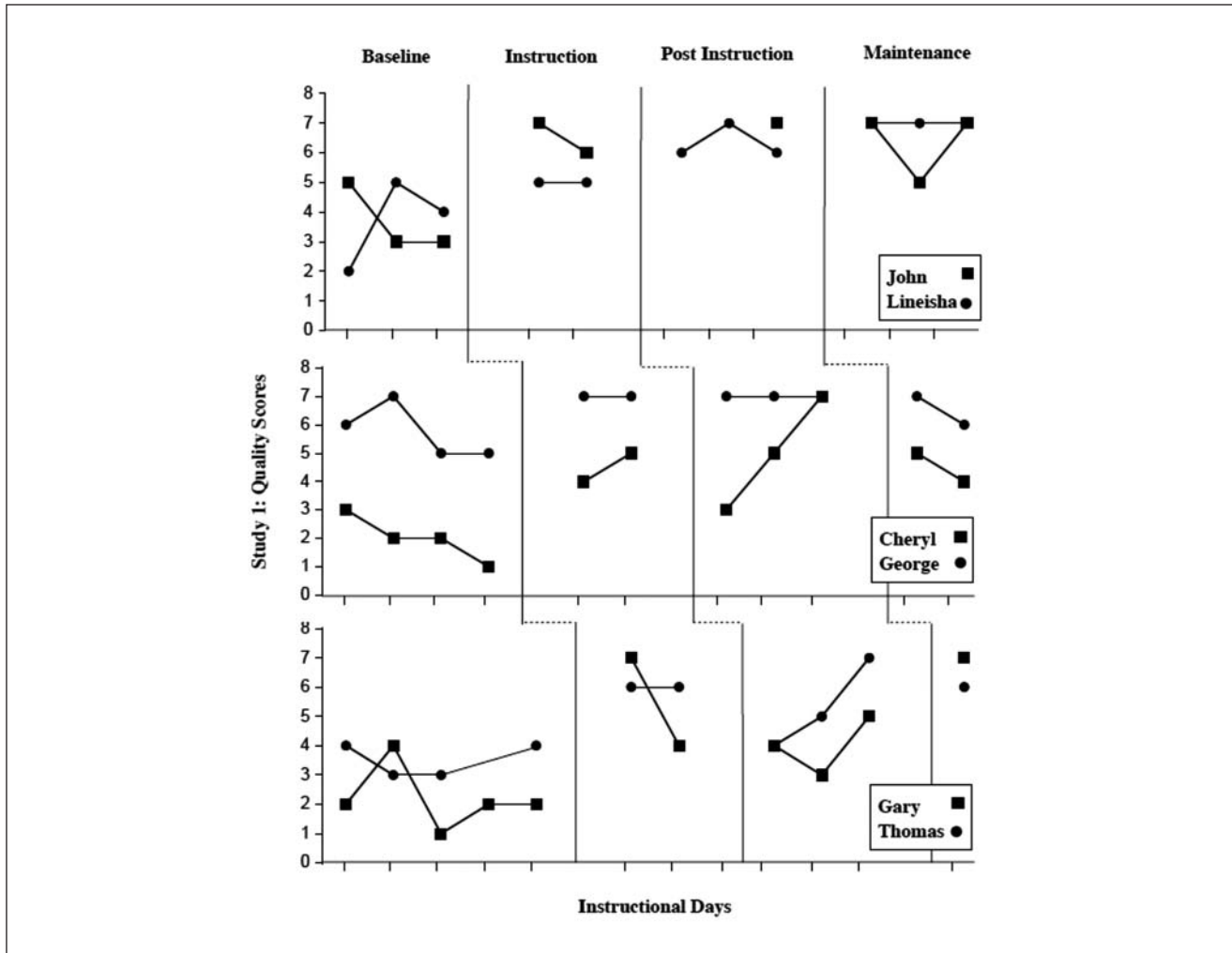


Figure 2. Study I: Writing quality before, during, and after instruction.

Table 2. Study I: Quality of Response Written—Means and Standard Deviations

Student	Baseline	Instruction	Postinstruction	Maintenance
	M (SD)	M (SD)	M (SD)	M (SD)
John	3.67 (1.15)	6.50 (0.71)	7.00 (0.00)	6.33 (1.15)
Lineisha	3.67 (1.53)	5.00 (0.00)	6.33 (0.58)	7.00 (0.00)
George	5.75 (0.96)	7.50 (0.71)	7.00 (0.00)	6.50 (0.71)
Cheryl	2.00 (0.82)	4.50 (0.71)	5.00 (2.00)	4.50 (0.71)
Gary	2.20 (1.10)	5.50 (2.12)	4.00 (1.00)	7.00 (0.00)
Thomas	3.25 (0.50)	6.00 (0.00)	5.33 (1.53)	6.00 (0.00)

Table 3. Study I: Number of Words Written—Means and Standard Deviations

Student	Baseline	Instruction	Postinstruction	Maintenance
	M (SD)	M (SD)	M (SD)	M (SD)
John	81.33 (16.65)	160.00 (22.62)	152.00 (0.00)	140.00 (26.85)
Lineisha	86.67 (18.00)	125.00 (35.35)	114.00 (15.62)	124.00 (21.93)
George	111.50 (30.65)	146.00 (19.80)	127.00 (7.94)	99.50 (7.78)
Cheryl	70.75 (10.90)	98.50 (17.68)	100.00 (16.64)	97.50 (0.71)
Gary	81.00 (10.22)	84.00 (0.00)	84.00 (11.36)	96.00 (0.00)
Thomas	70.25 (21.78)	94.50 (20.51)	71.33 (14.05)	83.00 (0.00)

from 4.50 (Cheryl) to 7.00 (Lineisha and Gary). Group means indicate that all groups improved, ranging from 2.80 to 3.88 at baseline, 5.75 to 6.00 during instruction, 4.80 to 6.50 at postinstruction, and 5.50 to 6.67 at maintenance.

The number of words written by all students, as noted in Table 3, remained above baseline performance during

instruction, at postinstruction, and at maintenance. Performance gains varied for individual students. John, for example, increased his number of words from 81.33 at baseline to 152.00 at posttest and 140.00 at maintenance, whereas Gary only improved from 81.00 at baseline to 84.00 at postinstruction and 96.00 at maintenance.

**Table 4.** Study 1: Means and Standard Deviations by Group

Measure	Instructional Group	Baseline	Instruction	Postinstruction	Maintenance
		M (SD)	M (SD)	M (SD)	M (SD)
Parts	Group 1	4.00 (1.10)	8.50 (0.58)	9.25 (0.96)	7.83 (0.90)
	Group 2	3.63 (0.74)	8.50 (1.29)	6.83 (2.56)	7.00 (1.15)
	Group 3	2.90 (1.52)	7.75 (1.26)	6.60 (0.89)	8.00 (1.41)
Total words	Group 1	84.00 (15.79)	142.50 (31.55)	123.50 (22.88)	132.00 (23.61)
	Group 2	91.25 (30.47)	122.25 (31.42)	113.50 (18.83)	98.50 (4.65)
	Group 3	74.50 (16.32)	89.25 (13.30)	81.60 (10.36)	89.50 (9.19)
Quality	Group 1	3.67 (1.21)	5.75 (0.96)	6.50 (0.58)	6.67 (0.82)
	Group 2	3.88 (2.17)	6.00 (1.83)	6.00 (1.67)	5.50 (1.29)
	Group 3	2.80 (1.03)	5.75 (1.26)	4.80 (1.48)	6.50 (0.71)

*Social validity.* Five students indicated that the POW + TREE strategy helped them in writing better persuasive responses. For instance, one student stated, “It helps your teachers and you understand what you are trying to say like before I could not understand what was writing about.” Only one student, the student who was later identified with BD, stated that the strategy did not help him. However, his data, as well as his persuasive response to the social validity question, indicated that it did in fact improve his performance.

### Study 1 Summary

Although there was variability in performance across the measures taken from the 10-minute written responses, all students made gains. PND data indicated a large effect for both postinstruction and maintenance for the primary measure: number of parts written. Student and group means indicate gains across all measures. A small effect was obtained for quality; however, a medium effect was obtained at maintenance. Given that the students’ special education teacher delivered all assessment measures at baseline, postinstruction, and maintenance, the assessment represented the students’ ability to generalize learning to someone other than the instructor. The findings from this study indicate that SRSD instruction for improving quick writing had promise. The teachers, instructor, and researchers believed that more teacher guidance was needed in order to develop student performance in writing within a 10-minute time frame. According to the teachers, students appeared frustrated when given the 1-minute warning (e.g., “You have 1 minute left to write”). Based on this concern, more explicit instruction and teacher-led modeling were added to the lesson plans to support writing a timed response. Furthermore, researchers decided that during replication, additional writing measures should be collected at baseline and postinstruction.

### Study 2

In the following year, two special education teachers implemented all instruction and assessment. Each teacher had a

master’s degree in special education with course work in direct instruction and strategy instruction procedures. The first teacher had 12 years of teaching experience in special education; the second had more than 20 years of teaching experience in special education. Both teachers had participated in the first author’s federally funded research in SRSD instruction for reading comprehension and writing.

Although one teacher led Groups 1 and 3 and the second teacher led Group 2, both teachers provided additional support to students during instruction. Instruction, five to six 45-minute sessions, took place in the learning support classroom during the students’ assigned language arts class. Given that all students with disabilities in this middle school use laptop computers for all writing assignments, students typed all responses.

Although permission to participate was not obtained for some students, all students in the classroom received instruction. Instructional groups ranged from five to six students during the course of the study. Data are reported only for the 10 students who agreed to participate and who remained for the duration of the study.

### Participants

Six female and six male students initially participated in the study. Two male students with emotional and behavioral disorder were transferred to an alternative school during the study; data are reported for the 10 remaining students. The students were chosen because they demonstrated difficulty with writing assignments in the general education content class. All students had goals for writing on their IEPs. As noted in the previous study, the participating school system did not release formal educational and cognitive testing to researchers. See Table 1 for available student demographics.

Three students participated in Group 1—Jim, Kim, and Sam. In addition to having IEP goals for writing, Jim and Kim had goals for reading fluency. Sam had goals for math. Kathy, Lauren, and Tina participated in Group 2. Both Lauren and Tina had goals for reading comprehension.

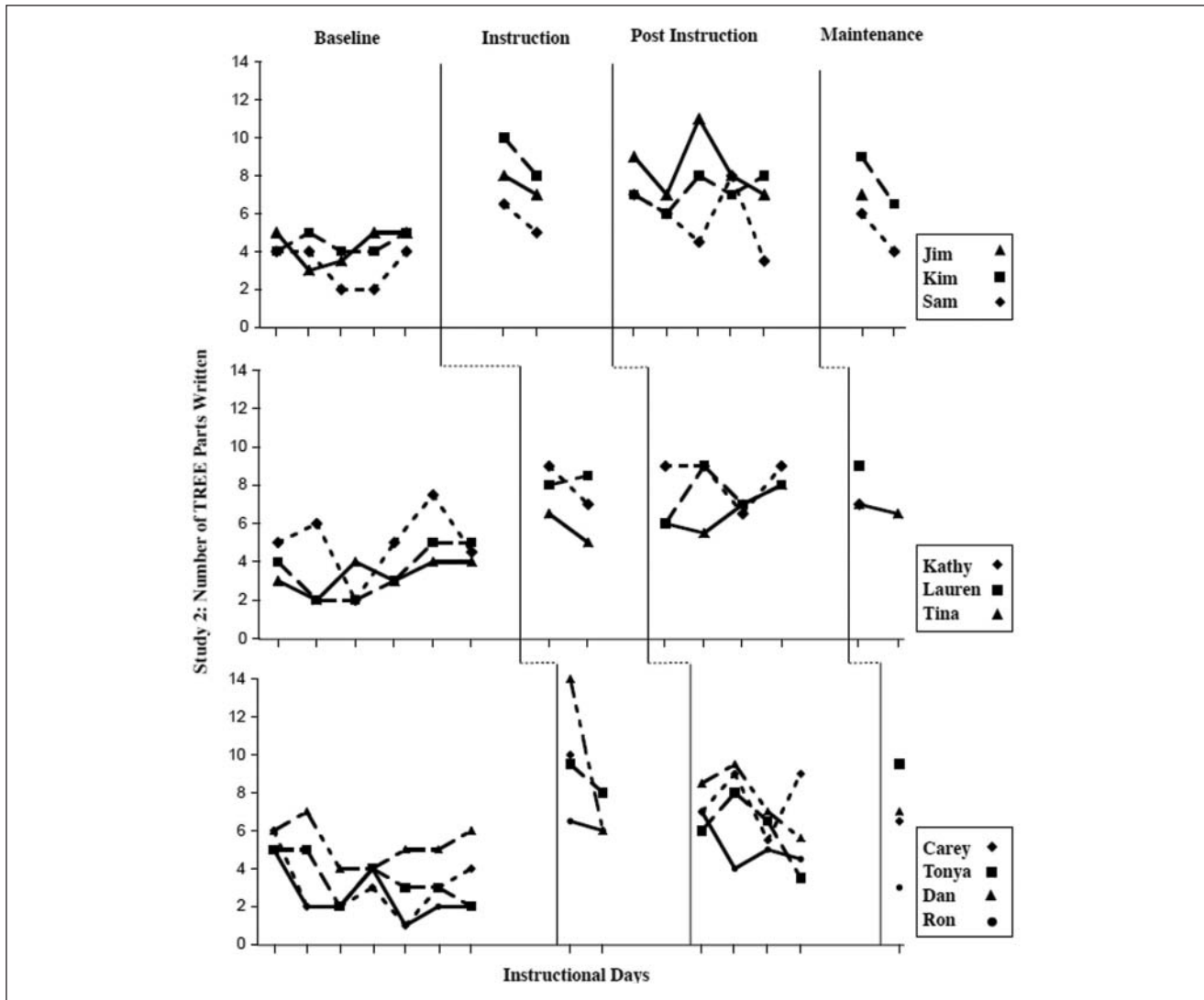


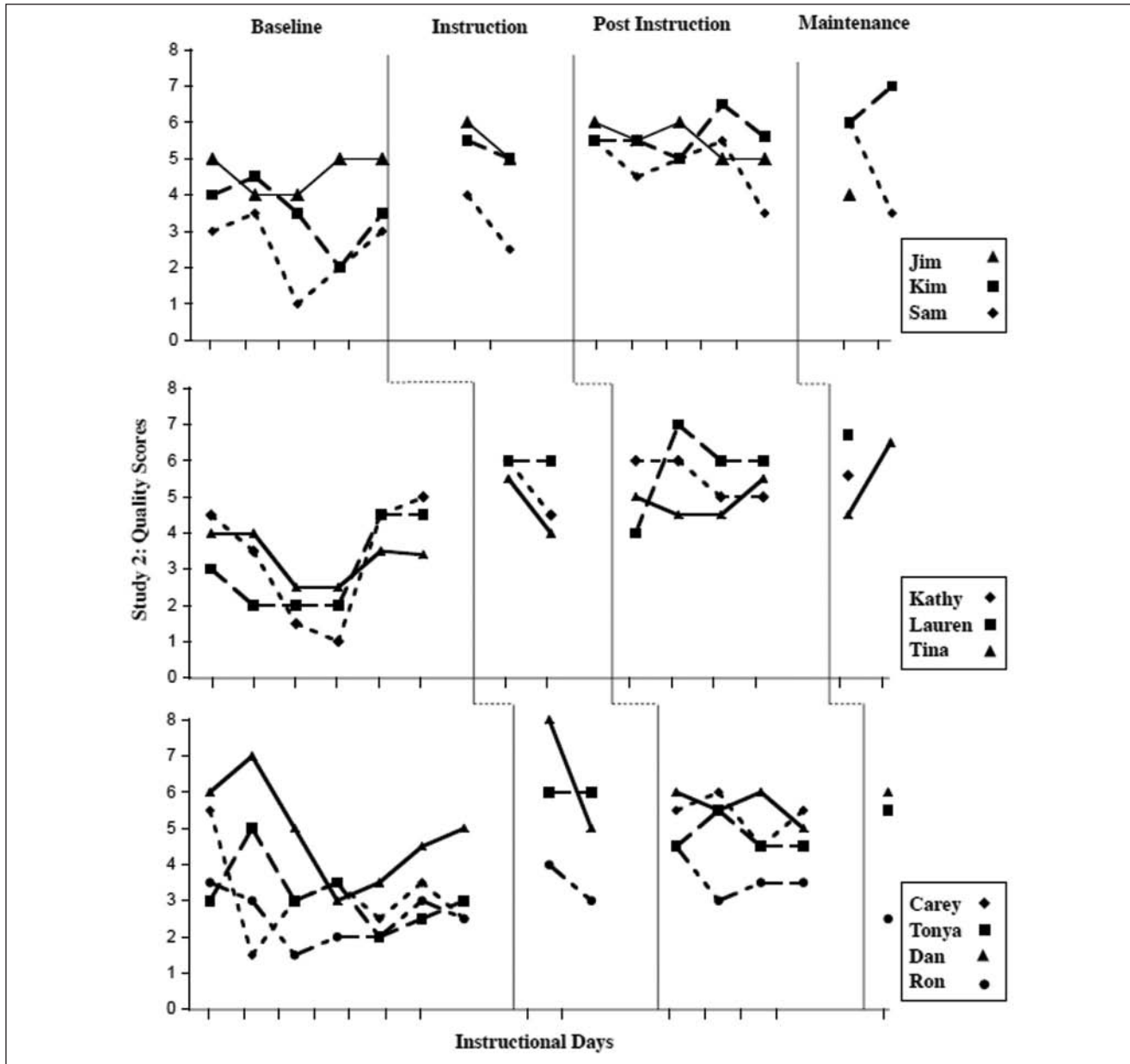
Figure 3. Study 2: The number of TREE parts written before, during, and after instruction.

Carey, Tonya, Dan, and Ron participated in Group 3. Dan had goals for reading fluency. Ron had goals for reading comprehension and was receiving occupational therapy services because of slow writing processing.

**Results**

Overall results indicated that students, with varying degrees of stability, demonstrated improved performance in 10-minute quick write persuasive responses following SRSD instruction for the POW + TREE strategy. Five postinstruction assessments were collected for all students in Group 1 and four postinstruction assessments for Group 2 and Group 3. Data for maintenance were collected at two data points for Jim, Kim, and Tina and at one data point for the remaining seven students.

*Number of response parts.* As noted in Figure 3, no student demonstrated writing a response with eight parts during baseline. Eight students demonstrated performance at or above the 8-point criterion for at least one measure during postinstruction. Three students (Kim, Lauren, and Tonya) maintained criterion performance. Jim’s and Ron’s performance during postinstruction was below the 8-point criterion, but their performance level indicated improvement: Jim’s baseline ranged from 2 to 4 parts, and his postinstruction ranged from 3.5 to 7, whereas Ron’s baseline ranged from 1 to 6 parts, with postinstruction that ranged from 4 to 7 parts. Five out of 10 students returned to their baseline performance for number of parts for at least one postinstruction measure. Although trend data were mixed for all but four students (Kim, Lauren, Tina, and Carey) each student’s level of performance indicated improvement in writing



**Figure 4.** Study 2: Writing quality before, during, and after instruction.

response parts. Some students also showed moderate variability during baseline and postinstruction—specifically, Sam, Kathy, Carey, Tonya, Dan, and Ron. Postinstruction PND for all students was 77%; maintenance PND was 67%.

**Quality.** As noted in Figure 4, students’ quality-of-response scores varied at baseline. Three students (Kim, Tina, and Carey) performed above their highest baseline for all postinstruction measurement. Sam and Lauren returned to baseline during one postinstruction measure. Five students (Jim, Kathy, Ron, Dan, and Tonya) demonstrated little improvement in their response quality during post

instruction. Four students (Sam, Lauren, Kathy, and Tina) demonstrated above-baseline performance for all maintenance measures. PND for all students at postinstruction was 62% and at maintenance, 50%.

**Descriptive analysis.** Number of TREE parts, quality of response, and number of words written are reported by means and standard deviation for measurement phases (baseline, instruction, postinstruction, and maintenance) for each student (see Tables 5 and 6) and each group (see Table 7). Mean number of parts per group of students ranged from 3.61 to 3.97 at baseline, from 7.33 to 8.57 during

**Table 5.** Study 2: Quality of Written Response—Means and Standard Deviations

Student	Baseline	Instruction	Postinstruction	Maintenance
	M (SD)	M (SD)	M (SD)	M (SD)
Jim	2.50 (1.00)	3.25 (1.06)	4.80 (0.84)	4.50 (1.41)
Kim	3.50 (0.94)	5.25 (0.35)	5.62 (0.54)	6.50 (0.71)
Sam	4.60 (0.55)	5.50 (0.71)	5.50 (0.50)	4.00 (0.00)
Kathy	3.33 (1.69)	5.25 (1.06)	5.50 (0.58)	5.60 (0.00)
Lauren	3.00 (1.22)	6.00 (0.00)	5.75 (1.26)	6.70 (0.00)
Tina	3.32 (0.68)	4.75 (1.06)	4.88 (0.48)	5.50 (1.41)
Carey	3.14 (1.25)	6.00 (0.00)	5.38 (0.63)	5.50 (0.00)
Tonya	3.14 (0.94)	6.00 (0.00)	4.75 (0.50)	5.50 (0.00)
Dan	4.86 (1.38)	6.50 (2.12)	5.63 (0.48)	6.00 (0.00)
Ron	2.50 (0.71)	3.50 (0.71)	3.63 (0.63)	2.50 (0.00)

**Table 6.** Study 2: Number of Words Written—Means and Standard Deviations

Student	Baseline	Instruction	Postinstruction	Maintenance
	M (SD)	M (SD)	M (SD)	M (SD)
Jim	50.80 (14.92)	80.50 (6.36)	110.40 (15.66)	73.50 (.71)
Kim	106.00 (30.39)	128.00 (28.28)	126.80 (9.07)	120.00 (25.46)
Sam	98.20 (10.20)	145.50 (9.19)	154.00 (31.84)	143.00 (0.00)
Kathy	92.83 (41.59)	111.00 (16.97)	108.50 (7.19)	121.00 (0.00)
Lauren	66.83 (44.31)	152.50 (44.55)	97.50 (38.23)	139.00 (0.00)
Tina	79.33 (33.24)	86.00 (31.11)	107.50 (20.47)	93.00 (0.00)
Carey	76.71 (23.06)	135.00 (0.00)	90.75 (8.26)	139.00 (0.00)
Tonya	60.71 (14.23)	121.00 (18.38)	78.50 (17.31)	110.00 (0.00)
Dan	89.57 (28.01)	178.50 (98.29)	117.50 (14.27)	135.00 (0.00)
Ron	62.71 (12.34)	125.00 (2.83)	78.25 (20.58)	69.00 (0.00)

**Table 7.** Study 2: Means and Standard Deviations by Group

Measure	Instructional Group	Baseline	Instruction	Postinstruction	Maintenance
		M (SD)	M (SD)	M (SD)	M (SD)
Parts	Group 1	3.97 (1.01)	7.42 (1.69)	7.13 (1.78)	6.50 (1.80)
	Group 2	3.94 (1.52)	7.33 (1.47)	7.50 (1.33)	8.00 (1.15)
	Group 3	3.61 (1.73)	8.57 (2.89)	6.60 (1.86)	6.50 (2.68)
Total words	Group 1	85.00 (31.59)	118.00 (33.02)	130.40 (27.01)	106.00 (33.62)
	Group 2	79.67 (39.12)	116.50 (39.38)	104.50 (23.54)	118.00 (18.94)
	Group 3	72.43 (22.64)	140.57 (48.59)	91.25 (21.71)	113.25 (32.17)
Quality	Group 1	3.53 (1.19)	4.67 (1.25)	5.31 (0.70)	5.20 (1.44)
	Group 2	3.22 (1.20)	5.33 (0.88)	5.38 (0.86)	5.80 (1.05)
	Group 3	3.41 (1.37)	5.43 (1.62)	4.84 (0.94)	4.88 (1.60)

instruction, from 6.60 to 7.50 at postinstruction, and from 6.50 to 8.00 at maintenance.

Student means indicated that the quality of responses for all 10 students improved during instruction and postinstruction (see Table 5). All but Sam's and Ron's quality performance maintained. Baseline performance ranged from 2.50 (Jim and Ron) to 4.86 (Dan); postinstruction ranged from 3.63 (Ron) to 5.75 (Lauren); and maintenance ranged from 2.50 (Ron) to 6.70 (Lauren). Group means for quality indicate that all groups improved, ranging from 3.22 to 3.53 at baseline, 4.67 to 5.43 during instruction, 4.84 to 5.38 at postinstruction, and 4.88 to 5.80 at maintenance.

As noted in Tables 6 and 7, the number of words written by all students remained above baseline performance during instruction, at postinstruction, and at maintenance. Performance gains varied for individual students. Sam, for example, increased his number of words from 98.20 at baseline to 154.00 at posttest and 143.00 at maintenance, whereas Tonya improved from 60.71 at baseline to 78.50 at postinstruction and 110.00 at maintenance.

**Social validity.** All students but one (Dan) stated that the instruction helped them; all stated that the instruction could help other students their age. Four students, however, thought

that POW + TREE should not be taught for the following reasons: First, instruction occurred during homework time, and "I like to be getting help on my homework"; second, "expressive writing is more fun"; third, "you have to know what it means"; and fourth, "four square [a writing method] is more straightforward and you do not have to think."

### Study 2 Summary

Level and trend data as well as individual and group means indicate that SRSD instruction for POW + TREE had a positive effect on student performance. Student and group means note gains across all measures. Even though variability (noted in visual analysis and standard deviations) occurred in baseline and postinstruction with a few students, gains appeared across all phases and measures for five students (Sam, Lauren, Tina, Kim, and Dan). Jim, Kim, Kathy, Carey, and Tonya had less stable performance across all measures and phases. Note that these students had the greatest baseline variability. One student, Ron, had small gains; his best postinstruction measure for number of parts was only one point higher than his highest baseline. Interestingly, although students were noted to be writing to the



eight-part criterion during instruction (as documented by teachers' examination of graphing charts), when prompts were scored after the completion of the study, it was observed that only three students (Kim, Lauren, and Tonya) actually met criterion during lessons. PND for number of parts indicated a medium effect for postinstruction and a small effect for maintenance; postinstruction and maintenance quality had a small effect.

## Discussion

Results indicated that SRSD instruction for the POW + TREE persuasive-writing strategy supported the quick writing performance of students with disabilities, as measured by the target variable: number of response parts written. Instruction, unfortunately, had only small effects on response quality. However, student and group means do reflect that all students improved performance for number of parts, quality, and number of words written. It should be recognized that findings are preliminary in the authors' development of an instructional intervention targeting an underexplored academic skill for adolescents with disabilities. The results of Study 1 were strong, given the external validity of assessment (i.e., by the classroom teacher in the classroom setting) and the relative stability of student performance across intervention phases. The findings of teacher-delivered strategy instruction in Study 2 provided evidence that SRSD for POW + TREE could be transferred to a middle school classroom. These findings are important in that research for teacher-delivered writing strategy instruction has been understudied (Baker et al., 2009).

The addition of a teacher's modeling a timed task did not produce anticipated performance gains for the students in Study 2. Response parts in Study 1 appear level, within range of the eight-part criterion (group range of 6.60 to 9.25 response parts at postinstruction), with large effects at postinstruction (PND = 94%) and maintenance (PND = 100%). In Study 2, postinstruction had a level below the eight-part criterion (group range of 6.50 to 7.13 response parts) and a medium effect (PND = 77%), with maintenance declining to a small effect (PND = 67%). In addition, student performance in Study 2 indicated more variability across intervention phases. Graham and Harris (2003) note the importance of revisiting stages of strategy acquisition, especially when introducing new skills to students. Although instruction included extra teacher-led modeling in writing for the timed response, collaborative and supported writing practice for the timed response was not specified in the Study 2 lessons. It is possible that the paired instruction in Study 1 may have provided more opportunities for student-needed direct individualized support and collaboration during guided practice than what could be provided in the group instruction (Harris & Graham, 1999).

Differences in study design and methods may have contributed to variability. Revising the measure design (e.g., additional postinstruction and maintenance testing) may have increased variability across measures. For example, students were asked to write only three to five baseline responses and three postinstruction responses in Study 1, compared to five to seven baseline responses and four to five postinstruction responses in Study 2. Researchers have found that intrinsic motivation diminishes with complex tasks of extended duration; this in turn decreases self-regulation (Hidi & Boscolo, 2006). By extending the number of assessment measures, student motivation for writing may have decreased. Providing the students extrinsic self-reinforcement (e.g., graphing results) during assessment and reinforcing the value of the task may have better supported self-regulation and motivation (Mason, Meadan, Hedin, & Cramer, in press).

Notwithstanding the increased assessment, students in Study 2 typed all responses in a word-processing program. The effect of adding technology to a timed writing task intervention was not documented; therefore, effect on student performance is unknown. Although students used word processing for the entire writing process, as recommended by MacArthur (2009), it is possible that typing may have been slower than handwriting for some students (Handley-More, Deitz, Billingsley, & Coggins, 2003). Differences may have also been attributed to study variations (e.g., group size, instructor differences, setting), instructional delivery (e.g., feedback provided during guided practice), and unforeseen competing situations (e.g., missing homework help time).

Conducting research with teachers, in authentic group size settings, often results in less experimental control when compared to the more lablike setting of researcher-delivered intervention. In spite of the teacher constraints of accountability for IEP goals and curriculum standards, fidelity of instruction was excellent, and teachers supported each other in the classroom during instruction for individual student performance and behavioral needs. The teachers did note concerns regarding time constraints (e.g., would the study be finished before schedule changes at the end of the school quarter?). Interestingly, similar time concerns were expressed by students after the study. Unknown to the researchers, instruction was supplanting expressive writing and homework support time. Four students specifically took issue with the loss of homework assistance.

Differences in progress-monitoring criteria may have also influenced the effects of the intervention. For example, after the conclusion of both studies, all writing responses were scored by blind scorers. Differences for guided practice in the two studies were noted (see Figures 1 and 2). In Study 1, scored student writing performance indicated positive levels during instruction, whereas that in Study 2 indicated some negative levels.

This finding was surprising: During Study 2 consultation, teachers reported that following guided practice lesson 5 (which included modeling), students had mastered writing a 10-minute response at the eight-part criterion, when in fact they had not. Interestingly, the impact of the one Study 1 student, Thomas, who had a negative level during the instructional phase, was reversed by repeating lesson 5. The variability in postinstruction performance for students in Study 2 is therefore not surprising, given what prior research has noted—fluency is facilitated by planned routines that are efficient and systematic (Kubina, 2005). In other words, the intervention lacked the systematic planning needed for effective progress monitoring to document the need for additional instructional time.

### Implications for Practice

Although results varied across the two studies, student performance does indicate that the students learned the POW + TREE strategy to write a persuasive response. Planning for delivery of evidence-based instruction in secondary settings is complex (Deshler et al., 2007). It is critical, however, that interventions be planned to supplement instruction without supplanting other learning experiences. Additionally, the effects of accommodations (i.e., typing) for learning a new skill should be well thought out. This issue is especially important for students who may not have established confidence with the accommodation.

Instruction for quick writing in the two studies included all elements of effective SRSD instruction. Graham and Harris (2003) note that for students with severe writing difficulties, all stages of strategy acquisition and self-regulation procedures are required for improving students' writing performance. Furthermore, instruction should be criterion based and recursive. As noted previously, the teacher should repeat lessons, remodel skills, and provide sufficient guided practice to foster learning for all students.

Careful monitoring of student progress is also needed (a) to document that students have truly learned skills to mastery and (b) to ensure that students will maintain performance at criterion levels. Harris, Graham, Mason, and Friedlander (2008) recommend that booster sessions be provided for students who struggle with writing tasks. For quick writing, guided practice booster sessions that include teacher prompting and immediate feedback can be critical for maintaining the quality and fluency of performance. It is well established that after students have acquired a behavior, the next stage of learning is proficiency or fluency (Alberto & Troutman, 2009; Mercer & Mercer, 2004). It is therefore recommended that systematic instruction be designed to support student learning for practicing the skill of quick writing once a planning strategy (e.g., POW + TREE) producing a quality response has been learned.

### Conclusions

Future research should examine methods for training research instructors and teachers in effective support and monitoring procedures for guided practice. Replication of research, with additional documented guided practice, needs to be conducted. Furthermore, study participants were primarily students with LD. Researchers need to explore the effects of the intervention with other student disability populations. Future research should also examine quick writing for students with disabilities across text genres, in conjunction with text reading, and in the general education content classroom.

SRSD instruction for the POW + TREE persuasive writing strategy can effectively improve the quick writing skills of middle school students with disabilities. In the two studies, performance effects were noted to be stronger when guided practice with appropriate performance monitoring was implemented. This finding provides evidence for the critical nature of practice in developing writing to a timed task.

### Appendix A. Sample Quick Write Prompts for the POW + TREE Strategy

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Set A	Should students your age have cell phones? Explain why or why not. Is it better to walk or ride in a bus or car to school? Explain your answer.
Set B	Should students your age go to school in the summer? Explain why or why not. Is it more fun to play video games with a friend or by yourself? Explain your answer.
Set C	Should students your age have their own computer? Explain why or why not. Is it better to have a healthy snack or a dessert snack after school? Explain your answer.
Set D	Should students your age be given a laptop computer for school? Explain why or why not. Is it better to have a few close friends or lots of friends? Explain your answer.
Set E	Should students your age be allowed to chew gum in school? Explain why or why not. Is it better to complete homework in pencil/paper or on the computer? Explain your answer.
Set F	Should students your age be allowed to select their own clothes? Explain why or why not. Is it more fun to go shopping at the mall or a big superstore like Wal-Mart? Explain your answer.
Set G	Should students your age be allowed to choose what TV shows they watch? Explain why or why not. Is it better to go to bed early at night or late at night? Explain your answer.

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## Appendix B. Scoring Guide for Parts

Belief/topic sentence: 1 point maximum

Student must write a belief and make reference to the topic.

Reason: 1 point for each new supporting reason—no maximum limit

Reason must support position stated in belief.

A reason can be stated in its own sentence.

One sentence can include multiple reasons.

Do not count the same reason more than once.

Count items that fall under one category as one reason; but if the list contains items that could fall into different categories, then count the number of categories as reasons.

If a reason supports opposing position, give 1 point for counterargument (see below).

Explanation: 1 point for each new explanation—no maximum limit

Explanation must clarify why or how the reason supports the student's argument.

If the same explanation is used more than once, only count one time.

The explanation may be tagged at the end of the reason sentence.

The explanation may be its own sentence.

A student can give two explanations for one reason.

Counterargument: 1 point maximum

An actual argument/reason must be provided; stating the opposite side does not count.

No additional points for explanations or additional counterarguments.

Ending

Statement clearly indicates that the response has ended and restates belief on the topic.

Developed by Elizabeth Benedek-Wood.

## Notes

1. Effect sizes for group studies are considered to be small (0.20), medium (0.50), or large (0.80) as suggested by Cohen (Huck, 2000).
2. For single-subject design studies, 90% is considered a large effect; 70% to 90%, a medium effect; and 50% to 70%, a small effect (Scruggs et al., 1987).
3. All student names for Study 1 and Study 2 have been changed. Parental consent and student assent were obtained with approval from the university's internal review board and school system's board of education.

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### About the Authors

**Linda H. Mason**, PhD, is an associate professor in the special education program at The Pennsylvania State University. She currently conducts research on writing and reading comprehension instruction for students with mild disabilities.

**Richard M. Kubina Jr.**, PhD, is an associate professor in the special education program at The Pennsylvania State University. His current research interests include measurably effective curricula and the effects of behavioral fluency within educational and social settings.

**Raol J. Taft**, MEd, is an assistant professor of special education at the University of Missouri–Kansas City. His current interests include idea generation in students with mild disabilities and the student–teacher relationship for students with behavior disorders.