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Using Self-Regulated Strategy Development with At-Risk Writers with Asperger Syndrome

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Using Self-Regulated Strategy Development with At-Risk Writers with Asperger Syndrome

by

Lindsay M. Booker

A DISSERTATION

Presented to the Faculty of

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In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

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(School Psychology)

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USING SELF-REGULATED STRATEGY DEVELOPMENT WITH AT-RISK WRITERS WITH ASPERGER SYNDROME

Lindsay M. Booker, Ph.D.

University of Nebraska, 2013

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The purpose of this study was to investigate the effectiveness of implementing the Self-Regulated Strategy Development (SRSD) model of instruction (Graham & Harris, 2005; Harris & Graham, 1996) with a population of middle school students with Asperger syndrome (AS). A multiple-baseline design across participants was used to examine the effectiveness of the SRSD instructional intervention on writing skills and self-regulation, attitudes, self-efficacy, and social validity. Each participant was taught SRSD story writing strategies, and wrote stories in response to story prompts during the baseline, instruction, post-instruction, and maintenance phases. Stories were assessed for writing quantity (TWW), writing quality (%CWS), and story completeness (number of story elements). All participants also completed a writing attitude survey, a writing self-efficacy scale, and a social validity measure. Results indicated that SRSD can be a beneficial intervention for students with AS. All participants wrote stories of greater quantity, quality, and demonstrated more completeness following SRSD instruction. Participants also showed improvements in writing attitude and self-efficacy following the intervention and reported satisfaction with the intervention.

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CHAPTER 1

Review of the Literature

Cognitive Processes in Writing

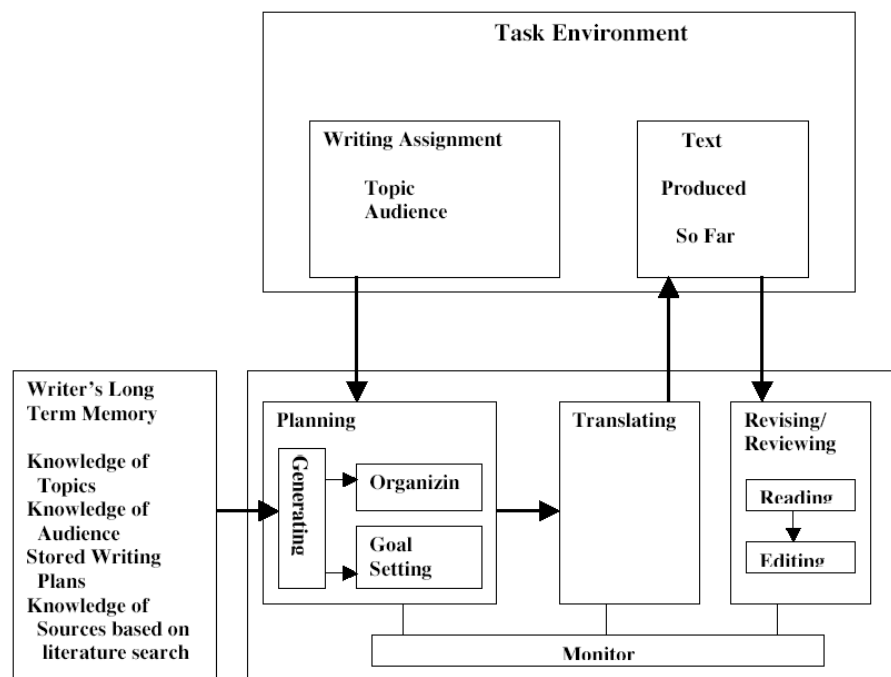
Skilled writing requires a person to manage multiple cognitive processes simultaneously. For below average writers, including students with disabilities, difficulties stem from not only a lack of necessary knowledge about the writing process, but also challenges with higher level cognitive processes believed to underlie effective composition (Flower and Hayes, 1981; Graham, Schwartz & McArthur, 1993). For more than 30 years, cognitive psychologists have worked towards developing models to provide greater understanding of the processes involved in the development of writing. The following section will outline three key models of cognitive writing processes. These models include Flower and Hayes Cognitive Process Theory of Writing (Flower & Hayes, 1981), Hayes' revision of the original Flower and Hayes model (Hayes, 1996), as well as Berninger and Swanson's modifications to the original theory (Berninger & Swanson, 1994).

Flower and Hayes: Cognitive process theory of writing (1981). Flower and Hayes (1981) presented a theory of the cognitive processes involved in writing. Their findings originated from work with protocol analysis, asking adults to “think aloud” while composing as they generated a comprehensive model of the writing process. This model consisted of three major elements: the task environment, the writer's long term memory, and the writing processes. The *task environment* includes all of the external factors outside of the writer, including the text produced, as well the elements contributing to the writing task, such as the topic, audience and other environmental stimuli. The writer's *long-term memory* stores not only knowledge about the topic, but also knowledge about the audience and the intended writing plan and representation of

the problem. Finally, the *writing processes* element emphasized the contribution of specific writing processes to the composition of text. These processes include planning, translating (composing), and reviewing; all of which are supported by the mental activities of generating and organizing ideas and setting goals.

Figure 1

Cognitive process model of writing (Flower & Hayes, 1981)



Flower & Hayes' (1981) theory was organized using the proposed model, leading to the development of four key hypotheses:

1. Writers organize a set of distinctive thinking processes during the writing process
2. These processes have a hierarchical, highly embedded organization
3. Writing is a goal-directed thinking process, guided by a developing network of goals
4. Writers both generate and modify high-level goals and supporting sub-goals

Writers organize a set of distinctive thinking processes during the writing the process.

To begin the process writers must respond to the writing task, or rhetorical problem, presented to them, such as a school assignment or writing a newspaper article. Flower and Hayes (1981) define the problem as a complex task requiring the writer to balance the demands of not only the rhetorical problem, but also incorporating an awareness of the intended audience and the writer's goals. This process is guided by the text produced from the writer's own accumulated knowledge as well as the support of additional resources. Furthermore, goal setting is integrated through the development and modification of major and sub-level goals. Finally, writers translate ideas into written text, while balancing the formal lexical and syntactical requirements of writing. Throughout, writers must review, evaluate, and modify their writing while monitoring their progress through the writing process.

These processes have a hierarchical, highly embedded organization. Progression through the writing process, despite first impressions, is not rigid or occurring in a fixed order. Rather, specific processes may be incorporated at any time, and embedded within other processes, as necessary. For example, planning and organization may occur at the overall product, paragraph, or sentence level and additionally they may be embedded throughout the writing process as needed. Furthermore, revising is an ongoing process occurring throughout the writing process, and not just at the conclusion. Flower and Hayes (1981) refer to the writing process as a tool kit, where tools can be accessed and used without constraint.

Writing is a goal-directed thinking process, guided by a developing network of goals.

Goals guide the writer through both the process and content of the writing experience. Process goals provide the instructions of how to carry out the course of writing (e.g., first, start with an introduction"), while content goals specify the information that a writer chooses to share with the

audience (e.g., “I’m going to include information on three different animals”). Goal-directed thinking incorporates an integrated network of goals. This thinking process grows into an increasingly elaborate network of goals (“write an essay on the rainforest”) and sub-goals (“describe the animals and vegetation found in the rainforest”) varied in type, and modified throughout the writing process.

Writers both generate and modify high-level goals and supporting sub-goals. Writers not only develop unique goals for the writing task at hand, but also rely on many general, standard goals of writing, such as “interest the reader” or “start with an introduction.” As a writer becomes more skilled, they can more easily generate sub-goals and modify previously used goals. It is with these two basic processes that Flower and Hayes (1981) have outlined three typical patterns of generating goals: explore and consolidate; state and development; and write and regenerate.

The first pattern, *explore and consolidate*, often occurs at the beginning of the writing process. At this point, writers often begin with high-level goals, such as defining the rhetorical problem. Using these high-level goals, writers begin to explore their knowledge and develop associations. Throughout this process, the writer begins to develop sub-goals to support the higher-level goal. Importantly, the skilled writer recognizes the need to revisit the top level goal to review the information generated from that perspective. At this point, the writer consolidates the information, and produces more complex ideas by drawing inferences and creating new concepts.

The second pattern, *state and development*, reflects much of the clear-cut work of the writing process. The process begins with a broad, high-level goal, and progresses with the development of levels of more specific, sub-goals. The writer moves from the broad

conceptualization of idea generation during the first pattern, to providing a more structured outline of the proposed writing task. Generation of goals and development of content become a reciprocal process where the initial planning and idea exploration produces goals, and generating goals contributes to additional ideas.

Flower and Hayes (1981) suggest the final pattern, *write and regenerate*, closely resembles the *explore and consolidate* pattern. The key difference in the two lies in the progression from planning ideas to producing text. The process of turning abstract ideas into concrete written text becomes a continuous process, demonstrating the reciprocity between writing and planning. The development and regeneration of goals throughout the writing processing exemplifies the learning process leading to quality writing.

The Flower and Hayes (1981) comprehensive model of a cognitive process theory of writing signifies the complex nature of producing high quality written text. The theory is built upon the basic premise of planning, writing and revising, with a hierarchical progression, and goals developed and modified through the process.

Berninger & Swanson: Modification of Hayes and Flower's model of writing (1994). Berninger and Swanson (1994) suggested that the early stages of writing are not merely a “scaled-down” version of skilled writing, but posit that the writing process for developing writing for beginners, namely children, is uniquely different than that used by skilled writers. Thus, it is suggested that the Hayes and Flower (1981) model for skilled writers does not depict the qualities unique to the developing writer. Specifically, Berninger and Swanson (1994) suggest seven modifications to the Hayes and Flower (1981) model: (a) translation has two components, (b) intra-individual differences in linguistic skills related to text generation, (c)

scope and timing in planning and revising, (d) rates of development of component processes, (e) metacognitions about writing, (f) working memory, and (g) gender differences.

First, Berninger and Swanson emphasize the progressive nature of skill development, suggesting that translation develops prior to a child's ability to participate in any planning or revising activities. Further, an emphasis is placed on translation consisting of two distinct components: text generation, involving the transformation of ideas into language representations in the working memory; and transcription, the process of translating the language representations into written text. The distinction between text generation and transcription is unique to Berninger and Swanson's view of the writing process for developing writers. While Flower and Hayes (1981) incorporate idea generation into the planning component of their model, Berninger and Swanson (1994) suggest that the two distinct categories belong in the translation component of the model, to support the fact that writing involves both discovering the language to express ideas, as well as the ability to generate ideas.

Next, Berninger and Swanson expand their discussion on text generation to suggest that this distinct component can be broken down into further unique components for producing words, sentences, and paragraphs. Further, it is suggested that the rate at which these skills develop varies across children.

Additionally, it is suggested that the scope and timing in planning and revising for developing writers is uniquely different than that of skilled writers. Regarding planning, findings suggest that while elementary students are capable of preplanning when writing, the advanced planning skills they participate in do not appear to control their translation as is outlined in Hayes and Flower (1981) model. Unlike skilled writers who set high level goals for transforming knowledge during translation, emerging writers appear to plan with a "retrieve and write" (p. 70)

strategy, without a great deal of planning. Additionally, results for revising indicate that developing writers are more likely to revise text by revising individual words, as opposed to revising text organization (Berninger & Swanson, 1994).

Since planning, translating, and revising are not fully developed in the beginning writer, it becomes necessary to further examine the rates of development of component processes in writing. Thus, Berninger and Swanson (1994) suggest that the Hayes and Flower model of skilled writing should be modified to identify which processes (e.g., planning, translating, revising), as well as which components (e.g., text generation and transcription in translation) are functioning during writing acquisition. Berninger & Swanson (1994) suggest that transcription emerges first, followed by text generation in the emerging writer, and the process of planning, translating, and revising only becomes recursive once the skills have emerged developmentally.

Furthermore, Berninger and Swanson examine metacognitions about writing from a developmental perspective. While Flower and Hayes (1981) incorporate metacognitive processes in their model, they do not specify how metacognitive knowledge influences the writing process. This examination becomes necessary for the beginning writer who is still developing metacognitive skills and knowledge. Findings suggest that metacognitive knowledge about writing, as well as metacognitive skills used for planning and revising, play a critical role in developing writing (Berninger & Swanson, 1994).

Moreover, Berninger and Swanson (1994) examine the role of working memory in writing development, which was not included in the Hayes and Flower (1981) model of skilled writing. Their findings suggest that, for older children, the verbal working memory system influences the writing process through active construction of sentences, as well as through recall of information from memory during text generation. Finally, while Hayes and Flower (1981) did

not examine gender differences in their model, it was suggested that gender plays a crucial role in early writing acquisition. In early grades, boys outperform girls in oral verbal fluency, while girls outperform boys in orthographic fluency, number of words, and number of clauses produced in narrative and expository compositions. Interestingly, in later grades, the gender differences for verbal fluency diminish, but remain for orthographic and written fluency (Berninger & Swanson, 1994). Thus, these results suggest that the rate of development of the transcription sub-component of translation is different for boys and girls; however, the rate of development of the text generation sub-component is comparable.

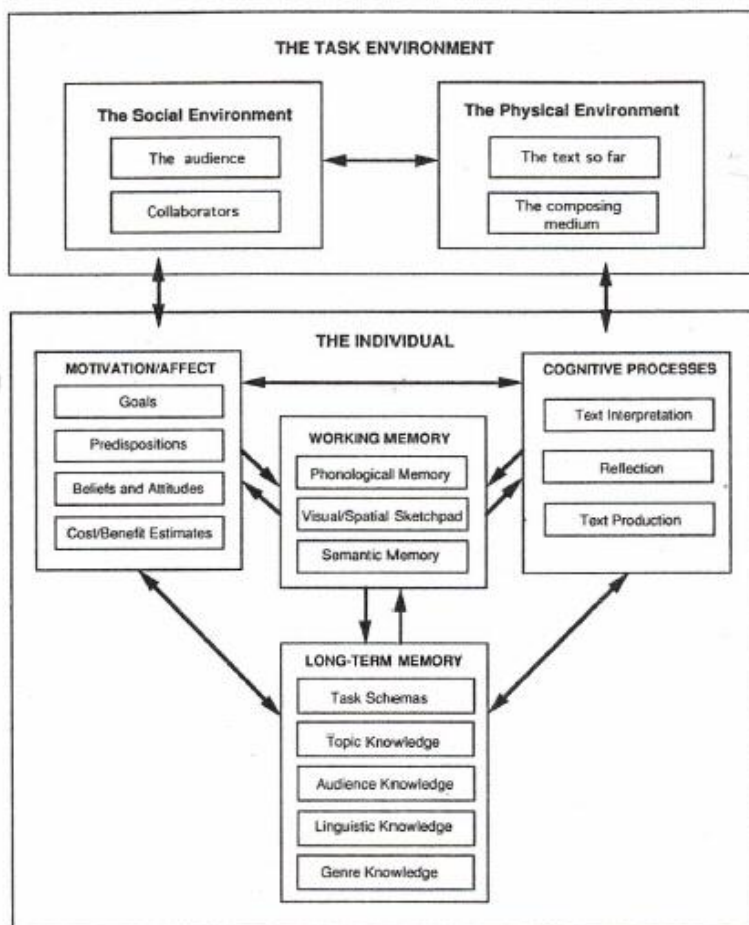
Overall, Berninger and Swanson (1994) evaluated the application of the Hayes and Flower (1981) model to developing writers, and suggested a number of modifications to extend the use of the model to a different population of writers. The unique qualities that differentiate developing writers from skilled ones are emphasized, and the Hayes and Flower's framework is modified.

Hayes: Revised Cognitive Process Theory of Writing (1996). Nearly 15 years following the introduction of Flower and Hayes (1981) cognitive model of writing, Hayes (1996) presented a new model to further clarify the critical mechanisms of writing. Hayes' new model has two major components: the task environment and the individual. The task environment consists of both a social and physical environment. The social component is made up of the audience and other collaborators in the writing process (e.g., other texts the writer may read), while the physical component includes the text produced by the writer, as well as the medium in which the text is produced (e.g., word processor). Hayes also expands on the role of the individual in the writing process. Importantly, the individual incorporates aspects of motivation and affect, cognitive processes, working memory, and long term memory. In Hayes modified

presentation of the original model, he conceptualizes a transition from the original social-cognitive model, to a new individual-environmental model. Specifically, Hayes (1996) outlines four major differences to the new model: (a) an emphasis on the central role of working memory in writing, (b) the incorporation and understanding of visual-spatial and linguistic representations, (c) greater emphasis on motivation and affect, and (d) major reorganization to the cognitive process section of the model.

Figure 2

Updated cognitive process model of writing (Hayes, 1996)



Working memory. Hayes acknowledged that the original model devoted little attention to the process of working memory. The modified model recognizes that all of the processes

incorporated in the model have access to, and regularly draw information from, the working memory. Further, Hayes places working memory centrally in the new visual representation of the model to emphasize the important contribution of working memory to the activity of writing. Hayes draws on the work of Baddeley (1986) in providing a detailed description of the process of working memory, and its role in the storage and retrieval of information. He further describes the important functions of retrieving information from long-term memory and managing tasks related to writing that are not fully automated, or that require problem solving or decision making.

Visual-spatial and linguistic representations. One of the key additions to the updated model is an incorporation of the important role that visual representations contribute to the writing process. Hayes (1996) suggests that many written products, including journals, textbooks, magazines, newspapers, and instructional manuals often include visual representations of content, such as graphs, tables, and figures. Further, he suggests that these visual representations are often essential to understanding the meaning of the text. Thus, to understand the frequent texts encountered in the environment, it is crucial to understand the visual and spatial features. In discussing the importance of working memory, Hayes (1996) placed emphasis on the two specialized memories: the phonological loop, which stores phonologically coded information, and the visual-spatial sketchpad, which stores visually or spatially coded information. This clear distinction between two unique types of coded information stresses the importance of not only written information, but visual as well.

Motivation and affect. In his discussion of motivation, Hayes (1996) identified the important role motivation has in writing; however, he admits that motivation often is not seamlessly integrated into current social-cognitive models. In his revised model, Hayes added a

motivation/affect component to the model to reflect the contribution of writers' goals, predispositions, beliefs, and attitudes to the writing process. Hayes expands further on the interaction among goals (e.g., content goals and process goals) throughout the writing process, emphasizing that writers frequently have more than one goal when they write.

Cognitive Process. Another specific modification to the model includes a major reorganization to the presentation of the primary cognitive functions underlying writing. Specifically, Hayes discusses text interpretation, reflection, and text production. In contrast to the original Flower and Hayes model (1981), the term revision has been replaced by text interpretation. Additionally, the term planning has been modified to be understood more broadly under the general category of reflection. Reflection incorporates the problem solving, decision making, and inferring processes that produce internal representations throughout the writing process. Finally, the original term translation has been updated to represent a more general process of text production. Text production is the process that transfers the internal representations previously identified in the task environment into written, spoken, and graphical products. Hayes (1986) places emphasis on the importance of the role of spoken language in a writing model, as oral language plays a crucial role in developing content and receiving feedback.

Hayes modifications to the original cognitive model of writing provide a number of important updates to emphasize critical contributors to the writing process. Specifically, a greater understanding of the impact of short term memory was incorporated to expand the previous model component of long term memory. Additionally, Hayes discusses the importance of the visual representations that are commonly integrated throughout written products, and the crucial role they serve in understanding meaning and content. Further, an expanded dialogue regarding

the influence of motivation was also incorporated. Finally, Hayes reorganizes the presentation of the cognitive functions underlying the writing process, incorporating some changes in the key terminology used. Overall, Hayes' (1996) updated framework for understanding cognition and affect in writing brings to light some key changes in an evolving understanding of the complexities of the writing process.

Flower and Hayes (1981), Berninger & Swanson (1994), and Hayes (1996) describe the cognitive processes required of skilled writers. Planning, writing, and revising are the primary writing tasks required from writers. For children, these skills are still in the development stage, and are not yet undertaken in a fluid and recursive manner. As a result, many children experience writing challenges in the classroom.

Writing Challenges

Writing involves a complex set of skills that require planning, drafting, self-monitoring and revising text (Saddler, Moran, Graham, & Harris, 2004). Written expression is becoming an increasingly important skill across academic and vocational areas. However, many children have difficulty with this crucial literacy skill. The 2002 National Assessment of Educational Progress (NAEP, 2003) in writing reports that only 24 % to 31% of students across fourth, eighth, and twelfth grade performed at or above the 'proficient' level. Findings indicate that for 4th grade students specifically, only 28% are writing at or above proficiency, with additional 14% demonstrating less than basic writing skills. The most recent 2007 NAEP (assessing only 8th and 12th graders) reports improvement compared to earlier assessment years; however, only 33% of eighth grade students and 24% of twelfth grade students demonstrate proficient writing skills. Even more concerning, the writing performance of 12% percent of eighth graders and 18% of 12th graders remains below a "basic" level of writing achievement (NAEP, 2008). Perhaps the

most troubling, 94% of students broadly identified with a disability, including children with Asperger syndrome, are writing at the basic or below basic level. Thus, only 6% of children with disabilities are considered to be writing at a proficient level.

These statistics demonstrate the significant challenge that writing poses to a majority of students, both with and without identified exceptionalities. As results from NAEP demonstrate, only one in five high school seniors have acquired the skills and knowledge necessary to write at grade level. Moreover, college instructors estimate that 50% of high school graduates are not prepared for the writing demands necessary in a college classroom (Achieve, Inc, 2005).

Furthermore, recent reports by the National Commission of Writing (2004) indicate that the majority of public and private employers emphasize that writing proficiency is vital to the workplace, and directly influences hiring and advancement decisions. It is estimated that greater than 30% of employers require on-the-job training in basic writing skills, and reported that private companies spend approximately \$3.1 billion annually on writing remediation, with state governments spending about \$221 million annually (National Commission on Writing, 2005).

Consistent findings in the literature suggest that writing challenges are most often due to difficulties acquiring, utilizing, and managing the strategies used by skilled writers (e.g. De La Paz, Swanson & Graham, 1998; Graham & Harris, 1996; Zimmerman & Reisemberg, 1997). More specifically, many students (a) have limited knowledge of writing, (b) use an ineffective approach to writing, (c) do not participate in advanced planning strategies, (d) have difficulty generating content, (e) infrequently make meaningful revisions, (f) struggle with transcription, (g) demonstrate minimal persistence with the task, and (h) have an unrealistic sense of self efficacy (Graham & Harris, 2005; Harris & Graham, 1996).

Characteristics and Academic Needs of Students with Asperger Syndrome

Asperger Syndrome (AS) is a unique diagnostic subcategory on the autism spectrum, only introduced in the *Diagnostic and Statistical Manual of Mental Disorders* in 1994 (Griffin, et al., 2006). The essential characteristics of AS include significant impairments in social interaction, as well as restricted and repetitive patterns of behaviors, interests, and activities (American Psychiatric Association [*DSM-IV-TR*], 2000). Children with AS often have limited interests, and are frequently preoccupied with a particular subject area, often to the exclusion of other interests or activities. Children with AS are found to frequently have special interest areas in which the child spends a great deal of time gathering and sharing information and facts (Atwood, 2008). Additionally, children with AS often participate in repetitive routines or rituals, as well as demonstrate peculiarities in speech, including speaking in an overly formal manner or in a monotone, or interpreting figures of speech in a very literal manner (*DSM-IV-TR*, 2000). Socially and emotionally inappropriate behaviors are common for children with AS, who often have difficulty with give-and-take conversations, and have difficulty interpreting emotions and facial cues from others (Kaufman, 2002). These children frequently demonstrate significant challenges with non-verbal communication, including limited use of gestures, as well as restricted or inappropriate use of facial expressions (Myles, 2005). For appropriate diagnosis, these impairments must cause clinically significant impairment in social, occupational, or other important areas of functioning (*DSM-IV-TR*, 2000).

In contrast to other autism spectrum disorders, children with AS do not exhibit clinically significant delays in early language development or cognitive skills (Moore, 2002). While children with AS frequently demonstrate impairments in the pragmatic aspects of language, the trajectory of early language development (e.g., single word use by age 2, multi-word phrases by age 3) is not significantly delayed. Furthermore, clinically significant delays are not found in the

areas of age appropriate self-help skills, adaptive behavior, and curiosity about the environment. Because early language and cognitive skills are within normal limits during the first years of life, concerns regarding development often do not arise among parents and caregivers until the preschool years, when social difficulties with same-age peers may become apparent (Klin, Pauls, Schultz, & Volkmar, 2005). Children with AS are often not diagnosed until they start attending school, with a mean age of diagnosis of 11 years (Atwood, 2008).

Recent research suggests that a growing number of students are being identified as having AS, with current prevalence rates of approximately 1 in 300 individuals (Asaro & Saddler, 2009). Furthermore, data from the U.S. Department of Education (2004) suggest that at least one-third of these students receive the majority of their educational services within the general education setting (Delano, 2007a). Due to the nature of AS, these individuals often present unique challenges in the classroom setting. Myles (2005) reported that children with Asperger syndrome present a wide variety of skills and skill deficits, which makes service delivery extremely difficult. For example, children with AS are often over stimulated by crowded environments and overwhelming visual situations (Delano, 2007a). Although the social and behavioral characteristics of children with AS has been well documented (Myles, 2005), less research has focused on how these characteristics affect a student's academic performance (Asaro & Saddler, 2009).

While these populations of students have been found to have strengths in oral expression and reading fluency, students with AS often demonstrate low math performance on items involving problem solving and critical thinking (Donaldson & Zager, 2010). Additionally, students with AS often face challenges in the classroom due to frustration with novel learning situations and difficulty understanding complex social interactions. For example, difficulties

interpreting social interactions were found to affect reading comprehension skills (Kaufman, 2002). For students with AS, academic problems often arise because of a literal thinking style, inflexibility in routines, poor problem-solving skills, poor organization skills, and difficulty discriminating important information (Delano, 2007a). These challenges are found to contribute to weaknesses in written expression (Myles, 2002).

Writing Challenges of Students with Asperger Syndrome

Myles et al. (2002) conducted a study investigating the written language skills of 16 youth diagnosed with AS and 16 typically developing peers by comparing performance on the Test of Written Language-3 (Hammill & Larsen, 1996) and the Evaluation Tool of Children's Handwriting (Amundson, 1995). Findings indicated that students with Asperger syndrome, as a group, performed similarly to the control group, yet visual analysis revealed more variability in written language performance. While it was found that students with AS produced a similar number of sentences to their peers, these sentences were shorter and less complex. The stories of the students with AS were typically short, non-descriptive, and poorly organized, demonstrating difficulty in their ability to elaborate or arrange their thoughts or provide insight into their thinking. Finally, analysis revealed significant differences in the percent of legible letters and legible words produced by the groups, with students with AS producing significantly less legible writing. These findings are consistent with reports of fine motor difficulties among children with AS (Atwood, 2008).

Often, children with AS exhibit a number of characteristics that may inhibit their ability to write effectively. Their planning skills are likely impacted by difficulties with abstract thinking and imagining possible future events and scenarios, consistent with social difficulties related to diagnostic criteria (Myles, 2005). Moreover, motor control issues that impact

handwriting, as well as difficulties with literal thinking, have been found to contribute to the unique writing challenges for these students. Furthermore, these populations of students often lack the ability to elaborate their thoughts and write in depth (Asaro-Saddler & Saddler, 2010). The characteristics of children with AS suggest that writing may be problematic, especially in the area of planning, for several reasons (Asaro & Saddler, 2009). First, these students are found to have increased difficulty organizing their thoughts and transferring them to paper, and may require extended planning time and assistance in outlining their ideas (Moore, 2002). Moreover, students with AS may require further instruction in elaborating and expressing ideas in greater detail, and are also less likely to provide casual explanations and insight into emotional states (Myles, 2005). Finally, these students may require a great deal of structure, and may exhibit restricted interests and literal interpretations of ideas that may directly impact their ability to plan and write an imaginative story (Griffin, et al., 2006). For these reasons, instruction designed to support strategic planning and organizing may improve their writing ability (Asaro & Saddler, 2009).

Because of the potential difficulties children with AS may experience during writing, there is a great need to develop and evaluate interventions for this student population (Asaro-Saddler & Saddler, 2010). Currently, there is a scarcity of writing intervention research for children with AS, even though writing is an area in which this population has considerable difficulty (Griffin, et al., 2006). Since writing skills may affect later job performance, it is important to identify effective writing interventions for these students. Finally, because children with AS commonly lack effective self-regulation, an intervention shown to improve self-regulation skills is warranted (Asaro-Saddler & Saddler, 2010; Delano, 2007b).

Effective Writing Instruction

Federal mandates from both the No Child Left Behind Act (2001) and the Individuals With Disabilities Education Improvement Act (2004) require teachers to use research-validated practices to improve student performance in all academic areas (Santangelo, Harris & Graham, 2008). Using systematic teaching approaches for academic tasks with students can help lead to the mastery of new skills and the development of independent learning (Schunk & Zimmerman, 1998).

Effective writing instruction relies on evidence-based instructional approaches for developing and increasing accuracy and fluency of skills, monitoring response to instruction, and importantly, modifying instruction when students are not responding and progressing as would be expected (Berninger & Wagner, 2008). Specifically, these instructional approaches must be applied explicitly to the planning, drafting, and revising tasks required for written expression.

One way to improve educational outcomes for children with and without disabilities is to provide exemplary writing instruction starting in elementary grades (Asaro-Saddler, & Saddler, 2010; Saddler, Moran, Graham, & Harris, 2004). Effective instruction becomes an increasingly important task to maximize overall writing development in all children, decrease the number of students who develop writing difficulties due to poor instruction, and decrease the negative long-term outcomes experienced by children with writing challenges and other academic difficulties (Graham & Harris, 2002). One effective method of addressing academic challenges is strategy instruction which has been used with students with academic challenges, and has been applied in the classroom to help students with writing difficulties.

Strategy Instruction

Strategy instruction is a student's way of organizing and using a specific set of skills in order to master content and accomplish academic tasks more efficiently and effectively in the

classroom (Santangelo, et al., 2008). Thus, classroom teachers and practitioners who teach learning strategies teach students *how* to learn, rather than only focusing on specific skills and curriculum subject matter. Strategy instruction has been shown to be an effective instructional technique in a variety of academic areas, and particularly for students with learning disabilities (Santangelo, et al., 2008). Furthermore, the incorporation of self-regulatory strategies specific to the writing process has the potential to enhance students' independent use of and application of the writing strategies necessary for accomplishing specific writing tasks (Harris & Graham, 1996). The following sections more specifically outline strategy instruction for planning, composing and revising. Additionally, the Self-Regulated Strategy Developmental (SRSD) instructional model is discussed, emphasizing the use of self-regulated strategy instruction to improve student writing.

Strategies for planning, composing and revising. Students are often asked to complete a number of different writing tasks in the classroom, including narrative writing, persuasive writing, and informational writing. Frequently, a general writing strategy can be taught, and applied to multiple contexts. For example, the planning strategy POW (Pick my ideas, Organize my notes, Write and say more) teaches students to (a) think about, brainstorm, and develop ideas prior to writing, (b) select a planning strategy to help with organizing notes, and (c) encourages students to write using a plan and reminds them to add new information during the writing process. Planning strategies such as POW are often combined effectively with other strategies for planning and composing stories, as well as for persuasive writing. See table 1 for sample strategies (Mason, Harris, & Graham, 2011).

Table 1

Strategies for Planning and Composing (Mason, Harris and Graham, 2011).

Stories	W-W-W, 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 want to do? What does the character do next? How do the characters feel? How does the story end?
Persuasive for developing writers	5-Part TREE Topic Sentence Reasons: 3 or more Ending Examine your TREE parts
Persuasive for older writers	8-part TREE Topic Sentence Reasons: 3 or more Explanations for each reason Ending
Persuasive for adolescents	10-Part Tree Topic Sentence Reasons: 3 or more Explanation for each reason a counter reason and refute Ending

As more complex writing tasks are required, including planning and composing informational text, strategies are often combined. For example, the PLAN strategy (Pay attention to the prompt, List main ideas to develop your essay, Add supporting details, Number major points) and WRITE strategy (Work from your plan to develop a thesis statement, Remember

your goals, Include transition words for each paragraph, Try to use different kinds of sentences, Exciting words) can be used to guide student informative writing. As outlined in the stages of SRSD model (see later section), each of the elements of the strategy are explicitly taught and supported for independent use (De La Paz, Owen, Harris, & Graham, 2000).

Finally, a number a revising strategies have also been validated for at-risk writers. For example, the Six Steps for Revising Strategy with SCAN for revising persuasive essays encourages students to: (a) Read your essay, (b) Find the sentence that tells what you believe. Is it clear? (c) Add two reasons why you believe it, (d) SCAN each sentence (does it make Sense, is it Connected to my belief, can you Add more, Note errors), (e) Make changes, and (f) Read your essay and make final changes (Graham & MacArthur, 1988).

Strategies for self-regulation. Self-regulatory skills including goal setting, self-monitoring, self-instruction and self-reinforcement, are best taught through explicit instruction and individualized scaffolding. Goal setting should encourage students to set specific, challenging and proximal goals, focusing on learning and using strategies. Students are encouraged to self-monitor their progress in reaching individual goals by graphing measurable gains such as total words written in a story or total number of story parts used (Mason, Harris & Graham, 2011). The final two skills are taught through monitoring, where the teacher emphasizes self-instructions for problem definition (“I need to include all 7 story parts”), focusing attention and planning (“First, I need to pick an idea”), strategy implementation (“I know I need to include all 7 story parts. Let’s check for them”), self-evaluation (“Are they all there?”), coping (“I know I can do this, I know the POW + W-W-W strategy!”), and self-reinforcement (“Awesome! That is a great story!”). Self-reinforcement should be emphasized for successes during both during planning and composition Further, self-reinforcement is naturally enhanced when students

observe progress on their graphs. Students can develop a list of self-reinforcement statements to reduce frustration and increase motivation during instruction.

Strategy instruction and self-regulation within the context of writing helps students simplify and organize the complex tasks of planning, generating and revising written text. Furthermore, strategies can help simplify the mental operations that occur during writing, while at the same time maintaining that tasks are visible and concrete. Research points to strong support for SRSD (Harris & Graham, 1996), targeting the skills of planning and writing a story.

Self-Regulated Strategy Development

Self-regulated strategy development (SRSD) (Graham & Harris, 2005; Harris and Graham, 1996) is an instructional strategy approach to writing, designed to improve a writer's knowledge, self-regulatory behaviors, and motivation. The primary goals of SRSD include helping students master the higher-level cognitive processes of composing written text, while developing autonomous, reflective and self-regulated use of effective strategies for writing. SRSD focuses specifically on helping a writer develop the knowledge and self-regulatory procedures (including goal setting, self-monitoring, self-instruction and self-reinforcement) necessary to utilize writing strategies while composing a story (Mason, Graham, & Harris, 2011). One of the strengths of the SRSD approach is the intent of targeting specific motivational aspects such as self-efficacy and effort that are crucial to successfully navigating the writing process.

The SRSD approach progresses through six stages of instruction: (1) developing and activating background knowledge, (2) discussing the strategy, (3) modeling the strategy, (4), memorizing the strategy, (5), supporting strategy use, and (6) independent performance. See table 2 for a description of each of the stages. The following section will summarize each of the

six stages. For a more detailed summary of Self-Regulated Strategy Development (SRSD), refer to Harris & Graham (1996) and Graham and Harris (2005).

Table 2

Stages of the Self-Regulated Strategy Development Model (Graham & Harris, 2005; Harris and Graham, 1996)

Stage	Description
1. Develop Background Knowledge	Existing background knowledge is identified and taught, ensuring that students have the knowledge and skills necessary to learn and apply the strategy.
2. Discuss It	Students examine their current writing performance and discuss the benefit and commit to using the new strategy.
3. Model It	The teacher models the use of the new strategy using “think- alouds” and visual aids to enhance student learning
4. Memorize It	Students memorize the steps of the strategy using visual aids and mnemonics.
5. Support It	Students practice the writing strategy with support and scaffolding from the teacher.
6. Independent Practice	Students use the writing strategy independently

Stage one: Develop background knowledge. The introductory stage of the SRSD model is focused on ensuring that students have the necessary background knowledge and prerequisite skill, such as vocabulary (e.g., setting, character, plot) and concepts, to learn and apply the strategy and self-regulation skills successfully. To support this goal, teachers must ensure adequate identification and assessment of these pre-requisite skills. Additionally, stage one provides an opportunity to introduce the development of individualized self-statements. The

teacher and the student work collaboratively to develop self-statements relevant to writing and individual student needs. Emphasis should be placed on the benefits of using self-instructional statements (e.g. okay, next I need to...) and self-talk (e.g., Great job! I remembered all the steps), throughout the writing process.

Stage two: Discuss it. Stage two begins with an examination and discussion of the student's current writing performance, as well as a discussion of the student's existing writing strategies, if any, and their perceptions of writing. Stage two is an opportune time to introduce graphing of performance. Certain aspects of strategy instruction or goals attainment can be graphed, including number of words written or number of common story parts used. By introducing graphing as a self-monitoring skill early on, students are even more prepared for both further self-monitoring, as well as goal setting. Next, a specific strategy is introduced (e.g., story planning), with any corresponding mnemonics, and the benefit and purpose are investigated. Students make a commitment to learning the new strategy and working collaboratively throughout the process. Additionally, focus should be placed on examining and modifying the maladaptive beliefs and behaviors of the student.

Stage three: Model it. The focus of stage three of the SRSD model is to demonstrate the effective use of the strategy and accompanying self-regulation techniques. Visual aids and "think aloud" techniques (e.g., "I'm going to remember all seven story parts this time!") have been found to support acquisition of the skills and strategies. Ongoing discussions should occur between teacher and student regarding benefits, challenges and modifications to the strategies that may make them more appropriate or effective for the student. Modeling occurs while the student and teacher collaboratively produce a composition. This stage is also an ideal time for students to continue to develop and further record the personal self-statements they plan to use to

support strategy use (e.g., “I can do this!”), and discuss other frustrations throughout the writing process. Types of self-statements can be further introduced, including problem definition (“What is it I have to do here?”), focusing attention and planning (“I have to pay attention! First I need to...”), strategy-step statements (“Don’t forget to write down your steps!”), self-evaluation and error correction (“Oops. I missed a story part, better find a spot for it”), coping and self-control (“I need to slow down and take my time.”), and self-reinforcement (“That was a great word to include!”). Finally, goal setting should be introduced during stage three, and students are encouraged to develop performance goals to improve their writing (e.g., “I will include an introduction, a body and a conclusion in my writing”). The “model it” stage of SRSD, as with all stages, is individualized to the needs of each student. Additional models of the strategy and self-regulation techniques may be included, as necessary.

Stage four: Memorize it. The goal of stage four is to have students memorize the steps of the specific strategy, and their individualized self-statements. Each SRSD strategy has an accompany mnemonic, such as WWW, What = 2, How =2 for the narrative writing strategy, where each letter represents a specific step (Who is the main character? When does the story take place? Where does the story take place? What does the main character want to do? What does the character do next? How do the characters feel? How does the story end?) Often, visual aids, such as posters or index cards listing the steps or the statements can be beneficial to memorization. Memorization of the specific components is imperative for efficient use of the strategy. For some students, this may come easily, and this stage may not be necessary, or becomes combined with previous stages.

Stage five: Support it. Stage five emphasizes practice using the new strategy and accompanying self-regulatory techniques that were introduced (e.g., progress monitoring, goal

setting, self-instructions, positive self-statements). In this stage, the teacher provides the necessary scaffolding to meet the needs of individual students, and scaffolding is faded as students demonstrate increased skill in using the strategy and techniques. Scaffolding may consist of direct instruction in the use of a specific step, additional modeling, subtle reminders to embed self-regulatory techniques, additional practice opportunities, corrective feedback and additional positive reinforcement and praise. The level of support necessary is driven by individual student need, but due to support received, performance should be high. As students develop the skills and implement strategies effectively, prompts and guidance are faded at an appropriate pace. As the goal of the *Support it* stage is to move students toward independent skill development and use of the specific strategy, the length of this stage may vary considerably based on student need and difficulty.

Stage six: Independent performance. The final stage of the SRSD model is designed for students to demonstrate independent use of the writing strategy. As students become skilled at using the writing strategy, use of the mnemonics and self-regulatory strategies may continue, but can begin to fade to an as-needed basis. Students are further encouraged to transition to covert use of self-instruction, if not achieved already. Additional review or booster sessions may become necessary to ensure maintenance of skills.

The six stages of the SRSD model are designed as a flexible framework to introduce and enhance strategy development in the writing process, and are designed to be re-ordered and modified to meet individual student need. Self-regulatory strategies including goal setting, self-monitoring, self-instruction and self-reinforcement are used to encourage generalization of writing and other academic skills (Graham & Harris, 2005; Harris & Graham, 1996). Additionally, modeling and scaffolding are used to support student success and promote

independent skill development. The strategies of the SRSD approach are designed to serve as a ‘metascript’ that a teacher should modify to meet individual student needs. SRSD is intended to be a flexible instructional model, complying with federal mandates to use research validated practices to improve student academic performance in the area of writing (Santangelo, et al., 2008).

Research on SRSD

The SRSD model is a strategy instruction intervention that has been used successfully with both below average and successful writers. Further, it has been used to teach a number of planning and composing strategies to students with and without disabilities. Over the last 20 years, SRSD has documented improvements in writing knowledge, strategic behaviors, self-regulation skills, and motivation in over 40 studies (Tracy, Reid & Graham, 2009; Danoff, Harris, & Graham, 1993; De La Paz, 1999; Graham and Harris, 1989). Specifically, SRSD has been found effective in teaching brainstorming and idea organization, content generation, and editing and revising skills (Santangelo & Olinghouse, 2009). Furthermore, SRSD has improved the writing performance of students with a range of abilities including learning disabilities (e.g., Saddler et al., 2004), attention deficit hyperactivity disorder (e.g., Reid & Lienemann, 2006), at-risk writers without a disability (e.g., Santangelo & Olinghouse, 2009), and typically achieving writers (De La Paz & Graham, 2002). Specifically, results of studies using SRSD with students with learning disabilities indicate that when these students are taught writing strategies and self-regulatory procedures (e.g., goal setting, self-monitoring, and self-reinforcement), both the quantity and quality of their writing improves (De La Paz & Graham, 2002).

Three recent meta-analyses (Graham, 2006; Graham & Harris, 2003; Graham & Perin, 2007) indicated that SRSD has consistently contributed to improvement in overall writing quality

and demonstrated the highest averaged weighted effect size of any of the writing interventions studied. Although early instructional interventions in writing have demonstrated effectiveness with students with writing disabilities in general (Danoff, Harris & Graham, 1993; Saddler, et al., 2004), as well as for students with learning disabilities (Saddler, et al., 2004), there has been little research conducted with at-risk writers with other disabilities, including those with Asperger Syndrome (Asaro-Saddler, & Saddler, 2010; Asaro & Saddler, 2009).

Using Self-regulated Strategy Development for Students with Asperger Syndrome

Historically, academic and intervention research has explicitly excluded participants with Autism Spectrum Disorders, including AS, from their samples (e.g., meta-analysis by Graham & Perin, 2007) due to the unique learning needs of these students. To date, only five studies have examined the impact of writing instruction with a population of students with Asperger Syndrome (Delano, 2007a; Delano, 2007b; Asaro & Saddler, 2009; Asaro-Saddler & Saddler, 2010, Asaro-Saddler & Bak, 2012). While limited, results appear to be promising and warrant a need for continued research in this important area. Each of these studies has incorporated the SRSD instructional approach to teaching writing with this unique student population.

Delano (2007a) was the first to use the SRSD approach with a middle school student with AS. In this single subject design study, the student was taught two vocabulary strategies for increasing the use of action and describing words, as well as a revising strategy. Following phase one of strategy instruction targeting action words, the student increased total written words from 11 words, including only one or two action words, to an average of 26 total words, and 6.7 action words. Following phase two of instruction targeting describing words, the student increased total written words to an average of 47 words per story, as well as increased describing words from zero to an average of 6.3. Finally, following phase three of instruction targeting a revision

strategy, the student increased to an average of 84 total words, 13.6 describing words, and 7.6 action words. Total number of revisions following strategy instruction also increased from zero to three during this phase. Overall story quality, as measured by a quality rating score ranging from a score of 1 to 7, increased from a score of 1 at baseline, to a score of 2.6 after phase one, 3.6 after phase two, and 5.0 following phase three of strategy instruction. One two week follow up probe was administered, and gains in performance were maintained.

Results of this study indicate that SRSD was an effective intervention for increasing both the quality and quantity of the participant's writing. However, the study presents a key limitation of having only a single participant, making it difficult to rule out possible alternative explanations for increased performance (e.g., classroom instruction and motivation), and demonstrate experimental control. Delano (2007a) suggests future studies should utilize multiple baseline and group designs, as well as focus on issues of maintenance and generalization.

Delano (2007b) expanded the results of the initial study by utilizing the SRSD approach, in combination with a video modeling strategy, to teach persuasive writing to three adolescents with AS. For this follow up study, Delano (2007b) used a multiple baseline design across responses (words written and functional essay elements) and increased the sample size from one to three participants. Phase one of the intervention had each student participate in one 30-minute session with the experimenter to record a video of the student modeling a self-monitoring strategy. In subsequent sessions, the student viewed the video about self-monitoring. When the performance criteria of at least a 10% increase in total words written was observed across three subsequent sessions, the student moved on to phase two of the intervention portion of the study. Phase two of the intervention had each student participate in an additional 60-minute session with the experimenter to record a video of the student modeling the use of a persuasive essay

writing strategy, using the mnemonic TREE (note topic sentence, note reasons, explain each reason, note ending). Similar to phase one, subsequent intervention sessions had the students view their individual videos of themselves using the persuasive essay writing strategy. Additionally, a generalization probe was used during each phase of the study, where each student was given an expository writing prompt as opposed to a persuasive writing prompt.

Results from the study indicated an increase in the number of words used, time spent writing, and number of essay elements across all three students. Both number of words written, and time spent writing increased for all three participants. The number of functional essay elements only increased when specifically targeted during phase two of the intervention, and increased for all participants. Finally, number of words used and time spent writing also increased during phase two. Similar results were observed for generalization probes. However, follow up measurement over a twelve-week period indicated that results were not maintained over time.

Delano (2007b) enhanced this follow up study by incorporating a multiple-baseline design across responses with three participants. Additionally, the maintenance phase was lengthened from one follow up probe conducted two weeks post intervention, to four follow up probes across a twelve week period. However, Delano (2007b) suggests future studies should consider conducting a component analysis to evaluate the contribution of self-modeling and strategy instruction in isolation, as it was not possible to contribute the results of the current study to any one component of the intervention. Additionally, it is important for future research to examine the use of SRSD without self-modeling, as this can be a complex and time consuming intervention.

Asaro & Saddler (2009) used the SRSD model to teach one fourth grade student with AS to plan and write a story using the POW + WWW, What =2, How = 2 mnemonic. Each story was evaluated for the number of basic story elements and overall holistic quality. At baseline, the student's stories included an average of three story elements and received a mean score of 1.5 on the 8-point holistic quality rating. Additionally, the student participated in no planning. Results of this study indicated that the student increased the number of words written, the number of story elements included, and the overall holistic quality of his stories after learning the strategy. The four posttest stories included an average of six story elements, and a holistic quality rating of 4.6. Additionally, there was evidence that the student utilized the strategies taught by writing the story elements mnemonic on the bottom of his page, and crossing out the corresponding elements as they were used. Maintenance was sustained in one post-treatment measure. Overall, the SRSD intervention had a positive effect on the student's overall writing performance. However, similar to Delano (2007a), the current study used only one participant, limiting the experimental control and ability to exclude possible extraneous variables as responsible for increases in performance. Additionally, writing production, as measured by total words written was not explicitly measured, although implied to have increased with an increase in total story elements.

Asaro-Saddler & Saddler (2010) conducted a second single-subject study that examined the effects of a planning and self-regulation strategy on the story writing of three students in the second and fourth grade (one with AS and two with a diagnosis of autism). This study extended the current research by using a larger sample of children with autism spectrum disorders (ASD), and by targeting a younger population of students. Asaro-Saddler & Saddler (2010) used a multiple baseline design across participants to evaluate the effectiveness of POW + WWW,

What =2. How + 2, the same planning and story writing strategy used in Asaro & Saddler (2009). Number of story elements, overall holistic quality, number of words, and planning time were used as evaluative measures throughout the study. Each of the three students increased performance on all four variables. From baseline, number of story elements, holistic quality, and number words increased for all participants at posttreatment. Similar to Delano (2007b) a generalization probe, targeting personal narrative writing was used to determine transfer of the strategy to a different genre of writing.

Similar trends were observed for generalization probes, across variables of story elements, holistic quality, and number of words. Finally, all three participants increased planning time from baseline to posttreatment. Results for planning time were not reported for generalization probes. One maintenance prompt was administered four weeks posttreatment, and gains from baseline were observed across all participants.

Finally, Asaro-Saddler and Bak (2012) conducted a third single-subject study using a multiple-baseline design across participants that examined the effects of an intervention targeting planning and self-regulatory strategy use on the persuasive writing of three third and fourth grade students with high functioning autism. This study extended the current research by training special education teachers to deliver the intervention and using SRSD to teach persuasive writing using the POW +TREE strategy. Asaro-Saddler and Back compared three persuasive essays at baseline to three post-intervention samples, and results revealed increases in holistic quality for all three participants. Evidence of planning and self-regulation was noted for all three participants, on all three post-intervention probes, whereas planning was not noted on any baseline probes.

Results of this study, consistent with all four previous studies, demonstrated that writing instruction utilizing the SRSD approach improved overall writing for students with an autism spectrum disorder. Asaro-Saddler's two most recent studies (2010, 2012) expanded the population of students to include students with an autism diagnosis, as opposed to only students with AS. Additionally, Asaro-Sadler & Bak (2012) demonstrated that special education teachers can learn to implement the SRSD intervention with high fidelity with limited training and consultation (2 professional development sessions). Similar to previous recommendations, further research using SRSD with students with AS speaks to the need for larger sample sizes and the use of multiple-baseline designs to evaluate the effectiveness of the intervention with this unique population.

Each of these five studies incorporated a range of 6 to 12 intervention sessions; although, the length of the sessions varied from study to study, making comparisons challenging. However, across the intervention phase of the study, students moved through the lessons at their own pace, contributing to variability in the number of sessions completed across participants and across studies. While research in this area is limited, preliminary findings suggest that an SRSD approach to writing instruction appears to be a promising intervention for students with AS.

Due to the unique needs and challenges in the area of writing presented by a population of students with AS, a number of implications and recommendations for practice are warranted. Firstly, Graham & Harris (2003) identify one of the essential characteristics of SRSD as being a structured intervention that is flexible to accommodate individual learning needs. While this quality is of value to *all* learners, this characteristic is particularly valuable for learners with AS, who benefit immensely from clear structure and expectations in learning tasks. Students with AS thrive on structure and routine, and SRSD's use of tools including mnemonics and other scripted

instructions meets the needs of this unique student population. Additionally, students with AS frequently need assignments broken down into smaller amounts of information, and need nonverbal signals incorporated to help them refocus (Griffin, et al., 2006). The goal of the SRSD six-stage approach is to break a complex writing task down into manageable pieces, and reduce the overwhelming nature of writing tasks for many students. The required memorization of learning strategies (including the use of mnemonics) and incorporation of self-regulatory strategies, such as self-talk, also provide a student with AS the necessary non-verbal cues to help increase focus and on-task behavior. Asaro-Saddler & Saddler (2010) reported that a mnemonic device incorporated into the SRSD approach and used to teach the steps of the strategy and to organize story elements was the most important part of the strategy for the participant in their study, as many students with AS require information that is presented in a concrete manner.

Thus far, the use of SRSD for writing is limited with a population of students with AS. Recommendations from current studies speak to the need for larger sample sizes, using a multiple baseline design to evaluate intervention effectiveness. Further, additional measures of writing quality should be incorporated as well. Additionally, no studies have included a social validity measure assessing student impressions regarding the impact of the intervention.

Purpose of the Proposed Study

As federal education policy requires the use of research-based educational strategies within the classroom, one must consider the increased needs of a diverse population of young learners, including a growing population of students with Asperger syndrome. While research in the area of reading and mathematics continues to grow, an increased need for focus on high quality written expression continues to be apparent. Though research in this area is still limited in comparison to evidence-based intervention in other academic subject areas, a strong evidence

base for Harris & Graham's (1996) Self-Regulation and Strategy Development approach to writing is evident. While SRSD literature has now grown to include students with AS, further research is warranted to provide evidence of the success of SRSD in improving the writing of this unique student population.

While limited in quantity, current research investigating the use of the SRSD writing approach with students with AS has demonstrated encouraging findings. Results related to increases in both the quantity and quality of overall writing production is encouraging. However, more empirical studies are needed that evaluate interventions to improve the academic functioning of students with AS (Delano, 2007a). Furthermore, preliminary findings indicate that the organization and scaffolding provided within the SRSD framework might be particularly beneficial to children with AS because of their need for structure and clear, literal directions (Asaro & Saddler, 2009). Academic interventions that provide explicit strategies for success, while also addressing the student's motivation and perception of his or her ability to meet task demands, are likely to be effective with a population of students with AS. The SRSD model is such an intervention (Delano, 2007a). The proposed study intends to evaluate the use of SRSD to improve the writing skills of at-risk young writers with AS.

Research Questions and Hypotheses

The current study aims to expand on the results of previous studies showing that SRSD instruction leads to improvements in students writing performance with a sample of young writers with AS. Specifically, the proposed study will expand on the methodology of previous studies by using a multiple-baseline design across participants to evaluate the effectiveness of the intervention. Additionally, a measure of writing accuracy, % correct writing sequences, not previously used in the studies with this population, will be incorporated as an additional variable

to evaluate change in student performance. Furthermore, the proposed study will also evaluate student attitudes towards writing and self-efficacy about writing, as well as provide a social validity measure, which has not been previously incorporated with a population of student's with AS. Specifically, four primary research questions are proposed to extend the research in this area.

- 1) Is SRSD effective in improving the writing skills of students with AS in the areas of writing quantity (as measured by total words written), and writing quality (as measured by % correct writing sequences and number of story elements)?

As previous studies have shown that SRSD instruction contributes to improvements in writing performance for students with AS (Dealano, 2007a; Delano, 2007b; Asaro & Saddler, 2009; Asaro-Saddler & Saddler, 2010; Asaro-Saddler & Bak, 2012), as well as students with learning disabilities and other writing challenges (e.g., Danoff, , Harris, & Graham 2003; De La Paz, 1999;), similar results are expected in the proposed study. Specifically, it is hypothesized that the use of SRSD will improve the quantity of written text produced by students, measured by total words written, as well the overall quality of student writing, measured by %CWS and number of story elements included.

- 2) Is SRSD effective in improving students' attitudes and self-efficacy toward writing?

While previous studies incorporating a population of students with AS have never measured students' attitudes and self-efficacy towards writing, Zumbrunn & Murphy-Yagil (2009) found that specific strategy instruction positively influenced young writers' attitudes about writing. Additionally, while limited literature on self-efficacy toward writing has demonstrated inconsistent results on influencing student's beliefs (e.g., Gaskill & Murphy, 2004; Graham et al., 2005; Harris et al., 1988; Page-Voth & Graham, 1999; Zumbrunn, 2010), few studies have

targeted a middle school-aged population of students, and none have included students with AS. Thus, despite limited findings, due to the positive effects SRSD has had on student writing performance, including for students with AS, it is hypothesized that SRSD instruction will improve both students' attitudes and self-efficacy toward writing.

- 3) Can SRSD help students with AS maintain gains in writing performance following completion of the intervention?

While data on maintenance of acquired skills is often limited by the number of data points collected and duration of time post intervention, Delano (2007a), Asaro & Saddler (2009) and Asaro-Saddler & Saddler (2010) were successful in demonstrating maintenance of improved writing performance for students with AS two to four weeks post intervention. Specifically, all students demonstrated maintenance of gains above baseline for measures of both writing quantity and quality. Thus, it is hypothesized that SRSD instruction with students with AS in the proposed study will contribute to maintenance of acquired writing skills post intervention.

- 4) Is SRSD perceived as an appropriate, effective and socially valid intervention by student's with AS?

Currently, none of the existing research on SRSD instruction with students with AS has incorporated a structured measure of social validity, asking students about their feelings regarding the appropriateness and effectiveness of the intervention. However, a number of studies using SRSD and other academic interventions have incorporated social validity measures (e.g., Wong, et al., 2008; Schnee, 2010). Findings from these studies suggest consistent reports from students indicating general satisfaction and perceived helpfulness of the intervention, as well as positive relationships with the interventionist. Thus, based on the positive effects SRSD has demonstrated on improving writing performance with students, as well as social validity

findings in previous studies, it is hypothesized that social validity scores will be high, demonstrating overall student satisfaction with the intervention.

CHAPTER 2

Method

Participants and Setting

Participants included one seventh grade and two eighth grade male students. Mike was a 14-year, 8-month old Caucasian male, Jason was a 13-year, 1-month old Caucasian male, and Jeremy was an 14-year, 10-month old Caucasian male at the beginning of the study. (All names provided are pseudonyms. See Table 3 for participant characteristics).

Table 3

Participant Information

Student	Gender	Ethnicity	Age	Grade Level	Screening (TOWL) (Percentile)
Mike	Male	Caucasian	14-8	8	16 th
Jason	Male	Caucasian	13-1	7	32 nd
Jeremy	Male	Caucasian	14-10	8	25 th

Students were recruited from two Midwestern middle schools in a community of approximately 250,000 people. The two middle schools serve approximately 1500 students from 6th-8th grade, combined. Students recruited for the study were identified as experiencing difficulties in the area of writing and were referred for this study by the school psychologist. The school psychologist provided study and contact information for the primary investigator to interested parents, and each of the participant's families contacted the primary investigator via email or telephone to inquire about the study and to begin the screening process.

For Mike, all phases of the investigation occurred at a local public library branch in a small group study room which was quiet and free from distraction. For Jason and Jeremy, all

phases of the investigation occurred in their respective family home, in a quiet area at the kitchen table free from distraction.

All students in this study had a diagnosis of Asperger syndrome that was confirmed with the participant's current pediatrician or psychologist. Mike's family signed a release of information to obtain a report from his current psychologist to confirm his diagnosis of Asperger syndrome. The psychologist administered the Gilliam Asperger Disorder Scale (GADS) in December of 2011 as one measure of a comprehensive psychological evaluation. Both parent and teacher completed rating scales indicated an Asperger Disorder Quotient falling in the High/Probable range. Mike received a diagnosis of Asperger's Disorder, High Functioning at age 13, and had a previous diagnosis of Attention-Deficit Hyperactivity Disorder, Combined Type, which was also confirmed in the report. Mike's ADHD is managed by medication (Intuniv and Abilify) and behavioral management strategies, and was not considered to impede with participation in the writing intervention. Medication changes were not made during the course of the study.

Jason's family also signed a release of information to obtain a report from his current psychologist to confirm his diagnosis of Asperger syndrome. Jason was diagnosed with Asperger Disorder at 6 years of age. Previous assessment results contributing to the diagnosis include scores falling in the moderately low range in the domains of self-help and socialization skills on the Vineland Adaptive Behavior Scales. Jason was reported to exhibit significant difficulties with initiating and maintaining social interactions with others. Jason also has a diagnosis of Attention-Deficit Hyperactivity Disorder, Combined Type. Jason's ADHD is managed by medication and behavioral management strategies, and was not considered to impede with

participation in the writing intervention. Medication changes were not made during the course of the study.

Finally, Jeremy's mother also signed a release of information to obtain records from his current psychologist and psychiatrist to confirm his diagnosis of Asperger syndrome. Original documentation of Jeremy's Asperger diagnosis was difficult to obtain, as the family had recently moved from out of state. The diagnosis of Asperger syndrome was confirmed by both Jeremy's psychiatrist and psychologist during a comprehensive intake evaluation. Jeremy also has a diagnosis of Attention-Deficit Hyperactivity Disorder, Combined Type. Jeremy's ADHD is managed by medication (Metadate and Ritalin) and behavioral management strategies, and was not considered to impede with participation in the writing intervention. Medication changes were not made during the course of the study.

Materials

The current study required a number of materials for pre and post assessment, intervention, and progress monitoring. To verify student writing deficits, the Spontaneous Writing Composite, comprised of the contextual conventions and story composition subtests, of the Test of Written Language-4 (TOWL-4) was administered as a screening tool prior to baseline assessment. The Spontaneous Writing composite requires the student to produce a story writing sample that is used to measure essential aspects of written language. The administration manual for the TOWL-4 was required, as well as a test protocol for each participant. Additionally, a stopwatch for the administrator, as well as a sharpened pencil for each student was necessary. Further, a number of different CBM prompts for written expression were required an administration protocol, as well as a stopwatch. Each student was provided with a copy of the story starter and a pencil to complete their written response. Additionally, the Writing Attitude

Survey (Kear, Coffman, McKenna & Ambrosio, 2000) and the Self-Efficacy for Writing Scale (adapted Wilson & Trainin, 2007) were administered pre and post intervention, while the Children's Intervention Rating Profile (CIRP; Witt & Elliot, 1985) was administered post intervention only.

During the intervention stage of the current study, the researcher used the strategy instruction lesson plans for each of the strategies being taught. The scripts were accompanied by a number of visual aids, including self-regulatory materials such as graphs for student progress. Additionally, a reward program was incorporated across participants during the instructional, post instructional, and maintenance phases. Students could earn "hard work tickets" for effort, including bringing their work folder to each session and putting forth effort during the session. Each student could cash in their tickets for individually selected gift cards. Each participant earned \$30 worth of gift cards over the duration of the study.

Dependent Measures

Test of Written Language- 4th Edition (TOWL-4). The Test of Written Language 4 (TOWL-4) is a norm-referenced, comprehensive diagnostic test of written expression for students ages 9-17 (Hammill & Larsen, 2009) and was used as a pre-post measure of intervention effectiveness. The TOWL-4 is used to (a) identify at-risk writers who require additional support, (b) identify strengths and weaknesses across writing areas, (c) measure progress in writing interventions, and (d) measure writing in research. The TOWL-4 contains seven subtests, and has two forms (i.e., Form A and Form B). The seven subtests in combination represent the conventional, linguistic and conceptual aspects of writing. The seven subtests include: (a) vocabulary, (b) spelling, (c) punctuation, (d) logical sentences, (e) sentence combining, (f) contextual conventions, and (g) story composition. The results of subtests one through five are

combined to produce a Contrived Writing score, while subtests six and seven produce a Spontaneous Writing score, using a story writing sample to measure essential aspects of written language. The Overall Writing score provides an estimate of student writing ability, with a combined contrived and spontaneous composite.

For this investigation, the Spontaneous Writing composite, comprised of the contextual conventions and story composition subtest of the TOWL-4 was administered to each participant prior to beginning baseline assessment. These subtests were used to confirm students' writing ability, and provide a pre intervention measure of student writing performance. The contextual conventions subtest requires a student to write a story in response to a stimulus picture. Students are encouraged to plan their story before they write, and are given 15 minutes to complete the writing task. This subtest measures orthographic (e.g., punctuation, spelling) and grammatical (e.g., sentence construction) conventions of writing. Additionally, the story composition subtest, using the same writing sample, evaluates student stories specific to the quality of composition (e.g., vocabulary, plot, character development, interest to the reader).

The TOWL-4 (2009) is the most recent version of the Test of Written Language, and provides a number of important improvements and features since the development of the TOWL-3 (Hammill & Larsen, 1996). First, all new normative data were collected in 2006-2007, with norms collected from 2,505 individuals representing 18 states. One percent of the normative sample was made up of students identified as having an ASD. Further, both grade-based norms, as well as age-based norms, have been included in the updated version. Additionally, a number of studies have been included in the examiner's manual reporting data on criterion-prediction validity, sensitivity, specificity and false positive scores. Moreover, test items were evaluated

and modified to eliminate bias. Finally, reliability and validity measures for the TOWL-4 represent a significant improvement over previous versions (Hammill & Larsen, 2009).

Psychometric data. A reliable and valid measurement of student writing performance is critical to differentiate between students with well-developed versus poor writing skills. Measures are considered reliable when coefficients exceed .80, while a coefficient of at least .90 is considered ideal (Sattler, 2001; Reynolds, Livingston, & Wilson, 2009). The TOWL-4 examines five types of correlation coefficients for reliability: internal consistency, alternate form (immediate administration), test-retest, alternate form (delayed administration) and interscorer reliability. The internal consistency, as measured by Cronbach's Alpha (Cronbach, 1951), demonstrates coefficients (averaged between Form A and Form B) ranging from .74 to .92 for all subtests. The coefficient for the contextual conventions subtest was .80, with a coefficient of .74 for story composition. While the story composition subtest does not exceed .80, the corresponding coefficient for the spontaneous writing composite was .84 and is considered an acceptable degree of reliability. Additionally, alternate form reliability (immediate administration) across all subtests, grades and ages exceeds .80, with an Overall writing coefficient of .95 for aged-based norms. These correlations support a conclusion that Form A and Form B of the TOWL4 are equivalent measures of written expression. Next, test-retest reliability reveals adequately large coefficients to support the reliability of the measure administered twice across a two week period. The contextual conventions subtest reveals a coefficient of .83, while the story composition subtest demonstrates a coefficient of .78 across the entire sample. Further, the coefficient for story composition increases to .85 for an older sample of youth ages 13 to 17. Overall, the coefficient for the Spontaneous Writing composite was .83. Additionally, alternate form reliability was also examined for delayed administration, using the same subsample of

students used to examine test-retest reliability. All but one coefficient exceeded .80. The coefficient for the Spontaneous Writing composite is too low to be considered reliable for grade based norms (.77), but age based norms (.85) are within an acceptable range. Thus, for the purpose of the current study, age based norms were used.

Finally, the TOWL-4 also presents acceptable levels of interscorer reliability, with all coefficients (averaged across Form A and Form B) exceeding .80. It is important to note, however, that Form B demonstrates higher interscorer agreement for the story composition subtest than does Form A (.86 and .72, respectively). Overall, the alternative form reliability of the measure demonstrates adequate technical qualities, and both Forms of the TOWL-4 were used in the current study. Form A was administered as a screening measure pre-intervention, and Form B was administered as a post-intervention measure.

Three types of validity were examined for the TOWL-4: content-description validity, criterion-prediction validity, and construct-identification validity. Results are discussed below. In regard to content-description validity, the authors provide adequate justification for the inclusion of the specific subtests and aspects of language included in the measure. Furthermore, the TOWL-4 does discriminate between good and poor writers, as evidenced by item analysis of item difficulty and discrimination. For criterion-prediction validity, a test such as the TOWL-4 must correlate highly with other tests measuring similar literacy skills. To measure criterion-prediction for the TOWL-4, it was correlated with three measures: The Written Language Observation Scale (WLOS; Hammill & Larsen, 2009), The Reading Observation Scale (ROS; Wiederholt, Hammill, & Brown, 2009), and the Test of Reading Comprehension-Fourth Edition (TORC-4; Brown, Wiederholt, & Hammill, 2009). A coefficient of .50 to .69 is considered large when interpreting the magnitude, and coefficients between .70 and .90 are considered very large.

The correlations across measures ranged from .59 for the Spontaneous Writing Composite for age-based norms, to .75 for the Overall writing composite. The magnitude for the Overall Writing Composite as correlated for all tests was very large, indicating strong criterion-prediction validity. Finally, construct-identification validity was examined. The authors present six hypotheses underlying the basic constructs of the measures. Further, support is presented for the hypothesis about the relationship of writing ability to age and grade, as well as moderate correlations between subtests, indicating unique contributions of each subtest to the measure.

Moreover, the TOWL-4 was found to be moderately to highly correlated with tests of intelligence, including the Wechsler Intelligence Scale for Children-Fourth Edition (WISC-IV; Wechsler, 2003), and the Comprehensive Test of Nonverbal Intelligence (CTONI; Hammill, Pearson, & Wiederholt, 1996). The TOWL-4 also adequately differentiates between groups of students. As would be expected, students' with disabilities affecting writing (e.g., speech-language disorders and learning disabilities) demonstrated lower scores than higher achieving students without disabilities (e.g., gifted). Lastly, factor analysis revealed that all seven subtests adequately load on a single factor, indicating an adequate overall measure of writing ability.

Scoring. Overall, the TOWL-4 demonstrates adequate psychometric properties, and is currently identified as the most comprehensive measure of writing performance (McMaster & Epsin, 2007). Thus, the TOWL-4 was used as a screening measure to confirm the status of students identified as at-risk writers, and also served as a pre-post measure of intervention effectiveness. The accompanying administration manual for the TOWL-4 provided scoring guidelines for each subtest, as well as for computing composite and standard scores.

Curriculum-based measurement (CBM) of written language. Reliable and valid measurement of written expression is essential to ensure that students are making progress

towards writing standards, as well as to inform instruction designed to improve overall writing proficiency. To date, curriculum based measurement (CBM) is the most researched progress monitoring tool available (McMaster & Espin, 2007). CBM is a simple and efficient approach, designed to accommodate frequent administration, and to measure student progress. Story starters, presented in the format of the first few words of a sentence, were used in the current study. Story starters are the most common method of administering CBM in writing (Shapiro, 2004). The story starters used in the current study were chosen from a list of narrative story prompts from AIMSweb (NCS Pearson, 2008). See Appendix A for a list of narrative story prompts used.

Technical adequacy of CBM. While research on the technical adequacy of CBM in written expression is fairly new in comparison to CBM in areas such as reading, an examination of the reliability and validity of writing variables is promising (McMaster & Espin, 2007). When considering the use of a particular measurement tool in research, it is important to understand the overall validity and reliability of a measure. A number of studies have examined the reliability and validity of CBM for writing using written story prompts. McMaster and Campbell (2008) report strong alternate-form reliability for quantity and accuracy measures using story starters.

Total words written (TWW). CBM writing prompts can measure student performance on a number of variables. Writing quantity or production, as measured by total words written (TWW), was used as a primary measure to evaluate student writing in this study. A total word (TW) is defined as a string of two or more letters (or a single 'I' or 'A') separated by a space, regardless of syntactic accuracy (Shapiro, 2004). TWW were calculated by summing all identified total words. TWW is considered a valid and reliable measure for assessing writing production of students (Marston & Deno, 1981). Furthermore, McMaster and Espin (2007)

identify TWW as a variable that adequately differentiates between students of different skill levels, especially at the elementary and middle school levels.

First, the criterion validity of TWW has been examined by comparing a number of different tasks and scoring procedures. Coefficients of validity were found to be strongest when comparing 3 to 5 minute writing samples. Correlations between CBM writing samples and the Test of Written Language (TOWL) (Hammill & Larsen, 1978) reveal coefficients ranging from .84 to .88 for TWW. Additionally, test-retest reliability for TWW demonstrates relatively strong correlations over a one day interval, $r = .91$ (Marston & Deno, 1981), while moderate correlations were observed for test-retest reliability over a 3-week interval, with a coefficient of .64. Moreover, with respect to alternate-form reliability, findings demonstrated variability among reliability scores between multiple story prompts, ranging from moderate correlations of .51 (Shinn, Ysseldyke, Deno & Tindale, 1982) to strong correlations of .95 (Marston & Deno, 1981). Additionally, an examination of internal consistency revealed split-half reliability coefficients ranging from .96 to .99 for TWW. Furthermore, correlations between TWW and teachers' holistic ratings of student writing demonstrate results ranging from $r = .42$ for elementary and high school students (Parker, Tindal, & Hasbrouk, 1991) to $r = .85$ for a small sample of upper elementary aged students (Videen, Deno, & Marsten, 1982). Further, TWW demonstrate a high degree of reliability, with Cronbach's alpha (Cronbach, 1951) for internal consistency being reported as $r = .87$ for students in first through sixth grade (Marston & Deno, 1981).

Percent correct writing sequences (%CWS). Percent Correct Writing Sequences (%CWS), as derived from a measurement of correct writing sequences (CWS), is a measure of overall writing accuracy. %CWS is a production independent variable that measures the accuracy of written text, as the variable itself is independent of the length of the writing sample.

CWS, conversely, is a measure of fluency, and a production dependent variable, as it is dependent on the number of words written (Jewell & Malecki, 2005). A CWS is defined as any two adjacent words that are syntactically and semantically accurate (Videen, et al., 1982). Thus, %CWS is calculated by dividing the number of CWS by the total number of writing sequences in a written sample, and multiplying the quotient by 100 to obtain a percentage.

%CWS were found to be strongly correlated with teacher's holistic ratings of student writing, with a coefficient of .75 (Tindal & Parker, 1989). Moreover, Parker, et al. (1991) report a high degree of reliability for %CWS, with Cronbach's alpha (Cronbach, 1951) for internal consistency being reported as $r=.77$, and test-retest reliability from fall to spring showing a moderate correlation ranging from .45 to .75. These findings support the use of %CWS as a valid measure to evaluate student writing performance.

Adequate validity and reliability of CBM for writing, as well as ease of administration, make these direct measures of written expression an appropriate tool for progress monitoring over short intervals. Further, CBM has the ability to inform instruction to improve overall writing proficiency. Thus, CBM for written expression was used in the current study.

Number of Story Elements. Quality writing in the genre of narrative text requires writers to use a number of different elements throughout their stories. The literature in the area of narrative story writing identifies seven critical elements posed as questions (McKeough, Palmer, Jarvey, & Bird, 2007): (a) Who are the main characters? (b) Where does the story take place? (c) When does the story take place? (d) What do the main characters do or want to do? (e) What happens next? (f) How does the story end? and (g) How do the main characters feel. The current study measured the number of story elements students' used throughout their narrative writing, as taught through SRSD instruction. All CBM writing prompts were scored for total number of

story elements included. A number of previous SRSD studies, including those with students with Asperger syndrome (e.g., Asaro & Saddler, 2009; Asaro-Saddler & Saddler, 2010) have used the number of story elements as a dependent measure for narrative writing.

Writing Attitude Survey. The Writing Attitude Survey (Kear, Coffman, KcKenna & Ambrosio, 2000) was administered to measure the impact the writing intervention has on students' attitude toward writing. The survey was administered during the baseline and post instructional phases. The Writing Attitude Survey is appropriate for students from first to 12th grade, and includes visual representations of the cartoon character Garfield, with Garfield faces ranging from very upset to very happy, on a four-point Likert Scale. Students were instructed to circle the Garfield face that indicates their feelings about writing at various points pre and post intervention. See Appendix B for a copy of the Writing Attitude Survey.

A standardization sample of 974 students, 1st through 12th grade was used for normative data, representing all regions of the United States. The sample consisted of nearly equal numbers of males and females, including a majority of European American participants, while also representative of African American and Hispanic student populations. The Writing Attitude Survey demonstrates a high degree of reliability, with Cronbach's alpha (Cronbach, 1951) for internal consistency ranging from .85 to .93 across grade and gender (Kear, et al., 2000). Overall reliability for the total sample was .88, indicating that the Writing Attitude Survey is a reliable measure of student attitudes toward writing.

Self-Efficacy for Writing Scale. Self-Efficacy was measured using the Self-Efficacy for Writing Scale (Zumbrunn, Bruning, Kaufman & Hayes, 2010). The scale was administered to measure the impact the SRSD intervention had on students' self-efficacy regarding writing. The scale was administered during the baseline and post-instructional phase. The Self-Efficacy for

Writing scale consists of 12 questions asking students to rate them on a 4-point likert scale ranging from 1 (never) to 4 (always) regarding their confidence on performing specific writing skills. Cronbach's alpha is reported as .85 for this measure.

Independent Variables

Strategy Instruction. The instructional phase of the current targeted a planning + writing strategy using the SRSD model (Graham & Harris, 2005; Harris and Graham, 1996). The model progresses through six instructional stages (Develop Background Knowledge, Discuss it, Model It, Memorize It, Support It, and Independent Practice), at a pace individualized to student need. Additionally, self-regulation strategies including goal setting and self-reinforcement are embedded throughout. To target narrative story writing, a planning + writing strategy, POW + WWW, What = 2, How =2, was taught throughout the instructional phase of the study. The acronym POW (Pick my ideas; Organize my notes; Write and say more) targets pre-writing or planning skills necessary for skilled writing, while the WWW, What=2 (Who are the main characters? Where does the story take place? When does the story take place? What do the main characters do or want to do? What happens next? How does the story end? How do the main characters feel?), mnemonic teaches students the necessary elements required to write a quality story. The lesson plans for planning + writing instruction can be found in Appendix D.

Experimental Design

A multiple-baseline design across participants (Kazdin, 2010) was used to evaluate the effectiveness of SRSD instruction on writing production (e.g., TWW), writing accuracy (e.g., %CWS), and number of story elements (see Appendix E for sample multiple baseline graph). The writing instruction was administered independently, two to three times per week for approximately 30-45 minutes. Experimental phases included baseline assessment, a post

instructional condition, and a maintenance condition. As is characteristic of a multiple-baseline design, students began the phases of the study in a staggered manner. Experimental control was established when a change in level or trend occurred only for the student who was receiving instruction, while performance for students continuing in baseline remain stable (Kazdin, 2010). Upon attainment of criterion performance, defined as independent story writing including all seven essential story components, a participant moved from the instructional to the post instructional phase. Subsequently, the next participant moved from baseline to the instructional phase. Thus, it is anticipated that changes in student writing performance was the result of the writing instruction, as opposed to an extraneous event in the student's environment.

Procedures

Informed consent. Approval for the current study was obtained from the University of Nebraska-Lincoln Institutional Review Board. Informed consent was obtained from parents or guardians, as well as youth assent from all participants. Parents and student participants were informed about risks and benefits, as well confidentiality. Both participants and parents/guardians were notified that they could withdraw their participation in the study at any time.

Screening phase. The Spontaneous Writing composite of the TOWL-4 (the contextual conventions and story composition subtests) was administered to each participant as a screening tool to confirm individual students' deficient writing skills. A standard score for the composite was calculated, and a percentile score based on student age was obtained. All participants included in the current study were identified as in need of an individual writing intervention and were performing at or below the 30th percentile on the story composition or Spontaneous Writing composite compared to same age peers.

Baseline phase. A number of baseline measures were collected during this phase of the current study. First, The Writing Attitude Survey (Kear, Coffman, KcKenna & Ambrosio, 2000) and Self-Efficacy for Writing Scale (adapted from Wilson & Trainin, 2007) were administered to gauge participants' pre-intervention attitudes toward writing. Additionally, three CBM writing prompts were administered on separate days to determine pre-intervention story writing ability. In each instance, students were instructed to write until their story is finished. While a minimum of three baseline writing samples were be collected, the baseline phase of the study continued until a stable trend of data was observed, and a phase change between participants was warranted (Kazdin, 2010).

Instructional phase. Narrative writing is the most common genre of writing targeted by SRSD, as this is the first type of writing that young students are taught. Writing instruction in the elementary years focuses on the continued development of narrative text (McKeough, Palmer, Jarvey, & Bird, 2007). For at-risk writers, the quantity and quality of their writing is often limited. Additional writing genres, such as expository and persuasive writing taught in later grades, require the basic foundation taught when students are first learning to write. Thus, for at-risk writers in middle school that lack adequate text production and writing quality, it becomes necessary to teach the fundamentals of written expression targeted in narrative story writing.

During the instructional phase, the SRSD model (Graham & Harris, 2005; Harris & Graham, 1996) was used to teach a story planning and writing strategy. The target strategy was taught using the POW + WWW, What =2, How =2 mnemonic, outlined previously (see section on *Independent Variable*). Using this model, students were taught specific strategies for planning and writing a story using multiple story parts. Additionally, students were taught self-regulatory strategies such as goal setting, self-monitoring, and using self-talk as a motivator. The SRSD

model is divided into six lessons, with each lesson requiring a varied number of sessions, dependent on individual student need and performance. Scripted lesson plans, as well as additional supportive materials, as provided by Project Write at Vanderbilt University, were used. Please see appendix D for lesson plans for POW + WWW, What = 2, How = 2. The primary investigator met individually with each student 2 to 3 times per week, for 30 minutes. The instructional phase was completed in 6 or 7 sessions for all participants.

Post instructional phase. Upon completion of the instructional phase, as determined by attainment of criterion performance of independent writing using all 7 essential story elements, post instructional assessment took place. Each participant completed three CBM writing probes, over three sessions, under the same conditions as baseline. Additionally, the Spontaneous Writing Composite from the TOWL-4, the Writing Attitudes Survey, the Self-Efficacy Scales for Writing, and the CIRP was administered.

Maintenance phase. To assess the maintenance of skills taught during the intervention, four additional CBM writing prompts were collected. These assessments took place under the same conditions as baseline and post instructional assessment, and were collected from each participant weekly across four weeks following the post instructional phase.

Treatment Integrity. To ensure that the intervention was conducted with high fidelity, treatment integrity data was collected. To ensure integrity, all intervention sessions were audio recorded, and approximately 30% of the sessions were selected at random and were reviewed and scored by a trained graduate student, using pre designed treatment integrity checklist. It was determined that the level of treatment integrity with the intervention steps was 100% during the study.

Interrater Reliability. It is imperative that an investigator ensure the reliability and consistency of all scored measures used as dependent variables in a study. Interrater reliability, or interrater agreement, is the degree to which independent individuals agree on a specific judgment (Watkins & Pacheco, 2000). Thus, in the current study, interrater reliability applies to multiple scorers' agreement or consistency across the scoring of the dependent measures. All TOWL-4 protocols, as well as CBM writing prompts, were scored by the researcher. Additionally, one graduate student previously trained to score the TOWL subtests, was used for interrater reliability. The rater demonstrated 95% interrater reliability with the research during training before scoring student TOWLS. The graduate student was also previously trained to score writing prompts. Approximately 30% of CBM writing prompts across phases were selected at random and scored by the trained graduate student. Interrater reliability of 96%, 93%, and 96% were obtained for TWW, %CWS, and number of story elements, respectively.

Social Validity. Social validity in this study was assessed by administering the Children's Intervention Rating Profile (CIRP; Witt & Elliott, 1985) (See Appendix F). The CIRP is composed of seven statements, asking students to rate each item on a five-point Likert Scale, where 1 represents "I agree very much" and 5 represents "I disagree very much." Students are asked to read each statement, and indicate the number that most accurately corresponds to their belief. Internal consistency, as measured by Cronbach's alpha (Cronbach, 1951), for the CIRP is .75. Further, Elliot (1988) and Turco & Elliot (1986) have established validity for the scale by demonstrating that children can adequately discriminate opinions using this measure. The CIRP was administered following the collection of the fourth maintenance data point for each participant.

CHAPTER 4

Results

Within the current study, data on student writing performance included scores on the TOWL-4, Total Words Written (TWW), Percent Correct Writing Sequences (%CWS), number of story elements, and time spent planning and writing a story. Additionally, the Writing Attitude Survey, the Self-Efficacy for Writing Scales, and the Children's Intervention Rating Profile (CIRP) were administered to evaluate students' attitudes toward writing, students' perceived self-efficacy about writing, and their impressions of the writing intervention. The results of each of these evaluations are provided within the following sections.

Experimental control

Experimental control is a vital component in any research investigation. To evaluate the influence an independent variable has on the dependent variables in a study, it is important to demonstrate experimental control to support the conclusion that any changes to the dependent variable were influenced by the independent variable, as opposed to other extraneous variables. Experimental control is demonstrated when data show an increasing trend and level that correspond with the introduction of the independent variable, while baseline remains stable for other behaviors, settings or participants. In the current study, experimental control was expected to be demonstrated during the post instructional phase, as it was expected that increases on writing variables would occur following the introduction of the writing intervention administered during the instructional phase. As such, experimental control is demonstrated through four multiple-baseline across participant graphs, which are displayed in Figures 3-6.

The multiple-baseline across participants graph for TWW demonstrated a stable baseline for Mike and Jason and an increase in performance following the introduction of the instructional

phase for planning and writing. For Jeremy, there was one outlier amongst the baseline data, but three stable baseline points were collected prior to a phase change. Following intervention, an increasing trend was observed. Thus, it can be concluded that these data indicate that experimental control was achieved for Mike, Jason, and Jeremy. All three students demonstrated increases in TWW following instruction on planning and writing a story.

The multiple-baseline across participants graph for %CWS demonstrated a fairly stable baseline for Mike, Jason, and Jeremy. All three participants increased their performance on %CWS upon completing the instructional phase of the study. These increases in performance demonstrate adequate experimental control on this measure.

Further, Mike, Jason, and Jeremy demonstrated stable baselines on the number of story elements variable. All three students increased their performance on this variable following completion of the instructional phase of the study. Thus, adequate experimental control was demonstrated for this variable.

Finally, the multiple-baseline across participants graph for time spend planning and writing demonstrated a stable baseline for Mike and Jason and an increase in performance following the completion of the instructional phase. For Jeremy, there was one outlier amongst the baseline data, consistent with TWW, but three stable baseline points were collected prior to a phase change. Thus, it can be concluded that these data indicate that experimental control was achieved for Mike, Jason, and Jeremy. All three students demonstrated increases in both total planning and writing following the instructional phase.

Story Writing Prompts

Each participant completed between 10 and 15 AIMSweb story starter writing prompts across the baseline, post instruction, and maintenance phases. Each participant completed at least

three prompts during the baseline phase, and all participants completed three prompts, and four prompts during the post-instruction and maintenance phases, respectively. Total Words Written (TWW), Percent Correct Writing Sequence (%CWS), number of story elements (SE), and total time planning and writing (in seconds) were assessed for all writing prompts.

Total Words Written (TWW). TWW measures writing quantity or production.

Participant performance for the variable TWW is presented in Figure 3 and Table 4. Mike's performance on TWW increased from baseline to post-intervention, with a decrease from post-instruction to maintenance. Mike wrote a mean of 30 words in the baseline phase, with an increase to a mean of 260 words in the post-instruction phase. There was a steady increasing trend during the post-instruction phase. Mike's mean TWW decreased to 160 words in the maintenance phase, but remained increased from baseline. There was some variability in Mike's performance during the maintenance phase. Mike had 100% non-overlapping data for TWW.

Jason's performance on TWW increased from baseline to post-intervention, with a decrease from post-instruction to maintenance. Jason wrote a mean of 29 words in the baseline phase, with an increase to a mean of 229 words in the post-instruction phase. There was an immediate increase in performance during the post-instruction phase which stabilized at a high level throughout this phase. Jason's mean TWW decreased to 154 words in the maintenance phase, but remained increased from baseline. There was some variability in Jason's performance during the maintenance phase. Jason had 100% non-overlapping data for TWW.

Jeremy's performance on TWW increased from baseline to post-intervention, and also increased from the post-instruction to the maintenance phase. Jeremy wrote a mean of 39 words in the baseline phase, with an increase to a mean of 173 words in the post-instruction phase. There was a steady increasing trend during the post-instruction phase. Jeremy's mean TWW

increased to 232 words in the maintenance phase. There was a high level of variability in Jeremy's initial performance during the maintenance phase. However, his performance stabilized by the end of data collection. Jeremy had 71% non-overlapping data for TWW.

Figure 3
Total Words Written across Participants

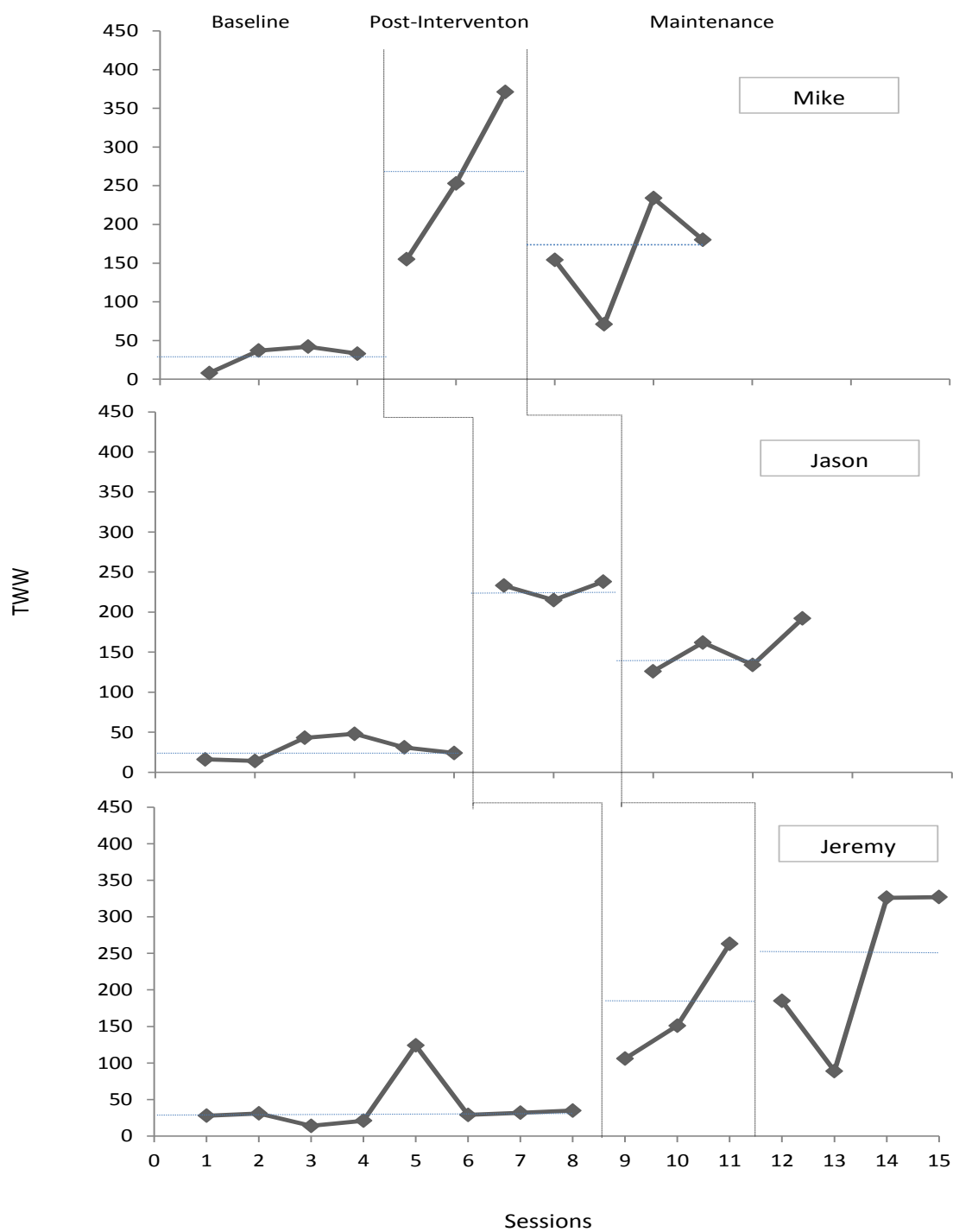


Table 4

Total Words Written Across Participants

TWW	Baseline		Post-Intervention		Maintenance		
	Mean	Range	Mean	Range	Mean	Range	%NOD
Mike	30	8 - 42	312	155- 371	160	71- 234	100%
Jason	29	14 - 48	229	215 - 238	154	126 - 192	100%
Jeremy	27	14 - 124	173	106 - 263	232	89 - 327	71%

Percent Correct Writing Sequences (%CWS). %CWS, as derived from a measurement of correct writing sequences (CWS), is a measure of overall writing accuracy. %CWS is a production independent variable that measures the accuracy of written text, as the variable itself is independent of the length of the writing sample. Participant performance for the variable %CWS is presented in Figure 4 and Table 5.

Mike's performance on %CWS increased from baseline to post-intervention, with a decrease from post-instruction to maintenance. There was a decreasing trend in Mike's baseline performance. Mike increased his performance on %CWS from 73% during the baseline phase to 88% during the post-instruction phase. Performance during post-instruction stabilized at a high level and remained stable throughout the phase. Mike's %CWS during the maintenance phase decreased to 87%, but remained increased from baseline. Mike had 100% non-overlapping data for %CWS.

Jason's performance on %CWS increased from baseline to post-intervention, with a decrease from post-instruction to maintenance. Jason increased his performance on %CWS from 69% during the baseline phase to 92% during the post-instruction phase. Moderate baseline variability was noted during the baseline phase. Following instruction, performance increased and stabilized. Jason's %CWS during the maintenance phase decreased to 90%, but remained

increased from baseline. A stable trend was observed for the maintenance phase. Jason had 100% non-overlapping data for %CWS.

Jeremy's performance on %CWS increased from baseline to post-intervention, and also increased from the post instruction to maintenance phase. A variable, and slightly decreasing, trend was observed during baseline. Jeremy increased his performance on %CWS from 87% during the baseline phase to 93% during the post-instruction phase, and to 94% during the maintenance phase. A stable and high level of performance was observed during post-instruction, and maintained through the maintenance phase. Because Jason had a data point of 100% CWS in the baseline phases, non-overlapping data for %CWS is 0%.

Figure 4

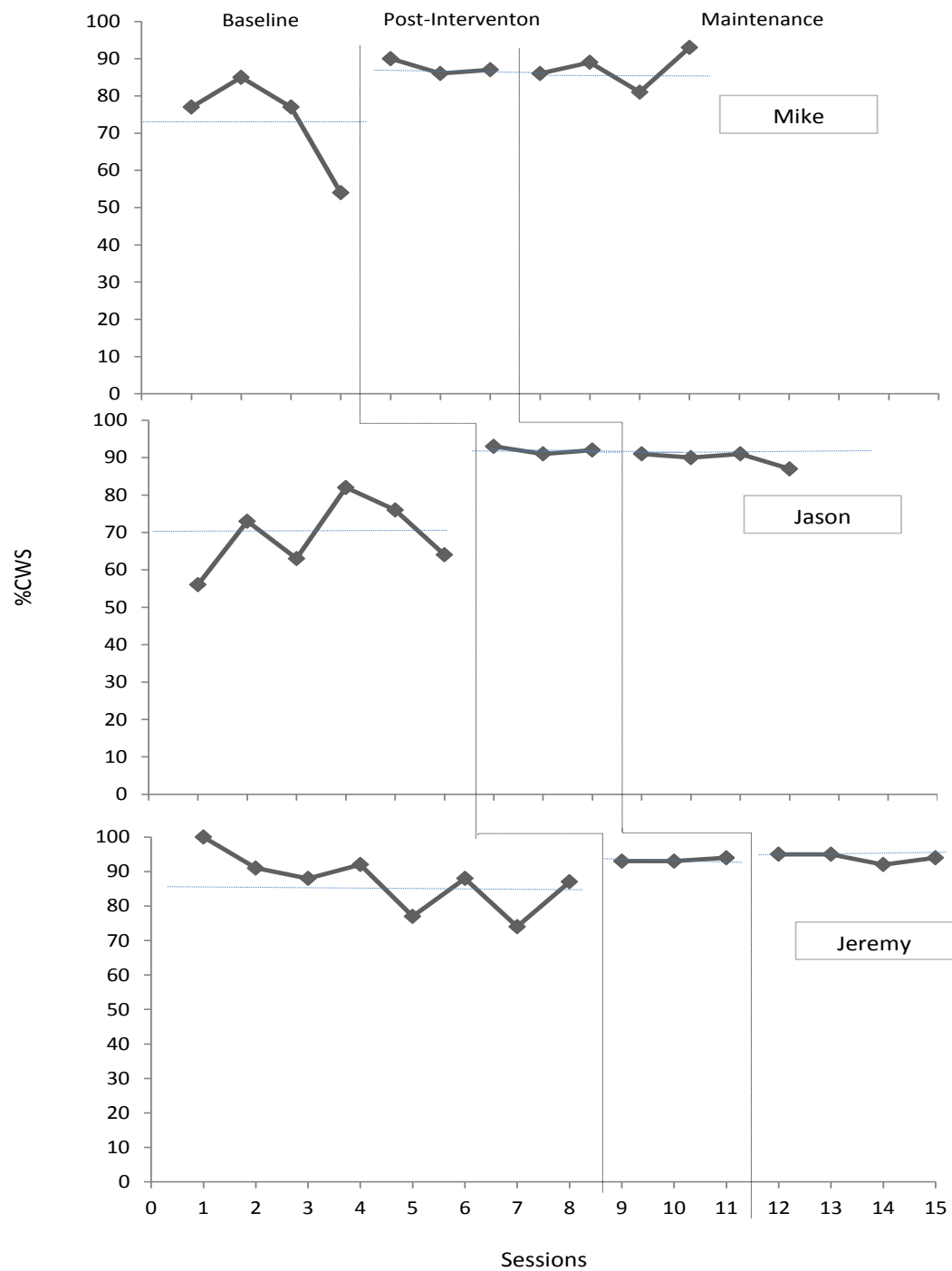
%CWS across Participants

Table 5

%CWS across Participants

%CWS	Baseline		Post-Intervention		Maintenance		
	Mean	Range	Mean	Range	Mean	Range	%NOD
Mike	73	54 - 85	87	86 - 90	87	81 - 93	86%
Jason	68	56 - 82	92	91 - 93	90	87 - 91	100%
Jeremy	89	74 - 100	93	93 - 94	94	92 - 95	0%

Number of story elements. Number of story elements is a direct measure of the skill acquisition of the skills taught during the instructional phase. The maximum number of elements possible in a given story is 7 elements. Student performance regarding the number of story elements is presented in Figure 5 and Table 6

The number of story elements Mike included in his stories increased from the baseline phase to the post-instructional phase, and maintained from the post-instruction phase to the maintenance phase. Mike increased the number of story elements from a mean of 2.75 during baseline, to a mean of 7 during the post-instructional and maintenance phases. Mike had 100% non-overlapping data for number of story elements.

The number of story elements Jason included in his stories increased from the baseline phase to the post-instructional phase, and maintained from the post-instruction phase to the maintenance phase. Jason increased the number of story elements from a mean of 2.67 during baseline, to a mean of 7 during the post-instructional and maintenance phases. Jason had 100% non-overlapping data for number of story elements.

The number of story elements Jeremy included in his stories increased from the baseline phase to the post-instructional phase, and maintained from the post-instruction phase to the

maintenance phase. Jeremy increased the number of story elements from a mean of 2.25 during baseline, to a mean of 7 during the post-instructional and maintenance phases. Jeremy had 100% non-overlapping data for number of story elements.

Figure 5

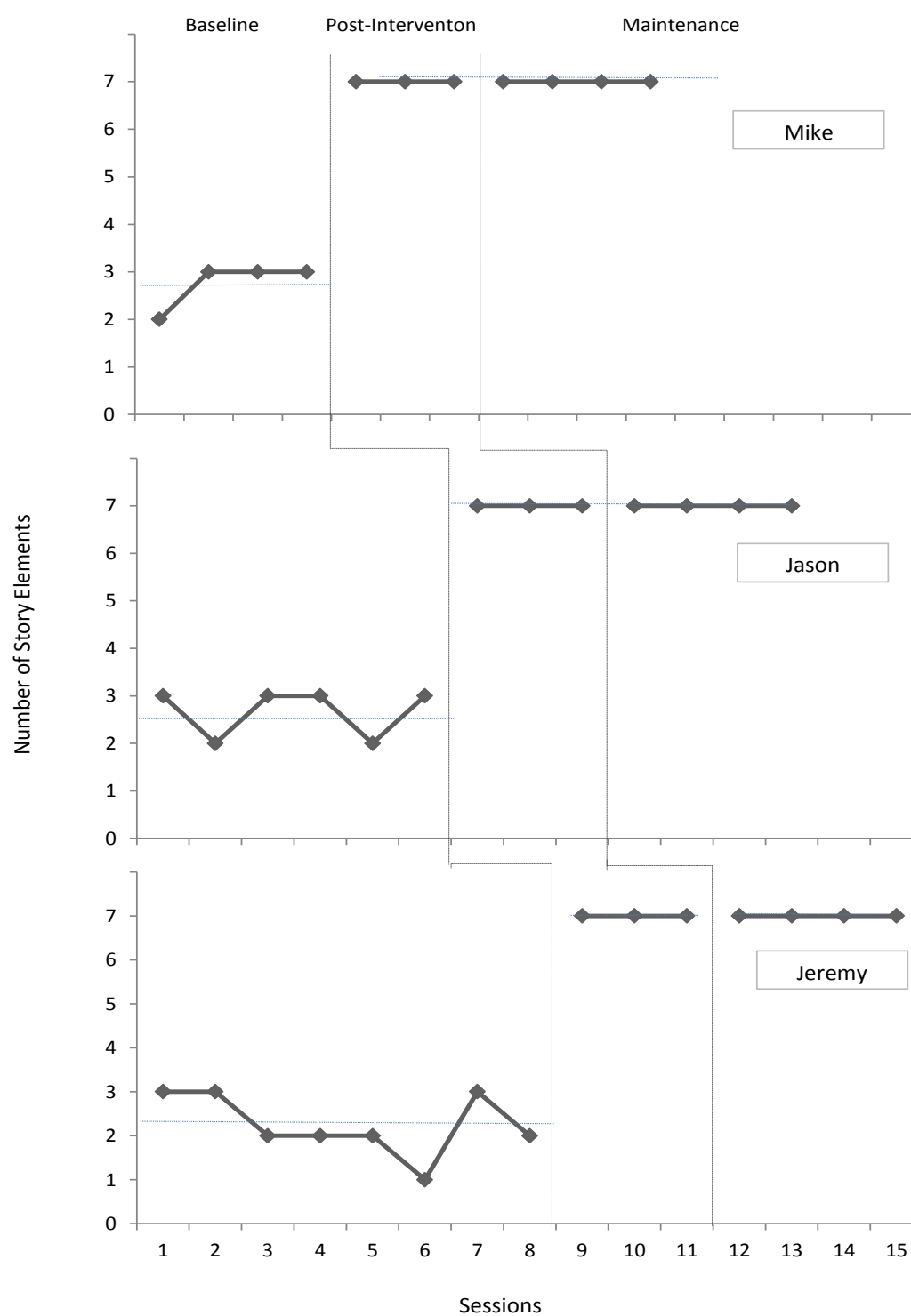
Number of Story Elements across Participants

Table 6

Story Elements across Participants

Story Elements	Baseline		Post-Intervention		Maintenance		
	Mean	Range	Mean	Range	Mean	Range	%NOD
Mike	2.75	2 - 3	7	7	7	7	100%
Jason	2.80	2 - 3	7	7	7	7	100%
Jeremy	2.29	1 - 3	7	7	7	7	100%

Time spent planning and writing (in seconds). Time spent planning and writing is an indirect measure of the skills taught during the instructional phase of the study. Participant performance for time spent planning and time spent writing is presented in Figure 6 and Table 7.

The number of seconds Mike spent planning increased from the baseline phase to the post-instructional phase, and decreased from the post-instructional phase to the maintenance phase. Mike increased his time spent planning from a mean of 0 seconds during baseline, to a mean of 300 seconds (5 minutes) during the post-instruction phase. A steady increasing trend was noted. Mike's mean time spent planning decreased to 288 seconds (4.8 minutes) in the maintenance phase, but remained increased from baseline. There was some variability in Mike's performance during maintenance. For time spent writing, Mike increased his baseline planning time of a mean of 126 seconds (2 minutes) to a mean of 1360 seconds (22.6 minutes) post-instruction. This time decreased to a mean of 751 seconds (12.5 minutes) during the maintenance phase. A consistent, stable trend was observed from post-instruction through maintenance. Mike had 100% non-overlapping data for time spent planning and time spent writing.

The number of seconds Jason spent planning increased from the baseline phase to the post-instructional phase, and decreased from the post-instructional phase to the maintenance phase. Jason increased his time spent planning from a mean of 0 seconds during baseline, to a

mean of 248 seconds (4.2 minutes) during the post-instruction phase. A steady, flat trend was observed during the post-instruction phase. Jason's mean time spent planning decreased to 221 seconds (3.7 minutes) in the maintenance phase, but remained increased from baseline. A slight increasing trend was noted during the maintenance phase. Similarly, for time spent writing, Jason increased his baseline time of a mean of 142 seconds (2.4 minutes) to a mean of 928 seconds (15.5 minutes) post-instruction. A slight decreasing trend was observed during the post-intervention phase. This time decreased to a mean of 590 seconds (9.8 minutes) during the maintenance phase, but still remained increased from baseline. Variability, with a slight increasing trend was noted during the maintenance phase. Jason had 100% non-overlapping data for time spent planning and time spent writing.

The number of seconds Jeremy spent planning increased from the baseline phase to the post-instructional phase, and increased again from the post-instructional phase to the maintenance phase. Jeremy increased his time spent planning from a mean of 0 seconds during baseline, to a mean of 112 seconds (1.9 minutes) and 221 seconds (3.7 minutes), during the post-instruction phase and maintenance phase, respectively. A consistent, flat trend demonstrating improvement was observed across both the post-instruction and maintenance phase. Similarly, for time spent writing, Jeremy increased his baseline time of a mean of 189 seconds (3.2 minutes) to a mean of 780 seconds (13 minutes) during the post-instruction phase, and to a mean of 1080 seconds (18 minutes) during the maintenance phase. A steady increasing trend was observed during the post instruction phase. A decreasing trend, with a swift increasing trend was noted during the maintenance phase. Jeremy had 100% non-overlapping data for time spent planning, and 71% non-overlapping data for time spent writing.

Figure 6

Time Spent Planning and Writing across Participants

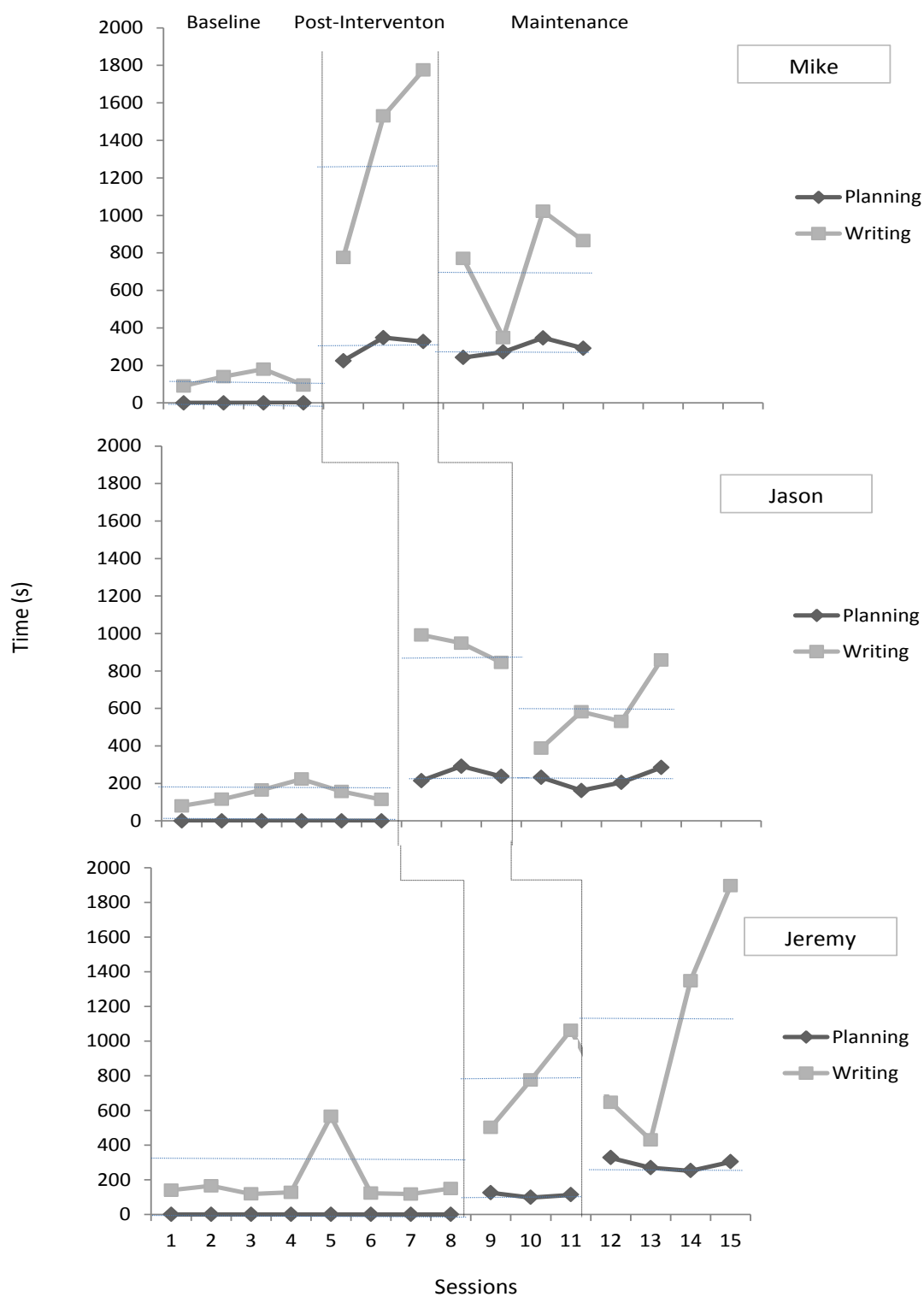


Table 7

Time Spent Planning and Writing Across Participants

Planning (sec)	Baseline		Post-Intervention		Maintenance		
	Mean	Range	Mean	Range	Mean	Range	%NOD
Mike	0	0	338	225 - 328	288	242 - 347	100%
Jason	0	0	248	215 - 292	221	162 - 285	100%
Jeremy	0	0	112	98 - 125	288	252 - 327	100%

Writing (sec)	Baseline		Post-Intervention		Maintenance		
	Mean	Range	Mean	Range	Mean	Range	%NOD
Mike	126	90 - 180	1653	775 - 1775	751	348 - 1022	100%
Jason	139	80- 223	928	845 - 992	590	388 - 858	100%
Jeremy	135	119 - 566	780	502 - 1062	1080	430 - 1896	71%

Test of Written Language-Fourth Edition (TOWL-4)

The results of the Spontaneous Writing section of the TOWL-4 are presented in Table 8. Results demonstrated that all three participants increased their performance from baseline to post-intervention on the Contextual Conventions (CC) and Story Composition (SCo) subtests. Consequently, increased performance on the Spontaneous Writing Scale was also observed. At baseline, Mike had a CC score at the 9th percentile and a SCo score at the 25th, with a subsequent Total Spontaneous Writing score at the 16th percentile. Post intervention CC and SCo scores increased to 50th percentile and 75th percentile, respectively. Post-intervention Total Spontaneous Writing score increased to the 75th percentile.

At baseline, Jason had a CC score at the 37th percentile and a SCo score at the 25th, with a subsequent Total Spontaneous Writing score at the 32nd percentile. Post intervention CC and SCo scores increased to 75th percentile and 8^{4th} percentile, respectively. Jason's Post-intervention Total Spontaneous Writing score increased to the 75th percentile. Finally, at baseline, Jeremy had

a CC, SCo, and Total Spontaneous Writing score all at the 25th percentile. Post intervention CC and SCo scores increased to 50th percentile and 63rd percentile, respectively. Post-intervention Total Spontaneous Writing score increased to the 65th percentile.

Table 8

Student performance on the TOWL-4 Spontaneous Writing section

Participant		Baseline	Maintenance	Improvement
	<i>Subtest</i>	<i>Score (Percentile)</i>	<i>Score (Percentile)</i>	
Mike	CC	8 (9 th)	14 (50 th)	Y
	SCo	7 (25 th)	11 (75 th)	Y
	Total	15 (16 th)	23 (75 th)	Y
Jason	CC	13 (37 th)	22 (84 th)	Y
	SCo	7 (25 th)	8 (50 th)	Y
	Total	17 (32 nd)	23 (75 th)	Y
Jeremy	CC	11 (25 th)	14 (50 th)	Y
	SCo	7 (25 th)	9 (63 rd)	Y
	Total	16 (25 th)	21 (65 th)	Y

Writing Attitude Survey

The results of the Writing Attitude Survey are presented in Table 9. The Writing Attitude Survey was completed during the baseline phase, as well as following the maintenance phase. Scores on this survey can range from 12 to 48 points. Mike's attitude toward writing increased from baseline to maintenance. His scores on the Writing Attitude Survey increased from 25 points at baseline to 38 points following the final maintenance prompt. Jason's attitude toward

writing remained increased slightly from baseline to maintenance. His scores on the survey increased from 31 points at baseline to 35 points following the final maintenance prompt.

Jeremy's attitude toward writing increased from baseline to maintenance. His scores on the survey increased from 24 points at baseline to 38 points following the final maintenance prompt.

Table 9

Writing Attitude Survey Results

Participant	Baseline	Post-Maintenance
Mike	25	38
Jason	31	35
Jeremy	24	38

Self-Efficacy for Writing Scales

The results of the Self-Efficacy for Writing Scale are presented in Table 10. The Self-Efficacy for Writing Scale was completed during the baseline phases, as well as following the maintenance phase. Scores on this survey can range from 11 to 44. Mike's reported self-efficacy for writing increased from baseline to maintenance. His scores on the Self-Efficacy for Writing Scale increased from 23 points at baseline to 32 points following the final maintenance prompt. Jason's reported self-efficacy for writing increased from baseline to maintenance. His scores on the scale increased from 28 points at baseline to 38 points following the final maintenance prompt. Finally, Jeremy's reported self-efficacy for writing also increased from baseline to maintenance. His scores on the scale increased from 30 points at baseline to 35 points following the final maintenance prompt.

Table 10

Self-Efficacy for Writing Scale Results

Participant	Baseline	Post-Maintenance
Mike	23	32
Jason	28	38
Jeremy	30	35

Social Validity

Social validity was assessed by administering the Children's Intervention Rating Profile (CHIRP; Witt & Elliot, 1985) on the last day of the maintenance phase. The CIRP is composed of 7 statements and asks students to rate the items on a scale of 1 to 5, with 1 indicating "I agree very much" and 5 indicating "I disagree very much." Scores on this survey can range from 7 to 35. Overall, all students agreed very much with statements indicating that "the writing program was fair," "the writing program would be good for other children," and "I like the writing program used to handle my writing problem." Additionally, all students disagreed very much that "the tutor was too harsh (mean)." Responses ranged between "I disagree very much" and "I don't agree or disagree" for the response to the question "the writing program might cause problems with my friends." Responses ranged between "I sort of agree" and "I sort of disagree" to the statement "There are better ways to handle writing problems." Finally, responses ranged between "I agree very much" and "I sort of agree" to the statement "the writing program would help other children do better in school."

CHAPTER 5

Discussion

This study sought to examine a) the impact of SRSD on writing quantity and quality, as measured by TWW, %CWS and number of story elements, b) the impact the intervention had on improving students' attitudes and self-efficacy toward writing, c) the impact the intervention had on maintaining gains following completion of the intervention, and d) the overall appropriateness, effectiveness, and social validity of the intervention for the student population being examined. This study was conducted as a multiple baseline design across participants, and included three male, 7th grade students previously diagnosed with Asperger syndrome. A multiple baseline design allows for a demonstration of experimental control by showing that the independent variable is responsible for the change in student writing performance. The SRSD intervention being evaluated was selected based on previous success in improving overall student writing with a variety of unique student populations (e.g., students with a diagnosis of ADHD, LD, at-risk writers), and the fit of the intervention in targeting areas that have been previously identified as challenging for students with AS (e.g., planning, difficulty with organization and elaboration) (Myles, 2005).

In addition to the story prompts administered throughout this study, additional measures were used to evaluate the effectiveness and appropriateness of this intervention with the targeted population. The *Test of Written Language-Fourth Edition (TOWL-4)* was administered pre and post intervention to further assess writing performance. Additionally, the Writing Attitude Survey, The Self-Efficacy for Writing Scales, as well as the Children's Intervention Rating Profile (CIRP) were administered to assess changes in attitudes toward writing, changes in perceived self-efficacy, and acceptance of the intervention throughout this examination.

Overall, the results of the current study demonstrated that a) strategy development was effective in increasing both the quantity and quality of written work, b) the intervention procedure helped improve all students' attitude and self-efficacy toward writing, c) maintenance data demonstrated maintained improvements from baseline for all students up to four weeks post-intervention, and d) all students' identified the intervention as socially valid and appropriate for students with AS.

Impact of SRSD on Writing Quantity and Quality

Despite over 40 studies of SRSD (Tracy, Reid & Graham, 2009; Danoff, Harris, & Graham, 1993; De La Paz, 1999; Graham and Harris, 1989) demonstrating improvements in writing knowledge, strategic behavior, self-regulation skills, and motivation over the last 20 years, only five studies have included students on the autism spectrum, with a majority of these five studies targeting an elementary school population. Results of studies using SRSD with students with learning disabilities has demonstrated that when these students are taught writing strategies and self-regulatory procedures (e.g., goal setting, self-monitoring, and self-reinforcement), both the quantity and quality of their writing improves (De La Paz & Graham, 2002). Results of the five studies using SRSD with a population of students with ASD's demonstrated comparable success, but further replications, using a multiple baseline design and targeting middle school students with AS have yet to be conducted. Therefore, the current study sought to evaluate the impact of SRSD on the overall writing production and writing quality for three middle school students with AS.

Quantity of writing. Based on the first research question, it was hypothesized that the use of SRSD would improve the quantity of written text produced by each student, measured by total words written. The results of the current study confirmed this hypothesis, demonstrating

that SRSD was an effective intervention that helped all students increase how much text they were producing. Specifically, Mike, Jason, and Jeremy improved their total production from an average of less than 50 words during baseline, to an average of 200 words or greater post-instruction. Mike specifically, demonstrated a steady increase on each of his post-intervention story, with a personal best of nearly 400 words in his final post-intervention story, demonstrating the most significant gain of all students.

Prior research has indicated that graphing academic performance can be motivating for students (Kasper-Ferguson & Moxley, 2002; McCurdy, Skinner, Watson, & Shriver, 2008; Van Houten, Hill, and Parsons, 1975). Findings demonstrate that performance feedback in the form of student self-scoring improved story writing performance. In this study, it is anticipated that motivation played a role in the steady increase in total words written, specifically for Mike and Jeremy. All students graphed their total words written following each session, and Mike in particular appeared very motivated to beat his previous session's score. To date, the impact of graphing on the effectiveness of SRSD has not been evaluated. Future research should begin to tease apart the components of SRSD to determine the most effective intervention components. It is possible that graphing has a large impact on the increase in student writing production while the instructional components of SRSD are responsible for increases in writing quality.

Quality of writing. For research question two, it also was hypothesized that the overall quality of student writing, measured by both %CWS and number of story elements, would improve. Based on results in this study, it appeared that improvements in quantity and quality were related. As students began to learn to plan their stories and use the seven story elements that contribute to completeness, the overall length, or TWW, in their stories increased. First, story quality was measured by %CWS. All three students demonstrated an improvement in the %CWS

used at baseline, as compared to post-intervention prompts. While improvements were more subtle for this accuracy variable, students began writing longer stories that included more words and likely included more familiar vocabulary words or “million dollar words” that were targeted during the intervention phase. Additionally, as more words were included in each student’s story, the impact of a misspelled word or incorrect convention of writing became less impactful when calculated as a percentage. Even Jeremy, who demonstrated the highest level of accuracy during the baseline phase with 83%, increased his overall accuracy to 93% during the post-intervention phase. Although revision strategies were not specifically targeted during the intervention phase, it was observed that each student would review their writing goals and self-statements by reviewing their story. For Jeremy, one of his person goals was appropriately using the word “an,” and he caught his own mistakes independently on a number of instances. Students did not graph the variable of %CWS given the complexity of scoring and time delay in scoring following the session; therefore, increases in motivation as a result of graphing did not impact the students’ writing quality related to %CWS.

Writing quality was also measured by examining story completeness, as measured by the number of story elements used by each student in each of their stories. Because students learned the seven parts of a story, identified them in others stories, and learned how to implement story elements in their own writing, it was hypothesized that all students would improve the number of story elements they included in their stories from baseline to post-intervention.

Results for number of story elements demonstrated the most striking improvement for all students. These results are consistent with previous research suggesting that instruction in planning increases the number of elements in students’ stories (Saddler, 2006; Saddler et al., 2004). Specifically, all three students used three or less story elements across baseline stories.

Following the instruction phase, 100% of post-intervention stories included seven story elements, for all students. Students did graph the number of story elements following the completion of their story. Both graphs for TWW and number of story elements sat were visible to students during the session, as was a page with their personal goals for writing. The graph for number of story elements also may have acted as a second reminder to student to ensure that their story included all seven elements. Additionally, while all students would write brainstormed ideas for all seven elements on their story planner, Mike most consistently adopted the habit of crossing off each element as he used it, to ensure that he did not forget to include any.

Time spent planning and writing. While not an original hypothesis of the study, data were collected on the number of seconds that students spent planning their stories prior to writing. For all three participants during baseline, 0 seconds were spent planning stories. During post instruction, Jeremy increased his planning from 0 seconds to an average of 112 seconds, the least of all three students. Mike increased his planning time from 0 seconds to 300 seconds, and Jason from 0 seconds to 248 seconds. Despite the variations, all students incorporated all seven story elements in each of their post intervention stories. Similar to Jeremy's checking or revising strategy for %CWS, all students identified a self-regulatory goal of monitoring that all seven story elements were evident in their story. In fact, many of the students' stories included multiple instances of each story element (e.g., more than one who or when), but following scoring rules, only one occurrence of each element was scored.

Finally, additional evidence suggesting a relationship between writing quantity and writing quality was observed with an increase in total writing time. As students learned to incorporate seven story elements in their stories, they naturally demonstrated an increase in total words written, as well as an increase in overall time spent writing. Similar to findings for time

spent planning, Mike increased his time spent writing the most, from an average of 126 seconds at baseline to a mean of 1360 seconds post-intervention. Jason and Jeremy's increases were similar from 142 seconds to 928 seconds, and 189 seconds to 780, respectively. Interestingly, while Mike and Jeremy increased the amount of time they spent writing sequentially with each post-intervention story, Jason's time spent writing slightly decreased with each post-intervention story. However, the number of words did not necessarily decrease along the same trajectory, perhaps indicating increased efficiency in using the strategies learned. Despite the patterns observed, each post-intervention story included all seven story elements.

Test of Written Language-Fourth Edition (TOWL-4)

The TOWL-4 was used as a measure of writing to first identify students as appropriate for the study, and was also re-administered at the end of the study to identify changes in overall writing performance. As a standardized measure, the TOWL-4 allows for comparison between students participating in the study, as well as a comparison to other children their age, based on a national normative sample. Previous research has found that students who receive direct strategy instruction in the area of writing (e.g., *Reasoning and Writing*, *Expressive Writing*) have demonstrated increased TOWL scores on both the Spontaneous Writing composite (e.g., Anderson and Keel, 2002) and the overall TOWL score (e.g., Walker, et al, 2005).

Based on data in this study, all three students demonstrated impressive increases on the TOWL-4 Spontaneous Writing Composite approximately 12 weeks after baseline administration. It cannot be confirmed that the improvements on the TOWL-4 were accomplished solely through the planning and self-regulatory skills that were taught as part of the intervention used in this study, as the students were receiving general classroom instruction at the time of the study. However, the design used in this study reduces many concerns for internal validity and the gains

made by each student were substantial, providing encouraging evidence that the intervention was effective in improving student writing performance.

All three participants increased their performance on the Contextual Conventions and Story Composition subtests. The improvements in the area of Contextual Conventions were particularly interesting as students were not directly taught conventions of writing, but rather a few identified conventions were targeted by one participant (e.g., using “an” appropriately) as individual goals for their writing.

Additionally, despite improvements on both subtests, and therefore for the overall Spontaneous Writing composite, all three students commented on challenges with generalization. The TOWL-4 Spontaneous Writing section provides students with different instructions and a different prompt type. The TOWL-4 uses a picture prompt, which the intervention used a sentence starter throughout the study. During the baseline phase, when presented with a sentence starter, Jeremy sat for multiple minutes without planning or writing anything before declaring he could not develop any ideas. Conversely, when presented with a picture, he began writing immediately. When he returned to the sentence starter at a later time, he wrote only one sentence. Jason demonstrated a similar trend during baseline when presented with contrasting stimuli. However, during post-intervention TOWL-4 completion, Jason commented that “now writing about picture” did not allow him to be as creative, and, subsequently, he demonstrated the least improvement amongst the three students on the Story Composition subtest. While all three students generalized gains made during the intervention to post-TOWL-4 performance overall, the above comments and findings may speak to increased difficulties with generalization and the literal interpretation common to students with AS.

However, overall gains from pre- to post TOWL results in a 12 to 15 week period are impressive. Skills targeted during the SRSD intervention were found to impact overall writing quantity, completeness, attitudes, and perceptions about writing during the post instruction and maintenance phases. It can be inferred that student motivation increased during the intervention, and performance in all of the above mentioned areas were found to impact post TOWL performance. Specifically, planning and increases in number of story elements used were a large contributor to TOWL gains, as was vocabulary use (“million dollar word”).

The results of the current study extend research on using SRSD with middle school students with AS, and provide promising findings suggesting simple strategies targeting self-regulatory behaviors and motivation can not only increase the total production produced by students, but also the quality, both accuracy and completeness, of the stories that are written. Direct instruction of the story elements likely contributed to an increase in planning time, story writing time, as well as total words written. Additionally, it is anticipated that motivation strategies, such as graphing performance, and for Jason, telling his dad about his improvements each day, played a role a role in overall writing improvements as well. These strategies are likely feasible for other professionals, including teachers in the classroom and special education teachers, to adopt.

Impact of SRSD on Students’ Attitudes and Self-Efficacy

Previous research examining student attitudes and self-efficacy has been limited and inconsistent. Specifically, previous studies conducted using SRSD with a population of students with AS has never measured students’ attitudes and self-efficacy towards writing. When looking at previous SRSD studies targeting other student populations, Zumbrunn & Murphy-Yagil (2009) found that specific strategy instruction positively influenced young writers’ attitudes

about writing. However, measures of self-efficacy toward writing has demonstrated inconsistent results (e.g., Gaskill & Murphy, 2004; Graham et al., 2005; Harris et al., 1988; Page-Voth & Graham, 1999; Zumbrunn, 2010). Again, few of these studies targeted a middle school population and none of these have included students with AS. Despite this, given the positive effects SRSD has had on student writing performance for students with and without AS, it was hypothesized that SRSD instruction would demonstrate improved attitudes and self-efficacy toward writing.

Based on the data in this study, it was found that both students' attitudes and self-efficacy toward writing increased for all three participants. Interestingly, Mike and Jeremy's attitudes were remarkably similar both pre- and post-intervention, and also increased the most from baseline to post-intervention. Both of these students demonstrated a steady, incremental increase in performance. Mike and Jason also had the lowest baseline writing scores, compared to Jeremy.

Jeremy's self-efficacy for writing raw score was the highest at baseline, and demonstrated the least gains post-intervention. Contrastingly, Mike's self-efficacy score was the lowest at baseline and while demonstrating a comparably large increase to Jason's, remained the lowest post-intervention. Overall, a general congruency between reported attitude and performance is consistent with previous findings suggesting that student attitudes toward writing influence student writing performance (Graham, Berninger, & Fan, 2007). Additionally, despite various trends regarding degree of improvement in both attitude and self-efficacy, all students demonstrated gains, consistent with the overall improvements in writing production and quality.

The results of the current study add to the SRSD literature by examining previously explored variables of attitudes toward writing, as well as self-efficacy pre- and post-intervention

for students with AS. These findings are promising and suggest that this writing intervention not only has the potential to impact writing production and quality, but also improve students' attitude and self-efficacy. Following the intervention, Mike's mother shared that his classroom teacher described him as a "completely different student when it comes to writing" and indicated that he would choose to complete writing tasks in class voluntarily which was a significant contrast to his previous behavior of avoiding writing tasks. It is not clear how the variables of writing performance and attitudes impact each other. It is possible that the student's observation of improvement through graphed results has the potential to improve attitudes and self-efficacy, but it also is possible that improved attitudes and self-efficacy has the potential to positively impact performance. To date, the impact of students' attitude and self-efficacy on the effectiveness of SRSD has rarely been evaluated. Future research should incorporate measures examining student attitudes and perceptions of writing to further understand the impact on student performance. It is possible that attitude and perception has an impact on the overall effectiveness of the intervention.

Impact of SRSD on Maintenance of Gains

Only three of the previous studies using SRSD with student with ASD collected maintenance data. All three, Delano (2007a), Asaro & Saddler (2009) and Asaro-Saddler & Saddler (2010), were successful in demonstrating maintenance of improved writing performance for students with AS two to four weeks post intervention. Specifically, all students demonstrated maintenance of gains above baseline, but not all consistently demonstrated gains above post intervention for measures of both writing quantity and quality; . Thus, it was hypothesized that students with AS in the current study would also demonstrate improved performance four weeks post-intervention.

Based on data in this study, all three students did demonstrate maintenance of gains from baseline for all variables (i.e., TWW, %CWS, number of story elements, as well as time spent planning and time spent writing). For TWW, all three students demonstrated a decrease in total words written from post-intervention, but maintained an average number of total words that was higher than baseline. Jeremy was the only student who did have one maintenance TWW data point below a baseline data point. This particular maintenance data point was collected two weeks following post-intervention data, but interestingly, maintenance data points at weeks three and four demonstrated significant increase from point two, and actually represented the two longest stories Jeremy wrote out of 15. Thus, it is possible that fatigue or topic interest may have played a role in the one outlier data point collected during maintenance.

While an overall increase from baseline, but decrease from the post-intervention phase, was observed for TWW for all three students, %CWS demonstrated maintenance of increase from baseline, and near identical gains as compared to post-intervention %CWS scores. Thus, while students may have been writing less in the maintenance phase as compared to the post-intervention phase, the accuracy of their writing remained consistently high.

Finally, the maintenance of the quality of writing as measured by number of story elements for each student demonstrated maintenance of post-intervention gains. These data demonstrated a consistent use of all seven story elements for all four maintenance points for all three students. Overall, these maintenance results are extremely promising in demonstrating that gains in performance were maintained for at least four weeks post-intervention. This finding is encouraging for students to have the potential to carry over pre-requisite skills for story writing to enhance their writing in other areas of writing, such as persuasive essay writing as targeted in Asaro-Saddler and Bak (2012). In addition, statewide testing scoring is influenced by story

length, writing accuracy, and inclusion of relevant story parts. With continued maintenance, these participants should be more successful on state and classroom evaluations than they would have been without intervention.

Impact of SRSD on Social Validity

To date, none of the existing research on SRSD instruction with students with AS, or other ASDs, has incorporated a structured measure asking students how they felt regarding the appropriateness and effectiveness of the targeted intervention. However, a limited number of studies using SRSD or other academic interventions with diverse populations have incorporated social validity measures (e.g., Wong, et al., 2008, Schnee, 2010). Consistent findings suggested that participants perceived the intervention to be helpful and indicated an overall satisfaction, including positive relationships with the interventionist. Therefore, it was hypothesized that social validity scores would be high, demonstrating overall student satisfaction with the intervention in the current study.

Based on the data in this study, it appears that all students were in fact satisfied with the intervention and felt that SRSD was appropriate to address their, as well as others, writing challenges. A consensus of “strongly agree” was reported for fairness of the program and appropriateness of SRSD to handle their writing problems, as well as anticipation that it would be helpful for other children as well. Additionally, all students strongly disagreed that the tutor (i.e., researcher) was too harsh. Interestingly, less certainty was observed for two questions requiring the students to hypothesize “the writing program might cause problems with my friends” and “there are better ways to handle writing problems.” For the first question, a range of “I disagree very much” and “I don’t agree or disagree” was reported, and for the second, a range from “I sort of agree” and “I sort of disagree” in response to the statement. As students with AS

often have a more difficult time taking the perspectives of others and hypothesizing various outcomes, it is possible these characteristics impacted their response choice for some items in this survey. Despite minor variability, the general trend found that all students considered the intervention appropriate and demonstrated satisfaction. This finding remained consistent with overall improvements in performance across participants, as well as increased attitudes and perceived self-efficacy.

These findings, consistent with findings for other hypotheses, again provide promise to the impact and appropriateness of SRSD for this unique student population. A combination of improved performance, maintenance of gains, and improved attitude and self-efficacy would not be as encouraging without students' general perception of appropriateness and acceptability of the intervention being used. Previous research (e.g., Miltenberger (1999); Guerasko-Moore, Dupaul, & White (2006)) suggest that if an intervention is considered acceptable, a person is more likely to use, be motivated, and continue to use an intervention. It is hypothesized that given the level of acceptability, as well as improvement in attitude and self-efficacy, that the participants in the current study will continue to generalize and use the skills taught during the intervention in other academic settings. In fact, as discussed above, one participant's classroom teacher shared a noticeable improvement in student writing performance, as well as attitude, in the classroom.

Future research should consider incorporating social validity measures for students, as well as parents and teachers. An overall positive consensus across all variables examined in this study speaks to confirmed suitability that SRSD has for a population of students with AS.

Limitations and Recommendations for Future Research

As with any single-subject design, there are limitations inherent external validity. First, a limited number of students participated in the current study and all participants represented one gender and ethnicity. Thus, it cannot be assumed that these students are representative of all students their age. Additionally, it is important to consider that children with AS represent a diverse group and generalizability of results may be limited. Future studies should consider the use of larger and more diverse samples of students, including females, participants from varying grades, and participants from diverse ethnic backgrounds.

Second, all instruction in the current study was conducted in a one-on-one format, as opposed to in a group setting. This type of intervention administration can be time consuming and inefficient in meeting the needs of a larger group of students. Writing instruction is most commonly provided in a classroom or small group setting, dependent upon the needs of the majority of students. Furthermore, the individual instruction used in this study demonstrated effective outcomes for increasing student writing performance: however, the generalizability of these results to a group setting should be interpreted with caution. While planning skills have been taught effectively in group settings (e.g., Tracy et al., 2009), group instruction for students with AS has not been evaluated, likely resulting from the limited number of pilot studies conducted using this population. While possible concerns may exist regarding the appropriateness of group instruction for children identified to have deficits in social skills, the flexibility of the SRSD intervention to accommodate individual needs and to focus on independent skill building makes it likely that kids with AS could benefit from group instruction. Thus, future research should consider evaluating the effectiveness of SRSD within a homogenous group, a small group made up of individuals of diverse diagnoses, as well as classroom settings.

Finally, while difficulties with handwriting were not observed to significantly impact the performance of students in the current study; many students with AS often experience handwriting difficulties (Broun, 2009). Handwriting challenges have the potential to impose a barrier for students with AS, and may potentially impact the quantity and quality of their writing output. Thus, it may be important for future studies to incorporate alternative methods of writing, such as word processing or dictation, to allow students to express their thoughts and demonstrate their knowledge completely.

Conclusion

The purpose of this study was to evaluate SRSD, an instructional and self-regulatory strategy approach to writing, with a unique population of students with AS. Limited research has examined the appropriateness of this well-established, well-researched intervention with a population of students with AS who present with unique needs and challenges that have been identified to specifically impact writing. Students with AS have been found to have poorly developed planning skills, impacted by difficulties with abstract thinking, challenges imagining possible future events and scenarios, and often exhibit restricted interests and literal interpretations of ideas that may directly impact their ability to plan and write an imaginative story (Myles, 2005). SRSD teaches planning and composing strategies to students, while teaching self-regulatory behaviors and increasing motivation. The students in this study moved through the lessons at their own pace, were taught direct skills to increase the quality and completeness of their stories, and were taught self-regulatory skills and motivation strategies to develop independence. The results of this study demonstrated a) improvements in the overall quantity and quality of student writing, b) maintenance of gains four weeks post-intervention, c)

increased attitudes toward writing and self-efficacy, and d) social acceptability from students about the general helpfulness and appropriateness of this intervention.

Current statistics suggesting that only 6% of writers with disabilities, a category that includes students with AS, are writing at a proficient level. These data speak to the need for a continued focus on improving the writing skills of all students. The current study extended the research on SRSD by implementing this intervention with a unique student population, while considering the role of attitude, self-efficacy and social acceptability. The results of this study demonstrated that Self-Regulated Strategy Development is an effective and appropriate intervention for students with AS, meeting the identified needs of a unique population.

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Psychology, 22, 73–101.

Appendix A

AIMSweb® W-CBM Story Starters

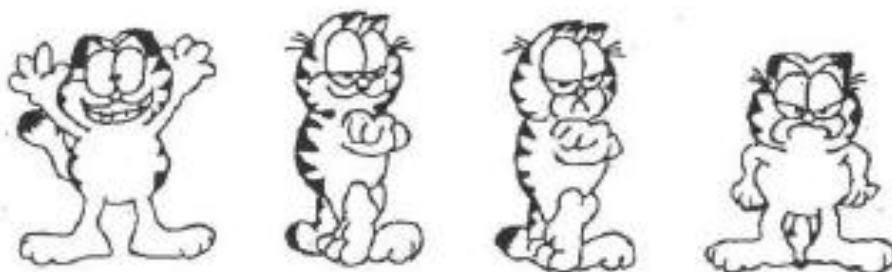
1. I couldn't fall asleep in my tent. I heard this noise outside and ...
2. My father sold his store last year and my whole family ...
3. All during the day I was nervous. I ran home at 3:00. When I got home ...
4. I was fishing in the river when I felt a terrific tug on the line and ...
5. One sunny morning, some kids biked to the lake for a picnic lunch. After they ate, the ...
6. As I got up from my chair, I turned around and noticed all the smoke in the room ...
7. Every day after school my friends and I would go to the playground and ...
8. The cave was dark and here were a lot of twists and turns and funny corners. I was scared but kept going and ...
9. A young deer stepped into the river and bent his head down to drink. From where I was standing, I ...
10. The long freight train pulled into the station and ...
11. The two space invaders stepped out of their spaceship and ...
12. A police officer stopped the driver for speeding and ...
13. The children were rehearsing for the school play and ...
14. The noise was getting louder and louder ...
15. I opened the front door very carefully and ...
16. Yesterday the children went for a picnic and ...
17. As the jet flew over the mountains ...
18. The rocket ship landed on the moon and ...
19. The mother and her daughter were walking in the park and ...
20. It was a hot, dry day and I had been walking for hours without food or water when ...
21. We were paddling on a beautiful lake in the woods when our canoe tipped over and...
22. The day was warm and sunny and we were the only ones to see ...
23. I waved out the window at my family as ...
24. "Up we go," said my friend, and ...
25. Maybe animals aren't supposed to talk, but ...
26. One day last summer, the only way I could walk was backward and ...
27. I once had a magic pencil and ...
28. The other day my father took me with him when ...
29. Just as we got into our seats, the ...
30. Strange footprints were seen in the sand and ...
31. The phone call was mysterious and ...
32. Due to the serious nature of this mission, you ...
33. I looked around the space ship and ...
34. The airport control tower was busy when ...
35. I stepped into the time machine and ...
36. The roaring snow storm howled and ...
37. I was shipwrecked on a deserted island when ...
38. The monster was sighted and ...
39. The river was raging and it was clear that ...

40. He crossed his fingers and opened the box. Suddenly ...
41. She woke from a sound sleep when something ...
42. Walking slowly down the stairs, the boy felt the hair stand up on the back of his neck and ...
43. They couldn't believe it was happening. The door was opening very slowly and ...
44. As he opened the door the ...
45. My heart seemed to stop beating as I opened the door ...
46. I decided to follow the huge footprints along the trail, as I was ...
47. The day was dark and misty as ...
48. Working madly in my laboratory, I suddenly realized that my magic formula ...
49. If I were to make a TV show, it would be about ...
50. The car drove off the road and ...
51. The bear attacked my dog and ...
52. When the boat went out of control, I ...
53. I was in the middle of the lake when ...
54. I was riding on an elevator when...
55. My friend fell off the horse and ...
56. I was sleeping soundly when ...
57. I was picking berries when ...
58. My 2-year-old brother found a magic marker and ...
59. I would like to be invisible because ...
60. One day I went for an airplane ride and ...
61. When I was in the Olympics, I ...
62. It was dark when I saw it moving. It ...
63. My friend and I were walking by an old deserted house and ...
64. On Tuesday, a big wind came up and ...
65. I was chewing a piece of bubble gum when ...
66. I saw colored lights in the sky and ...
67. In spite of my broken arm I knew I had to ...
68. There was the sound of the tent fabric ripping and a large paw ...
69. Out of the darkness came the sound of large flapping wings and ...
70. The sun was just coming up over the horizon and then, in the middle of the lake ...
71. One day my mom surprised me and brought home a ...
72. I was running on the sandy beach and the gigantic waves ...
73. A person of super-human strength landed in the middle of town and ...
74. A pirate from the high seas ...
75. On the deserted island ...
76. One night in the abandoned graveyard ...
77. On another planet ...
78. In another galaxy far, far, away ...
79. The young person was using the hang glider ...
80. In an imaginary world, the children believed ...
81. Being chased by a shark wasn't fun. I had to ...
82. Joining a parade sounded like fun and ...
83. Going on a camping trip with the scouts meant ...
84. The working mother hurried home to ...
85. The bus driver had a bus full of children when it drove into the mysterious fog ...

86. The driver changed a flat tire and ...
87. He accidentally crashed his car and ...
88. The teacher looked at the book when ...
89. After arresting the robber, the policeman found that the hadn't ...
90. The class was trying to photograph the moon when they saw it come out of the sky. It was going ...
91. The cat climbed the telephone pole and ...
92. The basketball player put on his special shoes and jumped high into the air and ...
93. I was playing outside when a spaceship landed and ...
94. Yesterday, a monkey climbed through the window at school and ...

Appendix B
Writing Attitude Survey

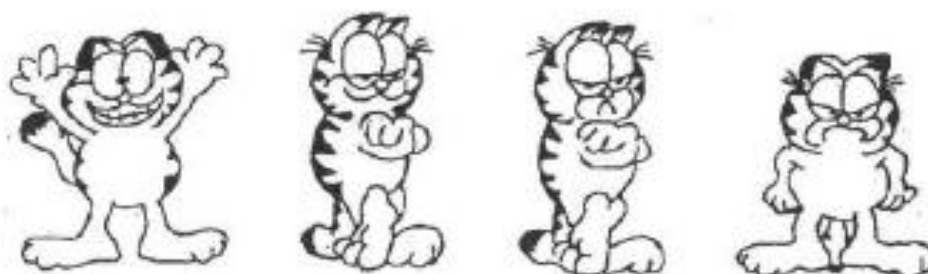
1. How do you feel about writing for fun at home?



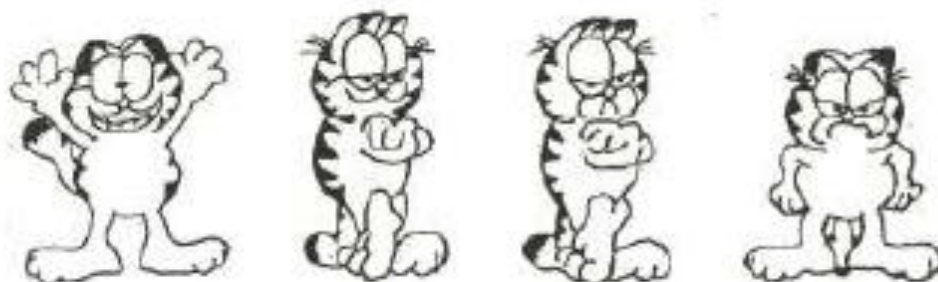
2. How do you feel when you write in school during free time?



3. How do you feel when you start to write a new paper?



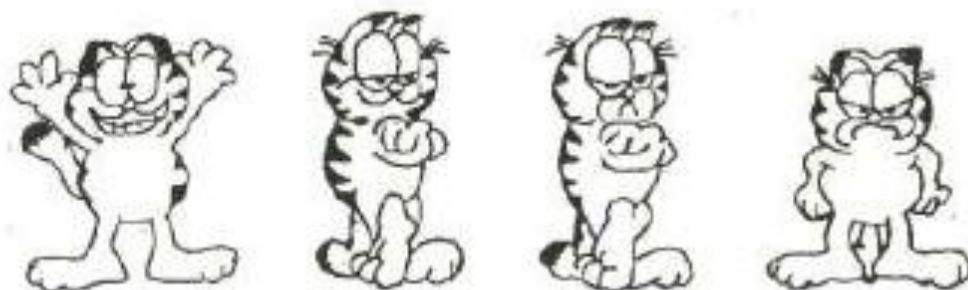
4. How do you feel about writing during summer vacation?



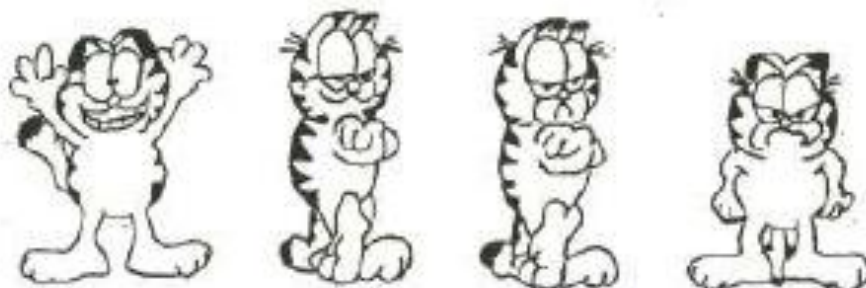
5. How do you feel about writing instead of playing?



6. How do you feel about writing different kinds of papers?



7. How do you feel when the teacher asks you questions about what you write?



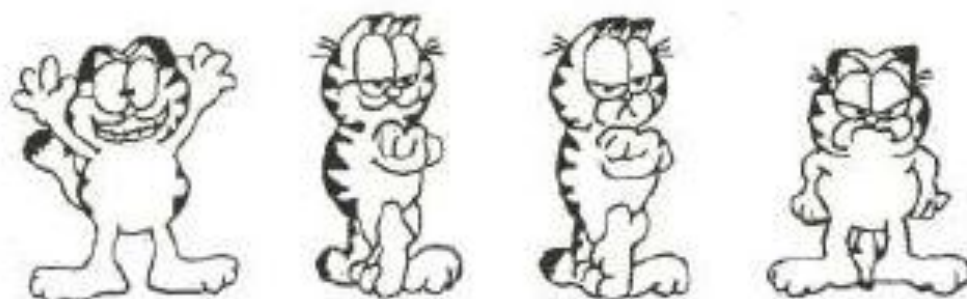
8. How do you feel about writing in school?



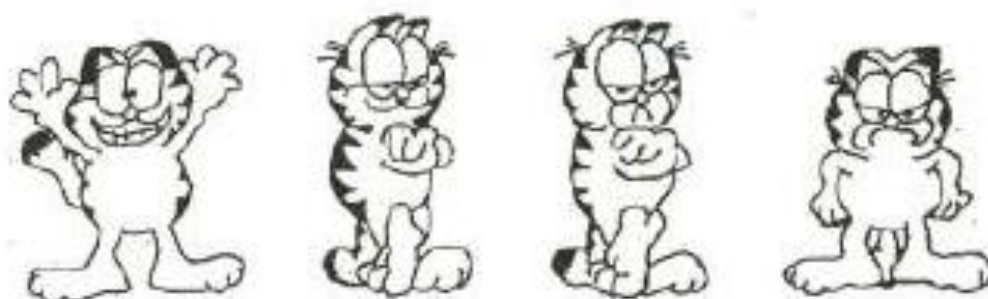
9. How do you feel about spending free time writing?



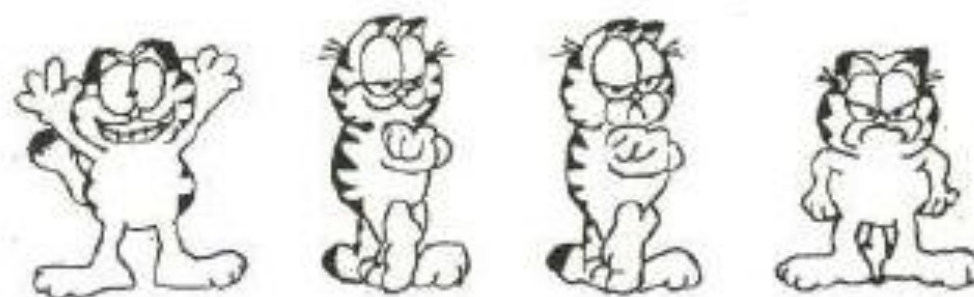
10. How do you feel when it's time for writing at school?



11. How do you feel about the papers you write at school?



12. How do you feel when share your writing with others?



Appendix C

Writing Self-Efficacy Scales

The following sentences describe feelings students have about writing. For each sentence, please circle whether you have that feeling *Never*, *Sometimes*, *Usually*, or *Always*. There are no right or wrong answers—just choose the word that best describes your feeling.

1. I can spell my words correctly.	Never	Sometimes	Usually	Always
2. I can write complete sentences.	Never	Sometimes	Usually	Always
3. I can punctuate my sentences correctly.	Never	Sometimes	Usually	Always
4. I can use good handwriting on my papers.	Never	Sometimes	Usually	Always
5. I can think of many ideas for my writing.	Never	Sometimes	Usually	Always
6. I can think of many words to describe my ideas.	Never	Sometimes	Usually	Always
7. I can put my ideas into writing.	Never	Sometimes	Usually	Always
8. I can choose descriptive words when I write.	Never	Sometimes	Usually	Always
9. I can concentrate on my writing for a long time.	Never	Sometimes	Usually	Always
10. I can avoid distractions when I write.	Never	Sometimes	Usually	Always
11. I can keep writing even when it is difficult.	Never	Sometimes	Usually	Always

Appendix D SRSD Lessons

Planning + Writing Instruction

Lesson 1

Lesson Overview

The **POW** and **WWW, What=2, How=2** strategies will be introduced in this lesson. The teacher and students will collaboratively locate the story parts **Who, When, Where, What=2, How=2** in two stories. Students will begin to learn the two strategies. Students will establish writing partners and concept of transfer.

Student Objectives

Students will identify the 7 parts of a story in two stories.

Materials

Mnemonic charts, story examples (*Albert, Sly Fox*), **WWW** graphic organizers, paper, pencils, scratch paper, student folders

Set the Context for Student Learning

Introduce yourself as a writing teacher. Say, “ I’m going to teach you some of the tricks for writing. First, we’re going to learn a strategy, or a trick, that good writers use when they write. Then, we are going to learn the trick, or strategy, for writing good stories.”

Develop the Strategy and Self-Regulation

Step One - Introduce POW.

- Put out the **POW + WWW** mnemonic chart so that only **POW** shows.
- Emphasize **POW** is a trick good writers often use, for many things they write.
- Go over the parts of **POW**, discussing each. (P = Pick my Idea; O=Organize my Notes; W=Write and Say More). Emphasize that they can remember POW because it gives them **POWER** when they write.

- Practice **POW**; turn the mnemonic chart over. Ask each student (skip around) to explain what **POW** stands for. Help as needed. Do until you feel sure that each student knows what **POW** stands for.
- Discuss good stories (briefly) - ask students, what makes a story good? Be sure to include (you add if they don't say it):

1. Good stories are **fun** for me to write and **fun** for others to read.

- Good stories **make sense** and have several **parts** - we will learn a trick for remembering the parts of a good story.

Step Two – Introduce WWW, What = 2, How = 2

- Introduce **WWW** - uncover more of the mnemonic chart so that the **WWW** shows. "Let's find out what the parts of a good story are." Have students look at the chart. Briefly discuss each W. (Be sure to use the word "character" for **Who**; for **When**, ask students to tell you "how does a person tell **When** in a story?" - Once upon a time ... A long time ago ... Yesterday... Wednesday afternoon at 4:00, and so on. Ask students for examples of what might be **Where** in a story.
- Uncover **What = 2**. Explain and briefly discuss each **What**. Get examples of how a writer might tell each.
- Uncover **How = 2**. Explain and briefly discuss each **How**. Get examples of how a writer might tell each.

Step Three – Find Parts in a Story

- Say, "Now we're going to read a story to find out if the writer used all of the parts of a good story." (Leave out the mnemonic chart where students can see it.)
- Lay out a **WWW** graphic organizer. Point out the story parts reminder (**WWW, What=2, How=2**) at the top, and review what it stands for.
- Give each student a copy of the story (*Albert*); ask students to read along silently while you read the story out loud. Then read the story out loud again and tell them to raise their hands when they hear **Who**, **When**, or **Where** in the story. Call on students as they raise their hands (all students should have a turn). As they identify **Who**, **When**, and **Where**; you write each in the appropriate space on the graphic organizer. DO NOT USE FULL SENTENCES – DO THIS IN NOTE FORM.

- Tell students that they are now looking for the 2 **Whats** and 2 **How**s. Briefly review what each means (be sure students know what the "goal" means for the first **What** question). Remind to raise their hands when they hear one in the story. Read the story from beginning. Stop as hands are raised; you write each **What** and each **How** in the appropriate space on the graphic organizer. **DO NOT USE FULL SENTENCES – DO THIS IN NOTE FORM.** If you get to the end of the story and students have not identified all of the parts, go back over the story and help as needed. Be sure to be encouraging and positive throughout.

Step Three – Practice Story Parts

- Practice Story Parts Reminder. Turn over mnemonic chart and students' papers. Ask students to tell you the "story parts reminder". (They should tell you: **W-W-W; What = 2; How = 2**). Ask students to write the reminder on scratch paper. If students have trouble, turn chart back over and allow them to look. Keep doing this until all students can tell you the reminder and write it on paper for memory.
- Practice story parts to criterion. Ask students to explain the parts. (Keep chart turned over, but allow students to look at the **W-W-W; What = 2; How = 2** that they wrote out on scratch paper.) Help as needed. Do this until you feel sure that students know what all the parts are.

Step Four – Find Parts in a Second Story

- Do second story (*Sly Fox*). Leave out mnemonic chart. As before, remind students to raise their hands when they hear a part. Be sure each part is identified. Do not ask write them out this time. Point to, or ask students to point to, where each part goes on the chart.

Step Five – Establish Partners and Transfer

- Tell the students that they will act as writing partners. Emphasize that you want them to use **POW** and **WWW** in all of their other classes where they can, and that they will act as partners to help each other do that.
- Describe and discuss Goal 1 for next time: use all or parts of **POW** and/or **WWW** in other classes or for other writing tasks. Brainstorm together some classes or other writing tasks they could use both **POW** and **WWW** for, being sure to note that we should use **POW** with **WWW** whenever we use **WWW**. Other ideas could be: book reports, letters to friends, reports on special topics, writing for a school newsletter, writing about something that happened to you or a special event, and so on. Briefly note that for some tasks, like writing a report, all parts of the **WWW** trick might not be right to use - so what could we do? (Change **WWW** to fit the kind of report we need to write; don't use all of **WWW** if it doesn't make sense; **WWW** is in many reports).

- Tell the students to report back to you on using all or any parts of **POW/WWW** next time (for example, students might report making notes for a writing task before they wrote, this would count). Show them their “I transferred my strategies/ I helped my partner” chart and explain that they will write down and put a star next to each time they tell you about using all or any part of **POW/WWW** outside of this class. Briefly discuss the word “**transfer**”- transfer means to move (like I transferred schools means that I moved from one school to another). Emphasize that you want them to **transfer** what they learn about **POW** and **WWW** from this class to other classes and other writing tasks.
- Describe and discuss Goal 2 for next time: help each other by reminding each other when you might **transfer POW/WWW**; report back on times you helped each other transfer by reminding your partner. Explain that you will write down and put a star next to each time they tell you about helping their partner transfer all or any part of **POW/WWW**. Ask them to tell you what **transfer** means and make sure they have it!

Wrap- Up

- Announce test (no grade) next session! Students will come and write out **POW** and the story parts reminder and tell what they mean from memory. Have each student take their scratch paper with **POW** and the story parts reminder on it with them.
- Remind them that they will fill in the transfer chart next time.
- Give each student their own folder & a copy of the story parts reminder chart. Have them put today’s work and their charts in their folder.

Lesson 2

Lesson Overview

The **POW + WWW, What=2, How=2** strategies will be reviewed. Students will examine a story that they had previously written and look for the number of story parts. This current progress for each student will be graphed and a goal set to get all 7 story parts next time. Students will record their transfer efforts.

Student Objectives

Students will orally state where they transferred either **POW** or **WWW** and tell how they helped their partner. Students will identify parts in a story. Students will set a goal for writing stories with seven parts.

Materials

Mnemonic chart, additional story example (*The Tiger's Whiskers*), a story previously written by each student, **WWW** graphic organizer, transfer charts, paper, pencils, scratch paper, student folders, story rocket graphs

Set the Context for Student Learning

Test to see if the students remember **POW** and **WWW, What=2, How=2**.

- Give each student a piece of scratch paper. Ask them to write down **POW** - then ask them what it stands for. If students are having trouble remembering **POW**, practice it.
- Ask them to **WWW, What=2, How=2** on the scratch paper. If a student has trouble, be supportive and prompt as needed.
- Now ask students what **WWW, What=2, How=2** stands for. Alternate between the students so that every student has opportunity to answer.
- It is essential that each student memorize the reminder. If some students are having trouble with this, spend a few minutes practicing it (see practice cards). Tell the students you will test them on it each day to make sure they have it. Remind students that they can practice memorizing it.

Review and record transfer.

- Review the meaning of transfer briefly.

- Ask students to report back on using all or parts of **POW** and/or **WWW** in other classes or for other writing tasks. If necessary, brainstorm together again some classes or other writing tasks they could use both **POW** and **WWW** for, being sure to note that we should use **POW** with **WWW** whenever we use **WWW**. Other writing tasks could be: book reports, letters to friends, reports on special topics, writing for a school newsletter, writing about something that happened to you or a special event, and so on. Briefly remind the students that for some tasks, like writing a report, all part of the **WWW** trick might not be right to use – so what could we do? (Change **WWW** to fit the kind of report we need to write). Fill in the “I transferred my strategies and I helped my partner” chart. Star each recorded item.

Develop the Strategy and Self-Regulation

Step One - Identify Story Parts

If necessary, go through one more story example (*The Tiger's Whiskers*) and have students verbally identify the story parts

Step Two – Establish Current Level of Performance

- Say, “Remember the story you wrote for me the other day?” Pass out student's previously written stories.
- Tell students to read their story and see which parts they have. (You need to have worked out ahead of time what parts they had and which ones they didn't have..
- Briefly note with students which parts they have and which they don't. As a group, briefly note common parts missing.
- Note also that even though we have a part, we might be able to make that part better next time- this makes our story more fun to write and more fun to read. Discuss examples of how they could do each using either their stories or *Albert the Fish/Tiger's Whiskers*
 - can have more than 1 character.
 - can tell more about when and where
 - can have more things happen (action).
 - can tell more about characters' feelings.
 - can have a neat ending.
 - can use good word choice (e.g., color words) or “million dollar words”.
 - can use an interesting first sentence.

- Introduce story rockets graph; give each student a graph and have each student fill in the graph for the number of parts they had in their pretest story. Be very positive, remind them that you are just now learning the trick of writing good stories.
- Explain goal - to write better stories. Remind them that good stories: are fun for me to write and for others to read, have all 7 parts, that each part is well done, and that good stories make sense.
- Say, "Our goal is to have all of the parts and 'better' parts the next time we write a story."

Wrap- Up

- Have students put papers from today's work in folders.
- Remind them that they will fill in the transfer chart again next time.
- Remind of **POW** and **WWW, What=2, How =2 TEST** again next time.

Evaluation

If students are still having trouble finding the 7 parts in the stories you have read, plan to read aloud another story at the beginning of the next lesson.

Lesson 3

Lesson Overview

The teacher will model using the **POW + WWW** strategies for writing a story. Self-instructions as a self-regulation procedure will be established.

Student Objectives

The students will write the story parts reminder from memory. The students will listen to a teacher modeled lesson. The students will write a list of things they say to themselves when writing..

Materials

Mnemonic chart, **WWW** graphic organizer, paper, pencils, lined paper, student folders, “turtle” practice picture, stories (*Farmer’s Story*, *How to Fool a Cat*), self-instructions sheets, blank graph

Set the Context for Student Learning

Test to see if the students remember **POW** and **WWW, What=2, How=2**. Do it out loud to save time. It is essential that each student memorize these. If students are having trouble with this, spend a few minutes practicing it (see practice cards). Tell the students you will test them on it each day to make sure they have it.

Record and review transfer.

Develop the Strategy and Self-Regulation

Step One - Find Story Parts.

- If students are still having trouble finding the 7 parts, do another story (*How to Fool A Cat* or *The Farmer’s Story*) out loud now.
- If necessary, do the other story above out loud to practice finding the 7 parts.

Step Two – Model POW

- Lay out a copy of the **POW + WWW, What=2, How=2** graphic organizer. Then explain and say, “Remember that the first letter in POW is P - pick my idea. Today we are going to practice how to think of a good story idea and good story parts. To do this we have to be creative, we have to think free.”

- Say, “Look at the turtle practice picture.” Explain to the students the things that you say to yourself when you want to think of good story ideas or parts. Be sure to say each of these examples: “I have to let my mind be free.” “Take my time, a good idea will come to me.” “Think of new, fun ideas.” “What ideas for parts do I see in this picture?” Explain: “The things you say to yourself help you to work.” Note that it’s not always necessary to think out loud, you can think these in your head.
- Ask the students, “What things do each of you want to say to yourself to help you think of good story ideas and good parts?” Try to get 2 or 3 self-statements from each student. If students give you negative statements, (e.g., “I’m not good at ideas.”) briefly discuss that there are some things we wouldn’t want to say to ourselves because they may get in our way of doing a good job, and help them think of things to say that will help them work. Record the student’s self-statements on their self-statements sheet. Leave sheet out.

Step Three – Model WWW, What=2, How=2

- Say, “The second letter in **POW** is O- ORGANIZE my NOTES. I am going to write a story today with your help - I will use my story parts reminder to help me. I will use this page to make my notes and organize my notes; you will do this too the next time you write a story.” Briefly review - point at - the 7 parts of a good story on the graphic. Say, “What should my goal be? I want to write a good story - a good story has all seven parts, makes sense, and is fun for me to write and for others to read.”

Step Four – Model Writing a Story

- Keep the **POW + WWW, What=2, How=2** mnemonic chart and the students’ self-statements sheets out.
- Model the entire process; writing an actual story as you go (using the turtle practice picture). Use problem definition, planning, self-evaluation, and self-reinforcement self-statements as you go. Use “million dollar words,” “color words,” and “good word choice.” Follow the steps and statements below, filling in ad lib statements where indicated. Ask the students to help you with ideas, but be sure you are in charge of the process.
- Say, “What is it I have to do? I have to write a good story. A good story makes sense and has all 7 parts. Remember P in **POW** - pick my idea - let my mind be free.” (Pause) “Take my time, a good story idea and good parts will come to me.” (Pause)

“Now I can do O in **POW** - Organize my Notes. I can write down story part ideas for each part. I can write ideas down in different parts of this page as I think of ideas (be sure to model moving out of order during your planning). What ideas do I see in this picture? (Now - talk out and fill in notes for who, when, where). For

who I see ... For **when** I can write ... Let's see, for **where**- it's ... Good! I like these parts! Now I better figure out the 2 **whats** and 2 **hows**. Let my mind be free, think of new, fun ideas. (Now talk out and briefly write notes for the 2 whats and 2 hows - not in full sentences - use coping statements at least twice.) Let's see, for the story question of "what does the main character want to do" I think ... For the next **what** question, "what happens when she tries to do it" I think... I can add more action by writing about ... For the "ending" I can say ... For the "feeling" story part I can write about ... (After generating notes for all the story parts say - Now I can look back at my notes and see if I can add more notes for my story parts - actually do this - model it - use coping statements). I can also look for ideas for good word choice or million dollar words - do this."

"Now I can do W in **POW** - write and say more. I can write my story and think of more good ideas or million dollar words as I write." Now - talk yourself through writing the story; the students can help. Use a clean piece of paper and print. Start by saying "How shall I start? I need to tell who, when, and where." Then pause and think, then write out sentences. Be sure to add 1-2 more ideas and million dollar words and note on your plan as you write. Don't hurry, but don't slow it down unnaturally. Also, at least 2 times, ask yourself, "Am I using good parts and, am I using all my parts so far?" Use coping statement. Also ask yourself, "Does my story make sense?" When story is done, say "Good work, I'm done. It'll be fun to share my story with others."

Step Five – Student Self-Statements

- Add to students' self-statements lists. Ask the students if they can remember: 1) the things you said to yourself to get started? 2) things you said while you worked (try to get some creativity statements, coping statements, statements about remembering the parts, and self-evaluation statements) 3) things you said to yourself when you finished. (Tell them if they can't remember and discuss each as you go). Make sure each student adds these to their list:
 - What to say to get started. This must be along same lines as, "What is it I have to do, I have to write a good story with good parts, and with all 7 parts," but in students' own words.
 - Things to say while you work: self-evaluation, coping, self-reinforcement, and any others he/she likes (in students' own words).
 - Things to say when you're finished (in students' own words).
 - Note that we don't always have to think these things out loud; once we learn them we can think in our heads or whisper to ourselves.

Step Six - Model Graphing Success

- Graph the story written during the modeled lesson. Ask students, “Does this story have all 7 parts?” Fill in a blank story rockets graph. Self-reinforce yourself and the class for a job well-done.

Wrap- Up

- Have students put all work for the day in their folders.
- Remind the students that they will fill in the transfer chart again next time.
- Remind students of **POW + WWW, What=2, How=2** test again next time.

Lesson 4

Lesson Overview

The students and teacher will collaboratively write a story using **POW + WWW, What=2, How=2**. The teacher will need to provide the support needed to insure that all students are successful in writing a story that has all 7 parts. The teacher should reinforce the students' use of self-instructions, good word choice, a story that makes sense, and "million dollar" words.

Student Objectives

The students will write **POW + WWW, What=2, How=2** from memory and be able to state what each part stands for. The students will collaboratively write a story that has 7 story parts.

Materials

Mnemonic chart, **WWW** graphic organizer, paper, pencils, lined paper, student folders, boy on an alligator practice picture, self-instructions sheets, students' graph

Set the Context for Student Learning

Test to see if the students remember **POW + WWW, What=2, How=2**. Do it out loud to save time. It is essential that each student memorize these. If students are having trouble with this, spend a few minutes practicing it. Tell the students you will test them on it each day to make sure they have it.

Record and review transfer.

Develop the Strategy and Self-Regulation

Step One - Collaborative Writing.

- Support It. Give students a blank graphic organizer and ask them to take out their self-statements list. Put out the boy on the alligator practice picture. This time let the students lead as much as possible, but prompt and help as much as needed. Students can share and use the same ideas, but each student should write their own story using their own notes Go through each of the following processes:
 1. Say, "Remember that the first letter in **POW** is **P** - PICK my IDEA." Refer students to their self-statements for creativity or thinking free. Help each student get an idea.

2. Say, “The second letter in **POW** is **O** - ORGANIZE my NOTES. I will use my story parts reminder to help me. I will use this page to make my notes and organize my notes.” Review – “What should my goal be? I want to write a good story - a good story has all seven parts, makes sense, is fun for me to write and for others to read.” After students have generated notes for all the story parts, say – “Remember to look back at my notes and see if I can add more notes for my story parts” - help them actually do this. Remind them also to look for more ideas for good word choice or million dollar words - help them do this.

3. The last letter in **POW** is **W** - WRITE and SAY MORE. Encourage and remind them to start by saying “What is it I have to do here? I have to write a good story - a good story has all 7 parts and makes sense. I can write my story and think of more good ideas or million dollar words as I write.” Help students as much as they need to do this, but try to let them do as much as they can alone. Encourage them to use other self-statements of their choice while they write. If students do not finish writing today, they can continue at the next lesson.

Step Two – Graph Story Parts

- Have each student graph their story - Ask each student to determine- does their story have all 7 parts - then fill in graph. Reinforce them for reaching 7.

Wrap- Up

- Have each student put their work and charts in their folder.
- Remind the students that they will fill in the transfer chart again next time.
- Remind students of the POW + WWW, What=2, How=2 test again next time.

Lesson 5

Lesson Overview

Students will continue to review **POW + WWW, What=2, How=2** in this lesson. It is critical that the teacher provides each student the assistance needed to be successful - Support It. Students will be weaned off the graphic organizer and will begin to learn how to make their own notes. This is the last lesson for **POW + WWW**. It should be repeated until students can write independently the story part reminder notes and a story with all 7 parts.

Student Objectives

Students will write story parts reminder and state orally what each reminder part represents. Students will write notes for the **POW + WWW, What=2, How=2** strategies on a blank sheet of paper. Students will write a story that includes all 7 story parts.

Materials

Mnemonic chart, **WWW** graphic organizer, paper, pencils, lined paper, student folders, squirrel and boy with door practice pictures, self-instructions sheets, each student's graph

Set the Context for Student Learning

Test to see if the students remember **POW + WWW, What=2, How=2**. Do it out loud to save time. It is essential that each student memorize these. If students are having trouble with this, spend a few minutes practicing it. Tell the students you will test them on it each day to make sure they have it.

Record and review transfer.

If you feel students are not ready to move on to writing with scratch paper for notes instead of the graphic organizer page, repeat lesson 4 with other practice pictures and go on to this lesson when they are ready. You can repeat lesson 4 more than once.

Develop the Strategy and Self-Regulation

Step One - Wean Graphic Organizer

- Explain to the students that they won't usually have a story parts reminder page with them when they have to write stories, so they can make their own notes on blank paper. Show them how to write down the reminder at the top of the page:

POW

WWW, What = 2, How = 2

Then have them make a space on the paper for notes for each part.

- Support It. Ask students to get out their self-statements list. Put out the squirrel and boy with the door practice pictures. Each student can select one to write about. Let the students lead as much as possible, but prompt and help as much as needed. Students make notes on the paper they wrote the reminders on. Students can share ideas, but each student should write their own story using their own notes. Go through each of the following processes:

Step Three – Graph Progress

- Have each student read aloud and graph their story - Ask each student to determine- does their story have all 7 parts - then fill in graph. Reinforce them for reaching 7.

Wrap- Up

- Have each student put their work and charts in their folder.
- Remind the students that they will fill in the transfer chart again next time.
- If this lesson is to be repeated, remind of **POW + WWW, What=2, How=2** test again next time.

Evaluation

- Support It. Ask students to get out their self-statements list. Put out the squirrel and boy with the door practice pictures. Each student can select one to write about. Let the students lead as much as possible, but prompt and help as much as needed. Students make notes on the paper they wrote the reminders on. Students can share ideas, but each student should write their own story using their own notes. Go through each of the following processes:

Say, "Remember that the first letter in **POW** is P - Pick my Idea". Refer students to their self-statements for creativity or thinking free. Help each student get an idea.

Step Two – Collaborative Writing

Say, "The second letter in **POW** is O- ORGANIZE my NOTES. I will use my story parts reminder to help me. I will use this page to make my notes and organize my notes."

Review – "What should my goal be? I want to write a good story - a good story has all seven parts, makes sense, is fun for me to write and for others to read." After students have generated notes for all the story parts say – "Remember to look back at my notes and see if I can add more notes for my story parts" - help them actually do this. Remind them also to look for more ideas for good word choice or million dollar words - help them do this.

Say, "The last letter in **POW** is W - Write and Say More." Encourage and remind them to start by saying "What is it I have to do here? I have to write a good story - a good story has all 7 parts and makes sense. I can write my story and think of more good ideas or million dollar words as I write." Help students as much as they need to do this, but try to let them do as much as they can alone. If parts can be improved, or better word choice can be used, do make suggestions. Encourage them to use other self-statements of their choice while they write.

Lesson 6

- Say, “The second letter in **POW** is O- ORGANIZE my NOTES. I will use my story parts reminder to help me. **I will use this page to make my notes and organize my notes.** Review - what should my goal be? I want to write a good story - a good story has all seven parts, makes sense, and is fun for me to write and for others to read. After students have generated notes for all the story parts say – “Remember to look back at my notes and see if I can add more notes for my story parts” - help them actually do this if necessary. Remind them also to look for more ideas for good word choice or million dollar words - help them do this if necessary.
- Say, “The last letter in **POW** is W - Write and Say More.” Encourage and remind them to start by saying “What is it I have to do here? I have to write a good story - a good story has all 7 parts and makes sense.” I can write my story and think of more good ideas or million dollar words as I write. Help students as much as they need to do this, but try to let them do as much as they can alone. Encourage them to use other self-statements of their choice while they write.

Lesson Overview

This is a repeat of Lesson 5 with a story starter. Students will be given the opportunity to practice transferring the strategy.

Student Objectives

Students will write the story part reminder and state orally what each reminder part represents. Students will write notes for the **POW & WWW, What=2 and How=2** strategies on a blank sheet of paper. Students will transfer the strategy to a written story prompt.

Materials

Mnemonic chart, paper, pencils, lined paper, student folders, story starters: *Rock & Cassie*, self-instructions sheets, student graphs

Set the Context for Student Learning

- Test to see if the students remember **POW** and the **story parts reminder: do it out loud** to save time. It is essential that each student has memorized the strategy.
- Record and review transfer

Develop the Strategy and Self-Regulation

Step One - Review Student Written Notes

- Remind the students that they won't usually have a story parts reminder page with them when they have to write stories, so they can make their own notes on blank paper. If needed, help them how write down the reminder at the top of the page.

Step Two – Collaborative Writing/Support It

- Ask students to get out their self-statements list. Put out the story starters: Rock & Cassie the dog. Discuss - how is this different? Say, "What can we transfer - yes, **POW + WWW** still works!"
- This time, students should do as much as possible independently - help only if needed. Students make notes on the paper they filled in. Students should go through each of the following processes - each student can write their own story using their own notes.
- Say, "Remember that the first letter in **POW** is P - Pick my Idea". Refer students to their self-statements for creativity or thinking free.

Step Three – Graph Performance

- Have each student read aloud and then graph their story - Ask each student to determine- does their story have all 7 parts - then fill in graph. Reinforce them for reaching 7.

Wrap- Up

- Have each student put their work and charts in their folder.
- Remind of POW and story parts reminder **test** again next time.
- Remind them that they will fill in the **transfer** chart again next time.

Evaluation

Repeat this lesson if students are not able to transfer the strategy independently.

POW + WWW
Albert The Fish

On a warm, sunny day two years ago
(When), there was a big gray fish named Albert
(Who). He lived in a big icy pond near the edge
of town **(Where)**. Albert was swimming
around the pond when he spotted a big juicy
worm on top of the water. Albert knew how
good worms tasted and wanted to eat this
one for dinner **(What He Wanted To Do)**. So
he swam very close to the worm and bit into
him. Suddenly, Albert was pulled through the
water into a boat (What Happened). He had
been caught by a fisherman **(Ending)**.
Albert felt sad **(Feelings)** and wished he
had been more careful.

OW + WWW The Sly Fox

Once upon a time **(When)**, a sly fox **(Who)** lived in a den in the forest **(Where)**. Every day the fox looked for food. He often wished for something different to eat **(What He Wants)**. He thought of rats and bugs he usually ate. Somewhere in the forest there had to be something more interesting to eat.

Suddenly, the fox saw a robin up in a tree eating just what he wanted – a piece of cheese **(What he Wants)**. The fox began to climb the tree. Just as he was getting close, the bird flew to another tree. The fox's mouth was watering as he started up at the cheese. He did not want to eat a rat, when he could have cheese. "That bird will fly away again if I try climbing the tree!" he thought, "But I have to have that cheese."

Then the fox decided to try to trick the robin into giving up the cheese. "Mrs. Robin, " say's the fox, "I have heard that your voice is the best in the forest. I would love to hear one of your songs for myself." The proud robin lifted her head to sing, but when she opened her mouth the piece of cheese fell to the ground. The fox laughed as he looked up at the bird **(What Happened)**. He was glad that it had been so easy to fool the robin **(Feelings)**.

So the fox ate the cheese, while the robin went hungry. Then the fox went on his way looking for dessert **(Ending)**. He was proud of himself for being smarter then the robin **(Feelings)**.

POW + WWW

The Tiger's Whiskers

A long time ago **(When)**, there was a woman who lived with her son **(Who)** in the forest **(Where)**. One day, her son got very sick. The woman was very sad **(Feelings)** and wanted her son to get well **(What She Wanted to Happen)**. She tried everything she could think of, but nothing worked. At last she remembered that medicine made from a tiger's whisker would help him get well. So the woman set out to get a tiger's whisker. She went to a tiger's cave and put food in front of the cave and sang soft music. The tiger came out, ate the food, and thanked the woman for the music and the food. The woman quickly cut off one of his whiskers and ran home **(What Happened)**. The woman's son got well **(Ending)** and the woman was very happy **(Feeling)**.

POW

Pick my Idea

Organize my Notes

Write and Say More



W-W-W What=2 How=2

Who is the main character?

When does the story take place?

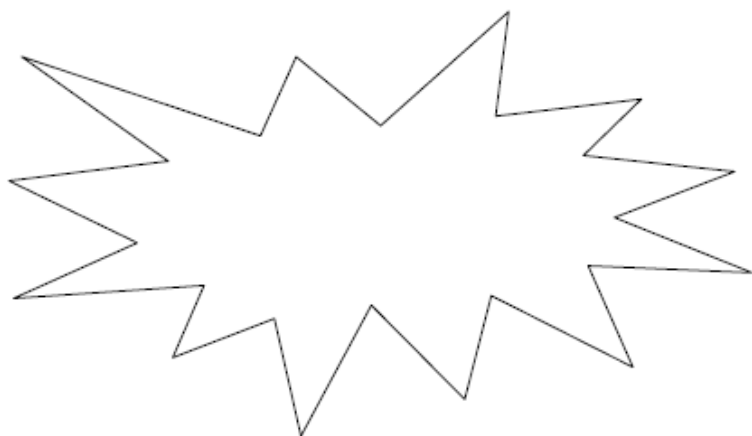
Where does the story take place?

What does the main character do or want to do; what do other characters do?

What happens then? What happens with other characters?

How does the story end?

How does the main character feel; how do other characters feel



I Transferred My Strategy!

Appendix E

CHILDREN'S INTERVENTION RATING PROFILE

We are interested in learning your ideas about the program that you are now finishing. Below are some sentences. You may or may not agree with the sentences. For each one, please circle the number that describes how much you agree or disagree with the statement. Use the following guide:

- 1 = I agree very much
- 2 = I sort of agree
- 3 = I don't agree or disagree
- 4 = I sort of disagree
- 5 = I disagree very much

1. The writing program was fair.	1	2	3	4	5
2. The tutor was too harsh (mean).	1	2	3	4	5
3. The writing program might cause problems with my friends.	1	2	3	4	5
4. There are better ways to handle writing problems.	1	2	3	4	5
5. The writing program would be good for other children.	1	2	3	4	5
6. I like the writing program used to handle my writing problem.	1	2	3	4	5
7. The writing program would help other	1	2	3	4	5