

SELF-REGULATED STRATEGY DEVELOPMENT WRITING INSTRUCTION FOR
ADOLESCENTS WITH AUTISM SPECTRUM DISORDER

by

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(Under the Direction of David L. Gast)

ABSTRACT

Although many individuals with autism spectrum disorder (ASD) have cognitive ability at or above the average range, they characteristically have difficulty with written expression in terms of quality and quantity. Coupled with low motivation to persist in writing tasks outside of their area of interest and deficits in self-regulation, poor social perspective-taking hinders their ability to be proficient at writing. As these individuals approach adulthood, effective communication and written expression becomes more critical to positive post-school outcomes. In this study, the effectiveness of Self-Regulated Strategy Development with six adolescents, four of which with ASD was evaluated. Using the SRSD instructional model, Statement PIE (Proof, Information, Example) was the strategy used for expository essay writing and the STOP & DARE (Suspend your judgment, Take a side, Organize your notes, Plan more as your write & Develop your topic paragraph, Add support, Reject the other side, End with a conclusion) strategy was used to support persuasive essay writing. In addition, the researcher imbedded a social perspective-taking strategy within the SRSD instruction to support students' attention to audience needs. Results indicated an increase in the number of functional elements after instruction. Data on essay quality, length, and duration of planning and writing were also reported. Maintenance and

generalization of skills was evaluated. Students and the special education teacher found the goals, procedures, and outcomes socially valid. Limitations and suggestions for future research are discussed.

INDEX WORDS: Autism, disability, writing instruction, written expression, self-regulation, SRSD, perspective-taking, theory of mind, academics

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DEDICATION

To my family, who has supported me for the past three years as I pursued this dream. The support, encouragement, and love you have shown me during this process have meant more than you will ever know. To my dad who reminded me “no one ever said anything worth working for was going to be easy.” To my mom who reminded me not to forget the important things in life. And to my sister who jumped right in the boat with me! To Warren who always knew what to say to drive me to hurry and get it done. But most of all, I dedicate this to my son, C.J., who was my number one supporter. I dedicate this to you for the sacrifices you made, for working alongside of me, and even joining in a few times. I love you all.

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CHAPTER 1

INTRODUCTION

Background

Writing is an essential skill for both adolescents and adults. Proficient writing is critical for success in schools, places of work, and in personal lives. In school, writing supports learning. It is expected across all content areas not only for evidence of learning, but as an avenue to refine knowledge by developing deeper understanding, critical thinking, and application of academic material. In addition, as students approach the end of public education, they must be able to use written language as a means to reach a specified audience, explain, compare, persuade, and express opinions. These higher order writing skills are required for high-stakes tests such as high school graduation tests and college entrance exams. Within the business community, weak employee writing ability is a growing concern. Recognizing the critical need for public awareness and funding for writing initiatives, the National Commission on Writing (2002) was founded to keep national attention on the teaching and learning of writing. The National Commission on Writing reports that a majority of employers indicate that writing is critical for obtaining a job and 30% of employers require on-the-job-writing. These include writing technical reports, memos, emails, and presentations. Even beyond the scope of school and work, writing is a life-long skill providing an outlet for documentation, communication, and self-reflection that contributes to an efficient and fulfilling life.

The National Assessment of Educational Progress (NAEP; Salahu-Din, Persky, & Miller, 2008) is a government program created to evaluate the academic progress and achievement of a

nationally representative sample of adolescents (eighth- and twelfth-graders). In 2007, a sample of more than 165,000 adolescents responded to two out of 20 writing tasks to measure writing skills by requiring them to write stories or essays to a variety of audiences. Although small but steady growth has been reported since 1998, the results of the 2007 assessment indicate that only one-third of the nation's eighth-graders were performing at the proficient or advanced level.

Proficient writing for eighth graders is defined as:

Students performing at the *Proficient* level should be able to produce an effective response within the time allowed that shows an understanding of both the writing task they have been assigned and the audience they are expected to address. Their writing should be organized, making use of techniques such as sequencing or a clearly marked beginning and ending, and it should make use of details and some elaboration to support and develop the main idea of the piece. Their writing should include precise language and some variety in sentence structure, and it may show analytical, evaluative, or creative thinking. The grammar, spelling, punctuation, and capitalization in the work should be accurate enough to communicate to a reader; there may be some errors, but these should not get in the way of meaning.

(Salahu-Din et al., p. 29)

Even more disconcerting is that by twelfth-grade, NAEP (Salahu-Dinet et al.) reported only 25% of the students are at or above proficient level of writing. This is a growing concern within the education and business communities as it is clear that a large number of adolescents need intervention in writing skills.

In addition to the general concern of adolescent writing ability, students with a disability were found to have even more significant impairments in writing skills, with an average NAEP score significantly below that of the general population. Even with appropriate accommodations, only 6% of students with a an Individualized Education Program (IEP) for learning disability (LD) or emotional and behavioral disturbances (EBD) eligibility, scored at proficient or better on the NAEP report (Salahu-Din et al. 2008). These struggling writers are at a particular

disadvantage compared to their more proficient peers in a competitive world. Students with learning difficulties have particular difficulties handling writing demands including information retrieval, organizing thoughts, and producing writing, with considerations of spelling and grammar conventions taxing the process. Students with ASD have also been noted as having specific challenges in terms of written expression. Although students with high-functioning ASD, a group which also includes Asperger syndrome, have average to above average cognitive ability (Ozonoff & Rogers, 2003), they characteristically have difficulty producing written products in relation to both poor quality and quantity (Myles et al., 2003). Concluding that students with ASD also find the process of writing taxing, Myles and colleagues recommend direct instruction on concepts of writing, teaching elaboration, as well as inclusion of a motivational component. There continues to be a need for information on approaches to improving classroom instruction for individuals with ASD that struggle with writing.

Conceptual Underpinnings for the Study

Writing instruction research. Before the 1980's, most writing assessment involved analysis of a product. Instructors provided students with exemplar models to follow, perhaps some time to practice, and a great deal of red markings as feedback. A movement from this approach toward a process-oriented model of writing instruction began after a seminal meta-analysis of experimental research on teaching composition (Hillocks, 1984). Researchers began to understand that underlying the written product was a number of processes connecting writing, learning, and thinking (Hayes & Flower, 1986). Hillocks reported that teaching sentence level structure and grammar was not enough, and even less effective was memorizing parts of speech out of the context of writing. His review of writing instruction indicated that activities for planning and organization were more effective. The contemporary belief is that instruction and

support of planning, developing purposeful text structure, and revising will address the multiple phases of the writing process. In addition, researchers have found that providing this same strategic instruction to individuals that struggle with writing due to low achievement or mild disabilities (e.g., SLD, EBD, attention deficit/hyperactivity disorder, and ASD) effects considerable improvements in writing quality (Baker, Chard, Ketterlin-Geller, Apichatabutra, & Doabler, 2009; Gerstin & Baker, 2001; Graham & Perin, 2007).

The Self-Regulated Strategy Development (SRSD) model of instruction involves six basic stages of instruction. First, to develop and activate the student's background knowledge, the teacher and students discuss purposes of writing and the usefulness of a strategy when writing. The teacher and students proceed by discussing student's present level of writing performance. After understanding the purpose, benefit, and need of the strategy, students are asked to make a commitment to learning and using the strategy. During the third phase of the strategy instruction, the teacher models the strategy and self-instruction. The teacher and students collaborate on how to adapt the strategy to fit each student's needs. The next phase involves memorization of the strategy, mnemonic, and personal self-statements. Then, opportunities to practice using the SRSD components are provided under the direct support and supervision of the instructor. Finally, students independently use the strategy until mastery criteria is met.

The work of experts in the field of special education emphasizes support and systematic instruction rooted in Vygotsky's (1978) socio-cultural theory of cognitive development. Effective instruction provides scaffolds between the point of a child's developmental level and what is required to master a skill also called Zone of Proximal Development (ZPD). When providing writing instruction to students with various disabilities, teachers need to be responsive to needs. For individuals with ASD, not only is awareness of the defining characteristics of the

disorder and how they manifest necessary for designing instruction, but also honing in on pivotal behaviors (e.g., self-regulation and motivation) that affect a wide range of skills will increase generalization (Koegel, Koegel, & McNeerney, 2001).

Self-regulation. *Self-regulation*, rooted in Bandura's Social Cognitive Learning Theory (1977), includes a number of behaviors necessary for the process of goal attainment. These behaviors include goal setting, self-initiation, self-instruction, self-monitoring, self-evaluation, and self-reinforcement/punishment requiring intact executive functioning (i.e., actions directed at oneself to achieve self-regulation; Barkley, 2001). In terms of academics, self-regulation includes processes to activate organization, rehearsal, and coding information strategically thus promoting achievement and self-efficacy (Schunk & Zimmerman, 1997). Experienced writers develop goals sensitive to an audience, use knowledge of genre to organize content, attend to style, and continually evaluate their work in light of their goals (Graham, Schwartz, & MacArthur, 1993). For individuals who struggle with writing, far less planning and revising of compositions is seen because of poor self-regulation. SRSD includes a number of components that address self-regulation of writing. Under the social cognitive theory of self-regulation researchers have investigated two constructs, modeling and self-efficacy. Self-efficacy is a person's belief in their own ability to be successful in a task or meeting a goal (Bandura, 1986). Schunk and Zimmerman state that "By observing models, students may believe that they also can plan and manage time effectively, which creates a sense of self-efficacy for academic self-regulation and motivates students to engage in these activities" (p. 197). SRSD instructional procedures include a number of explicitly taught planning and revising strategies with an emphasis on modeling self-regulation of the strategy, task, and learner behavior to improve overall writing performance and accurate self-efficacy.

Theory of Mind. Effective expository and persuasive compositions require that the writer fully address the needs of the intended reader or “audience.” Baron-Cohen, Leslie, and Frith (1985) described the Theory of Mind (ToM), or contextual perspective-taking, as an ability to understand the difference between the intentions, beliefs, and motivations of oneself and of others. Individuals with ASD are identified as having delays in development of ToM and without sufficient perspective-taking, a person cannot adequately make inferences on the thoughts, emotions, or intentions of others (Carter, Davis, Lin, & Volkmar, 2005). The impact of delays in perspective-taking extends beyond socialization in school and the workplace. In fact, perspective-taking does impact academic performance (Mayes & Calhoun, 2003; Reitzel & Szatmari, 2003); specifically, poor perspective-taking impacts a writer’s ability to consider the audience in written tasks.

All compositions attempt to convince the reader to see the world through the writer’s eyes; however, persuasive writing is particularly inherent to considering audience perspectives because it is understood that the writer holds a different point of view than the readers and must attempt to change their minds. Writing is a social activity used to communicate with others; without taking the audience’s perspective, the writer will not be as effective. In other words, a writers’ consideration of audience is fundamental to convince the reader to continue reading (Wollman-Bonilla, 2001) and those who fail to use information about their readers to compose are less able to produce quality writing (Rubin and Looney, 1990; as cited in Gregg, 2009). Cognitive and linguistic processes that influence sense of audience include content, execution, perspective taking and differentiation of voice (Gregg). Therefore, individuals with ASD and other mild disabilities that affect ability to take others’ perspectives are at a particular

disadvantage and will require specific instruction to mediate consideration of audience while writing.

Motivation. In the 1970's, writing theory began to be understood in terms of cognitive processes, a paradigm shift from viewing writing as a product to writing as a process. This new cognitive theory on writing neglected motivational impacts. Early models of writing (Hayes & Flower, 1980) only included motivation in terms of “motivational cues” such as teacher approval or disapproval (as cited in Hidi & Boscolo, 2008). Over time, writing motivation research became a larger concern with future research on motivation in terms of self-efficacy and self-regulation under Bandura's Social Cognitive Theory of Learning. Self-efficacy theory includes cognitive, metacognitive, and affective pieces combined leading to implications of self-regulation. With that, the Hayes (1996) revised model of writing process theory included motivation as playing a more pivotal role in writing.

A second motivation to write is the idea of an audience. The ways that students interact with the environment and learn has factors connecting motivation, interest, and task value. Hidi and Boscolo (2008) define interest as a motivational and psychological state occurring “during interactions between persons and their environment, and is characterized by increasing attention, concentration, and affect” (p. 145). Interest in writing on a topic can be either situational or individual. For example, situational interest can occur with a current trend or event that evokes a sudden affective reaction, whereas individual interest is a long-lasting predisposition to attend to an idea or activity (Hidi & Boscolo). An audience presents an expectancy of receiving the composition and serves as a source of feedback creating this situational interest to motivate the writer (Magnifico, 2010). Research shows that although topic interest may energize writing, it is

not sufficient without topic knowledge. In other words, motivation to write may increase, but writing performance may not (Hidi & McLaren, 1991).

Why is motivation an issue? Nolan (2003) supports that, unlike readers, writers must be persistent in a task requiring them to generate the ideas instead of consume information (as cited in Hidi & Boscolo, 2008). Writing is a solitary activity performed without provisions of constant feedback. The two theories on motivation for writing remain, but research shows that self-efficacy is predictive of essay quality and strategy use. Students who feel more competent will persist in writing. Graham and Harris (1989) concluded that students need to accurately evaluate their ability to write in order to be motivated to make changes in a positive direction.

Zimmerman and Kitsontas's (1999) research contributions on motivation explain that students who learn from a model, and are subsequently able to perform based on that model, and increase motivation due to self-satisfaction from their own awareness of meeting or exceeding the model. SRSD is a model of instruction that includes each component of self-regulated learning that supports the self-efficacy and self-regulated theory of motivation. Teaching perspective-taking to increase awareness of audience, provides a more authentic writing task for students increasing interest to persist with the task. In addition to instruction on organizing ideas and including elaborations while also addressing motivation through self-regulatory behaviors as included in SRSD, students with ASD and other struggling writers may need specific instruction to consider perspectives of the audience.

Statement of the Problem

Qualitative impairments in social interaction, communication, and restricted interests and repetitive patterns of behavior are the hallmark deficits for Pervasive Developmental Disorders (PDDs) as defined by the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition,

text revision (DSM -IV, TR; American Psychiatric Association, 2000). Autistic disorder (AD), Asperger syndrome (AS), and Pervasive Developmental Disorder, Not Otherwise Specified (PDD-NOS) are the most common forms of what is also called ASD. In the past, behavioral and social needs were more “pressing” for individuals with ASD. With an increased focus on early intervention, positive behavior change is occurring earlier, putting students with mild impairments of ASD within reach of academic gains. Therefore, researchers are giving more attention to academic interventions and accommodations.

It is estimated that 67% of individuals with ASD have a specific learning disability in reading, written expression, and/or math (Aspy & Grossman, 2008; Mays & Calhoun, 2006). At the same time, 95% of people with ASD also demonstrate symptoms of ADHD (Sturm, Fernell, & Gillberg, 2004). Students with ASD that struggle with academics are not intentionally disorganized. Deficits in executive functioning (e.g., poor working memory, concentration, behavior inhibition, planning, initiation, performance monitoring, and self-regulation) are associated with ASD (Yerys, Hepburn, Pennington, & Rogers, 2007). Students with ASD presenting with executive dysfunction struggle in general education environments that are not supportive. Appropriate accommodations are imperative to creating successful participation in the mainstream environment.

In addition to cognitive differences and executive dysfunction, social skills are considered a major deficit for individuals with ASD and are pervasive across the life span, often determining outcomes for these individuals. As a whole, people with ASD are less likely to live independently, attend college successfully, or sustain a job. Research demonstrates that although perspective-taking (ToM) tasks can be taught to individuals with ASD, researchers have not consistently proven generalized use of skills in natural settings (Hadwin, Baron-Cohen, Howlin,

& Hill, 1997; Ozonoff & Miller, 1995). It is imperative that effective interventions which teach these individuals to accurately understand that others have thoughts and beliefs different from their own are utilized and that these individuals learn to apply this knowledge in real world contexts. Integrating a lesson on ToM into writing instruction would serve the dual purpose of teaching social skills while enhancing sense of audience within the writing process.

To be competitive in the job market and higher education, adolescents with ASD must be able to provide information or persuade others on their opinion in writing at a proficient level. Therefore, the need for effective strategies must be addressed. One such strategy is SRSD. The SRSD model of instruction is individualized, interactive, and criterion-based. In addition, this approach emphasizes self-regulation during the writing process helping students with SLD and ASD compensate for poor executive functioning. Successful expository and persuasive essays maintain sustained attention to the audience in the introduction, body, and conclusion. Even more importantly they fully address readers' concerns and/or counter arguments by appealing to logic and/or emotion. While evidence of SRSD model of writing instruction has been established for adolescents with SLD or those who do not have a disability but are struggling with writing, no such relationship has been confirmed within the adolescent ASD population. Since the SRSD model of instruction is reported to have flexibility to add components to address individual needs (Graham, 2006), instruction on understanding whom the audience is and how to consider their perspective could be infused into the strategy instruction to compensate for that particular difference seen in individuals with ASD. Still not enough is known about the impact of SRSD model of writing instruction with an additional perspective-taking component, on writing quality when executive function and ToM deficits are taken into account.

Purpose of the Study

One of the reasons why SRSD model has had such a powerful impact on the field of writing is that it provides a viable mechanism for accounting for individual differences in how writers compose. The SRSD model of instruction has been effective in improving the quality of writing for individuals that struggle with writing (Graham, 2006), but research is limited for adolescents required to write sophisticated essays, in particular, those with social skill deficits seen in ASD. Graham confirms that SRSD can be integrated with other forms of instruction to create a more effective program for writing instruction and encourages the testing of new strategies (Graham). Therefore, the purpose of this study is to evaluate the effects of SRSD model of writing strategy instruction that has a perspective-taking component on the quality and content of expository and persuasive essay writing by adolescents with ASD.

Research Questions

Four research questions will be addressed by the proposed study, focusing on the effectiveness of writing strategy instruction with imbedded perspective-taking lesson for adolescents with ASD. The research questions addressed are:

1. Will SRSD model of strategy instruction on expository essays increase overall completeness in terms of number of functional elements, quality, and length?
2. Will SRSD model of strategy instruction on persuasive essays increase overall completeness in terms of number of functional elements, quality, and length?
3. Will effects of SRSD model of strategy instruction on expository and persuasive essays maintain after instruction and generalize to a different teacher?
4. Will SRSD model of strategy instruction increase duration of planning and writing essays?

Summary

Based on theory grounded in Vygotsy's Zone of Proximal Development (1978), Bandura's Social Learning Theory (1977), and Baron-Cohen and Frith's Theory of Mind (1985), extended research of writing strategy instruction with emphasis on perspective taking for individuals with ASD and other disabilities is necessary. The underlying deficits that appear as a manifestation of ASD lead to difficulties with written expression in terms of generating and organizing ideas to meet the needs of the audience. The purpose of this investigation is to determine the effectiveness of the SRSD model of writing instruction on adolescents with ASD's essay content and quality. A multiple probe across dyads and strategies design will be used to evaluate the program's effectiveness. The instructional procedures and strategy mnemonics developed for this research project are considered evidence-based practice for struggling writers, but research for individuals with ASD is limited.

Definitions

Writing strategy instruction is a method to provide writers with a course of action, concrete guidelines, and tools for planning and writing, along with enhancing their understanding of the process (Graham & Harris, 2005). *Self-regulatory behaviors* are the thoughts, feelings and actions (e.g., self-instruction, self-observation, and self-reinforcement) that aid a person in reaching a specified goal (Schunk & Zimmerman, 1994). Self-regulation requires executive function skills. *Executive function* skills are adaptive responses to complex situations such as set-shifting, inhibition, self-monitoring and planning (Happe, Booth, Charlton, & Hughes, 2006). Specifically, *Self-regulated Strategy Development (SRSD)* is a model of strategy instruction which explicitly teaches planning strategies, process strategies, and self-regulation for both tasks and undesirable behaviors that impede writing (Harris, 2006). Strategy instruction is broken

down into three strategies (a) *writing process strategies*, strategies that can be applied broadly across genres that break down the steps of writing into planning, writing, revisions, (b) *planning strategies*, those that facilitate pre-writing to get ideas on paper, and (c) *text structure strategies*, genre specific strategies that provide a framework for composition and set specific product goals for students to meet through writing (Graham & Harris, 2005). A writing *genre* is a style of written expression (e.g., narrative, expository, or persuasive). *Expository writing* is a genre that requires a knowledge base and seeks to provide the reader with information and clarification assuming the audience has little knowledge of the topic. *Persuasive writing* is a genre that requires more complicated instruction including organization, knowledge, and thought. The goal of persuasive writing is to influence the reader to think about a particular topic in a certain way (Salahu-Din, Persky, & Miller, 2008, p. 44). These strategies usually include a *mnemonic* device, which is a learning technique aiding memory that often includes an acronym of the steps in the strategy.

Writing instructors use standard performance measures to assess written compositions. Based on the requirements of the writing strategy, number of functional elements were counted to determine strategy use. Number of *functional elements* is total number of common elements required by the strategy included in the response (Graham & Harris, 2005). These elements include *premises* (sentences related to the topic giving information only), *reasons* (statements supporting or defending the premise), *counter arguments* (statements identifying the opposing position; Page-Voth & Graham, 1999), *elaborations* (sentences that explain, provide examples, or support a reason or reject the counter argument), and *conclusions* (sentences that summarize or rephrase previous ideas in the essay or information ending the essay to entice or entertain the reader). Another measure includes *length*, or number of written words representing a spoken

word regardless of spelling. *Duration of planning* is the length of time between teachers providing materials and a writing prompt and students beginning to write a draft on paper provided. *Duration of writing* is length of time between students beginning to write a draft on paper provided to giving the final essay to the teacher. The most important aspect to consider when measuring change in writing ability is the evaluation of writing quality. Examiners measure *holistic quality* by taking their general impressions of overall quality of a written response and scoring it compared to low, medium and high quality anchor responses on a seven or 8-point scale. An alternative to holistic quality as a measure of writing performance, *analytic scoring* is a criterion referenced assessment where writing samples are compared against predetermined criterion or traits (Espin, Wiesenberger, & Benson, 2004).

CHAPTER 2

LITERATURE REVIEW

An extensive review of literature on perspective-taking, and writing was conducted to identify salient features of effective programs for adolescents with ASD. In a seminal meta-analysis of experimental treatments on teaching composition, Hillocks (1984) identified factors of writing instruction, models of instruction and types of content or activity that most effectively increased writing quality. Examining research for the most effective mode of instruction (e.g., teacher delivery and student activity) indicated that *presentational mode* (i.e., teacher lecture, study of models, and feedback on papers) was three times more common than any other study just as it is most common in schools (Hillocks, 1984). However, *environmental mode* of instruction (i.e., a series of tasks to increase precise writing, small group engagement, and engaging materials to focus on specific aspects of writing) resulted in the largest ES at .75, a moderate to high effect. A second goal of this meta-analysis was to make a comparison of instruction type (i.e., types of content or activities). ESs for each type of instruction were averaged and compared indicating that grammar instruction resulted in negative effects (-.29) while learning mechanics of writing, studying models of writing, and free writing had only little effect on quality of writing (.27, .22, and .16 ESs respectively). On the other hand, inquiry methods (i.e., providing a strategy to transform information or data into writing) was the most effective with an ES of .56 followed by instruction on sentence combining and scales (i.e., students evaluating other's samples on a scale while receiving feedback on their own writing) with ESs of .35 and .36 respectively. Hillocks reported that in the classroom, students were

“passive recipients” of advice, rules, and models for good writing (p. 159). This is the least effective method of writing instruction. For these reasons, he felt that disseminating information from this meta-analysis was warranted.

Since Hillocks’ seminal meta-analysis (1984), two meta-analyses on writing instruction (Gerstin & Baker, 2001; Graham & Perin, 2007) have been published to disseminate information on writing instruction provided to struggling students. Gerstin and Baker evaluated research on expository and narrative writing instruction provided to students with a learning disability. The primary features evaluated across 13 studies were text structure and writing process. The ESs calculated suggest that instructional interventions in writing produce moderate to strong effects. After Hillocks (1984) published his seminal meta-analysis, writing instruction moved from conventions of writing to the process of writing. Gerstin and Baker found that the three major factors in effective writing instruction were explicit teaching of the conventions of a writing genre, adherence to a basic framework for the writing process, and provision for feedback. Two programs identified as writing curricula that address each of those components are SRSD (Graham & Harris, 1989) and Cognitive Strategy Instruction in Writing (CSIW; Englert et al., 1991). The authors concluded that increasing interest in approaches, including planning, text structure, and revising, for individuals with a disability was due to school accountability for students with a disability (p. 267).

Graham and Perin (2007) conducted a second meta-analysis of writing instruction, this time looking at studies including only adolescent students. In 2003, The National Commission on Writing reported the critical need for improved writing instruction for adolescents and adults to be more competitive in the work force. The goal of Graham and Perin’s meta-analysis was to identify the best instructional practices to support improvements in writing quality of

adolescents. General results indicated that across the 12 studies included, the publishing journal, student grade, genre, and quality of study did not account for variability in ES. Comparable to results found by Hillocks (1984), grammar instruction continued have small negative impacts on writing quality. Average ESs for instruction on pre-writing was small but positive and inquiry methods had a small to moderate effect on writing quality. Most notably, SRSD model of instruction had an average ES (1.14) greater than all other instruction types combined, confirming previous results on meta-analyses specific to strategy instruction. In addition, it was found that SRSD was effective in improving writing quality for students with a disability. These authors emphasized that the categories of writing instruction are not necessarily to be taught in isolation, but combined in programs as comprehensive writing instruction.

Interest in strategy instruction to increase writing quality for struggling writers, including those with a disability has grown over the past 10 years. Graham (2006) conducted a meta-analysis to examine the effectiveness of strategy instruction in terms of its effects on posttest, maintenance, and generalization measures of writing products. In addition, the relationship between study features and outcomes were investigated (p. 188). It was determined that student type, grade, genre, and process (i.e., planning strategies versus revising) had no effect on writing quality after intervention. Most interesting, the SRSD model of instruction had double the effect on writing quality than general strategy instruction within the group design studies and equivalent effects within single-subject research design studies. Moreover, for both group design and single-subject design studies, effects maintained and generalized across genre and setting with very high ESs.

Although Myles et al. (2003) identified wide ranging writing deficits experienced in students with ASD in comparison to students without a disability, little is known about the best

intervention approach for these individuals. Most research, in terms of writing instruction for individuals with ASD, addresses writing at basic levels. Research by Rousseau, Krantz, Poulson, Kitson, and McClannahan (1994) used sentence combining to increase adjective use by elementary students with ASD. Basil and Reyes (2003) and Yamamoto and Miya (1999) used computer software to present lessons on sentence combining. These researchers reported positive effects that generalized to pencil and paper. Three empirical studies have been published evaluating the effects of writing instruction on quality of individuals with ASD writing composition. Table 1 provides information on the pertinent descriptors of each study.

Asaro-Saddler and Saddler (2010) evaluated a story writing strategy using SRSD model of instruction for three male elementary students with ASD and a written language disorder. Students were given strategies to organize the writing process and the text structure of a story. After strategy instructions, the students increased number of elements, length, and holistic quality of stories. In addition, the skills were maintained after four weeks and generalized to a narrative writing task. The limited intra-subject and systematic replication of these effects limits the validity of research. It is imperative that future research include larger numbers of participants while also addressing maintenance and generalization.

Delano (2007a, 2007b) published two studies providing evidence of possible effectiveness of SRSD as an intervention for individuals with ASD. Delano (2007a) examined SRSD model of instruction for vocabulary development of a 12 year-old with ASD. A multiple baseline across responses design was used to evaluate the effects of SRSD vocabulary strategy on number of action words, describing words, and revisions in story writing. During baseline probe sessions, the student's stories were considered short and simple. Upon implementation of strategy for each response, direct increases in level and trend of including action words,

adjectives, and revisions. Delano (2007b) used only a two components of SRSD, self-monitoring and self-graphing along with a graphic organizer for the mnemonic TREE (Topic, Reason, Explain, and Ending) within a video self-modeling intervention for three adolescents with ASD. A multiple baseline across responses design was used to assess the intervention's effectiveness in increasing number of words and functional elements in essays. Each of the three participants increased number of words written after video self-modeling and graphing number of words intervention phase. The number of functional elements remained low and stable. After the second phase of intervention, video modeling the use of TREE strategy, number of functional elements increased. The researchers took maintenance data on one of the three participants indicating decreased writing quality at the 3-month probe, however the data still exceeded baseline. Delano suggested that future studies examine the use of SRSD for individuals with ASD without video self-modeling. Limited intra-subject and inter-subject replication is problematic for this study. Only two tiers were included in the multiple probe research design. The intervention was then replicated across individuals with ASD, but not in a staggered fashion. Only two tiers in the multiple probe format makes evidence against confounding variables difficult to prove.

The effectiveness of previously mentioned strategies to teach writing composition to individuals with ASD is encouraging. However, experts in the field of ASD have identified deficits in social skills as a core characteristic of the disorder (Kanner, 1943; Ozonoff & Miller, 1995; Rogers, 2000; Witwer & Lecavalier, 2008). This deficit manifests as an inability to use contextual or social perspective-taking as a means of engaging in the social world, affecting ability to adapt writing flexibility to different contexts and audiences. In their seminal research, Baron-Cohen, Leslie, and Frith (1985) described the theory of mind (ToM), or contextual

perspective-taking, as an ability to understand the difference between the intentions, beliefs, and motivations of oneself and of others. Without sufficient perspective-taking, a person cannot adequately make inferences on the thoughts, emotions, or intentions of others (Carter, Davis, Lin, & Volkmar, 2005). Perspective-taking can impact academic performance in reading (Reitzel & Szatmari, 2003), mathematics (Reitzel & Szatmari), and writing (Mayes & Calhoun, 2003). It is possible that poor perspective-taking affects the writer's ability to consider the audience in written tasks. In addition, teacher consideration of motivation has special significance for adolescents with ASD (Prior, 2003). Compounding the problem of social skills and poor perspective-taking, a second core characteristic of ASD is having restricted interest, and these special interests and obsessions are the most motivating factor in a student with ASD's life. Although these fascinations engage the student and provide enjoyment, during school and instruction, the interest interferes with learning due to problems with attention and poor motivation to work on unrelated tasks. Special consideration of motivation to write must be considered for individuals with ASD to persist in learning to compose and persist in the task.

The purpose of this review was to identify and summarize what is known about perspective-taking for individuals with ASD, expository and persuasive writing instruction as well as motivation to write; "what factors qualify or limit the findings; and what questions are either answered or unasked" (Wolery & Lane, 2010, p. 58). Answers to these questions will provide support for or against research on writing instruction on expository and persuasive writing including instruction on perspective-taking to reach a specified audience for individuals with ASD. This literature review is organized around student variables, procedural factors, methodological adequacy, and results.

Methods

Perspective-taking. In order to identify empirical studies investigating social perspective-taking interventions for individuals with ASD published over the last 10 years, the author used three types of search methods (Wolery & Lane, 2010). First, an electronic search was conducted through ERIC, Academic Search Complete, Science Direct, and PsycINFO using the advanced search method with key terms “autis*” and “perspective”, “social perspective-taking”, “theory of mind”, and “social cognition”. The text was searched in each article identified with related keywords. Second, a hand search of common journals publishing articles describing perspective-taking interventions for the population of interest was conducted. These included the *Journal of Autism and Developmental Disorders*, *Focus on Autism and Developmental Disorders*, and *Education and Training in Autism and Developmental Disabilities*. The third method for searching literature was an ancestral search of references cited in articles chosen through the electronic and hand search. Reviewed studies met the following inclusion criteria: (a) at least one participant in the study was identified as having a pervasive developmental disorder (PDD) including AD, AS, or pervasive developmental disorder – not otherwise specified (PDD-NOS) with IQ > 70; (b) intervention included a dependent variable evaluating social perspective-taking; and (c) studies were published in a peer-reviewed journal between January 2000 and May 2010.

Writing Instruction. To identify studies investigating writing instruction on expository and persuasive writing, as well as general writing instruction for individuals with ASD, the author used five types of search methods (Wolery & Lane, 2010). First, an electronic search was conducted through EBSCO, ERIC, Academic Search Complete, Science Direct, and PsycINFO using the advanced search method with key terms “writing” and “autism”, “asperger”,

“instruction”, “strategy instruction”, “strategy”, “intervention”, and “SRSD”. The text was searched in each article identified with related keywords. Second, a hand search of common journals publishing articles describing interventions for the population of interest was conducted. These included *Learning Disability Quarterly*; *Learning Disability Research and Practice*; *Intervention in School*; *Journal of Educational Psychology*; *Journal of Educational Research and Clinic*; and *Exceptional Children*. The third method for searching literature was an ancestral search of references cited in articles chosen through the electronic and hand search. Once relevant research studies were identified, a list of authors that were published a number of times was created. Electronic searches, web-based search engine searches, and curriculum vita searches were conducted for additional relevant articles. The final method was to contact authors that are actively conducting research on writing instruction requesting *in press* articles or articles not on the current reference list. The results of this search were narrowed to the inclusion criteria of: (a) studies were published in a peer-reviewed journal; (b) a quantitative experimental research design was used to evaluate the intervention; (c) the intervention included writing instruction on expository or persuasive writing; (d) the study included a dependent variable that directly measured writing quality; (e) the intervention targeted struggling writers or individuals with an identified disability.

Results

Social Perspective-taking Skills. Predictions about others’ thoughts, opinions, and behaviors are required for academic writing, daily interactions, and inclusion in society (David et al., 2010). For individuals with ASD, social functioning deficits are not only a core characteristic, but also are the defining features of the disorder, with the most important intervention outcomes (Rogers, 2000). The search of empirical research targeting social

perspective-taking instruction for individuals with ASD yielded 10 studies in four different journals: *Journal of Applied Behavior Analysis* (1), *Journal of Autism and Developmental Disorders* (7), *Journal of Intellectual and Developmental Disability* (1), and *Journal of Positive Behavioral Interventions* (1). Table 2 summarizes pertinent descriptors of each study.

Procedural factors. Within the perspective-taking intervention research, researchers used three general methods: systematic, group work, and technology-based instruction. Three studies evaluated the effects of systematic instruction, or ToM training, on social perspective-taking (Chin & Bernard-Opitz, 2000; Feng, Lo, Tsai, & Cartledge, 2008; Fisher & Happe, 2005). Four studies used group work intervention including practice in listening skills, instruction on perspective-taking, conversation, and cooperative skills (Bauminger et al., 2007; Mackay et al., 2007; Solomon et al., 2004; Turner-Brown et al., 2008). Three studies used technology including computer software (Bernard-Opitz et al., 2001) and video modeling (Charlop-Christy & Daneshvar, 2003; LeBlanc et al., 2003), which are two viable technological avenues to instruct students on perspective-taking.

Results. Each study in this review provided evidence of positive effects on the primary dependent variable of interest. However, evidence of generalization to natural environments was limited. Effects of generalization of perspective-taking skills were evaluated only in Feng, Lo, Tsai, and Cartledge (2008). They reported that training procedures including an introduction of the skill with an animated example presented on a laptop computer, question and answer by the trainer and student, followed by role-play and summary of the skill generalized to lunch and recess. Fisher & Happe (2005) provided systematic instruction on ToM false-belief tasks. Generalization evaluated in terms of parent reports indicated that students did not show changes in general social skills. In contrast, Mackay et al. (2007) used a group work intervention

instructing students on social interaction and understanding. Social validity reports did indicate observed changes in student social perspective-taking skills. Inconsistent generalization outcomes on teaching false-belief tasks provide a foundation for direct instruction on skills to apply in context. There is a small body of evidence in the writing instruction literature showing that students can increase writing achievement when provided an authentic audience (Cohen & Riel, 1989; Purcell-Gates, Duke, & Martineau, 2007). However, at an even more basic level, students with ASD need to demonstrate ToM to understand that even in an authentic writing situation others have different mental states and respond to topics differently based on those differences.

Conclusions. According to this review of current literature, social perspective-taking can be directly taught through discrete ToM task training, but interventions based on specific social skills (e. g., conversation skills, friendship skills, etc.) do not affect the ToM of an individual with ASD or increase social perspective-taking. Research demonstrates that although ToM tasks can be taught to individuals with ASD, researchers have not consistently proven generalized use of skills in natural settings (Hadwin et al., 1997; Ozonoff & Miller, 1995). Some researchers report generalization in terms of passing “untrained tests” which is a form of stimulus generalization, but true generalization of social perspective-taking results in increased social interactions and improved comprehension in naturalized settings. Students need to be able to consider thoughts and intents of others to understand motives and predict behavior of others. Students can learn to apply rules and principles to figure out other’s perspectives, but they also need to develop the true perspective-taking ability (as opposed to passing false-belief tasks) in order to accurately apply such skills in the varied contexts of life. Relevant to essay writing, ToM increases a writer’s sense of audience, aids in idea generation and organization, as well as

provides motivation for one to write. Direct instruction of a strategy to organize knowledge of the intended audience seems more likely to generalize to improved writing than teaching false-belief tasks to improve general perspective-taking skills.

Writing Instruction. This search resulted in 18 studies evaluating instruction on expository essay quality and 17 studies evaluating instruction on persuasive essay quality. Two studies evaluated instruction on both expository and persuasive essay writing (Chalk, Hagan-Burke, & Burke, 2005; Wong, Butler, Ficzero, & Kuperis, 1997). This totaled to be 33 empirical articles from 14 different journals: *American Educational Research Journal* (1); *Assessment for Effective Intervention* (1); *Behavioral Disorders* (2); *Exceptional Children* (8); *Focus on Autism and Other Developmental Disabilities* (1); *Journal of Educational Psychology* (3); *Journal of Educational Research* (1); *Journal of Learning Disabilities* (3); *Learning Disabilities Research & Practice* (2); *Learning Disabilities Research and Practice* (1); *Learning Disability Quarterly* (6); *Reading & Writing* (2); *Reading Research Quarterly* (1); *Remedial and Special Education* (1). A summary of descriptors for each expository study is provided in Table 3 and persuasive studies are provided in Table 4.

Student variables. Of the 1,335 students included in this review, 974 students took part in studies designed to increase expository writing and 361 students were involved in studies designed to increase persuasive writing. Student grade level ranged from 2nd grade through post-secondary. Fifty-five percent (n = 18) of the studies used students in middle school, 33% (n = 11) of the studies were implemented in elementary school, 9% (n = 3) were set in high school (Chalk et al., 2005; Delano, 2007a; Jacobson & Reid, 2010), and one study evaluated writing instruction for adults ages 40 – 44 studying to take the general equivalency diploma (GED) exam (MacArthur & Lembo, 2009). All but two studies worked with traditional public schools to

improve student performance in writing. Mason, Kubina, Valasa, & Cramer, (2010) evaluated writing instruction at an alternative school for individuals with severe emotional and behavioral challenges. Since MacArthur and Lembo were instructing adults in preparation for a GED, they implemented the intervention in a community building.

The primary population of interest for this review was students with an identified disability. Twenty-five studies (76%) included solely students with special education eligibility. Six more studies combined students with a disability with those not identified with a disability. Learning disability was the primary category of disability identified by authors (n = 20). Students with EBD were included in five studies (Konrad & Test, 2007; Lienemann & Reid, 2008; Mason & Shriner, 2008; Mason et al., 2010; Mastropieri et al., 2009). Students with Attention-deficit/Hyperactivity Disorder (ADHD) were included in three studies (De La Paz, 2001a; Jacobson & Reid, 2010; Lienemann & Reid, 2008). Six studies incorporated a variety of student with mild disabilities (e.g., mild intellectual disability, other health impairment, etc.) in the writing intervention. Participants in Delano (2007a) each had a diagnosis of Asperger syndrome (AS). MacArthur & Lembo did not elaborate on the eligibility for special education services since the students were adults preparing for the GED exam. Page-Voth and Graham (1999) as well as Taylor and Beach (1984) identified students as struggling writers without specifying any category of disability.

Procedural factors. Effective writing instruction provides struggling writers with a course of action, concrete guidelines, and tools for planning and writing to enhance their understanding of the process (Graham & Harris, 2005). Over the past 20 to 30 years, the process model of writing instruction has been developed and researched extensively. For example, SRSD model of strategy instruction not only explicitly presents planning strategies, but also combines

self-regulation for both tasks and undesirable behaviors that impede writing (Harris & Graham, 1996). Just over half ($n = 17$) studies identified SRSD as the model for instruction delivery.

Cognitive Strategy Instruction in Writing (CSIW) is guided by social cultural theory emphasizing thinking aloud by modeling strategies and the “inner talk” that happens during the process of writing (Englert, Mirage, & Dunsmore, 2006, p. 208). This was the method identified as the instructional model in four studies (Englert et al., 2009; Englert et al., 1991; Wong & Butler, 1996; Wong et al., 1997). Guzel-Ozzmen (2006) combined a modified CSIW and SRSD model of instruction to instruct middle school students with mild intellectual disabilities expository text structure and a process for planning before writing. Through both of these models of instruction delivery and other variants, a number of strategies to plan, organize, and produce effective text structure are incorporated.

Arrangements. The reauthorization of the Elementary and Secondary Education Act (No Child Left Behind Act, 2001) was a pivotal movement from pull-out to push-in services for individuals with a disability. The response to intervention (RTI) model requires evidence-based instruction to be implemented in the general education classroom before the process of determining eligibility of a mild disability may begin (Ofiesh, 2006). For these reasons and more, interventions need to be validated as effective for group instruction and must be individualized as required by an IEP. Review of writing instruction research revealed 14 studies that provided individual instruction. However, the majority of writing instruction research was implemented in a group setting (76%; $n = 21$) with six of these studies conducted the general education classroom.

Independent variables. Figure 1 provides a list and description of all mnemonic strategies discussed in this review. In the current empirical literature, 23 studies (70%) used a general

writing process strategy to provide structure for students to organize and proceed through the writing process, 12 studies (36%) explicitly taught students how to efficiently plan for writing, and 15 studies (45%) incorporated instruction on text structure into the treatment package. Five studies used technology in the program to increase writing quality for struggling writers (Delano, 2007a; Englert, Wu, & Zhao, 2005; Englert, Zhao, Dunsmore, Collings, & Wolbers, 2007; Graham, MacArthur, Schwartz, & Page-Voth, 1992; Wong et al., 1997). Lastly, Ferretti, MacArthur, & Dowdy (2000) taught self-regulatory behaviors alone as the independent variable. Instructional sessions ranged from 30 to 50 minutes. The majority of studies applied the writing intervention in less than three weeks or 15 instructional sessions ($n = 21$). Seven studies evaluated an extended writing curriculum from 18 instructional sessions to across a year. Five studies did not specify the number of instructional sessions (Englert et al., 2009; Englert, Wu, & Zhao, 2005; Englert et al., 2007; Englert et al., 1995; Wong et al., 1997).

Mason and Shriner (2007) evaluated the effectiveness of POW and SRSD model of writing instruction to increase writing skill for six students with emotional and behavior disorders (EBD) using a multiple-probe design across students. The POW mnemonic is a simple reminder of the basic stages of writing. Instructors have used it to support student writing across all genres. Five studies used this writing process strategy mnemonic as a piece of the intervention specifically for expository and persuasive compositions (Garcia-Sanchez & Redondo, 2006; Lienemann & Reid, 2008; Mason et al., 2010; Mastropieri et al., 2009). De La Paz & Graham (1997a; 1997b) and Jacobson and Reid (2010) used the STOP mnemonic for the same purpose. This process strategy pairs nicely with a persuasive style essay. The process of writing a composition has also been instructed without a mnemonic. MacArthur and Lembo (2009)

increased essay quality and length of adult learners by simply describing and modeling the steps to composing.

Planning behavior is a critical part of the writing process directly correlating with writing quality. Troia (2006) notes that struggling writers plan less and rely more on “knowledge-telling” approach to composition. A graphic organizer using the TREE mnemonic was used to facilitate planning as an intervention for struggling writers in six studies (Delano, 2008a; Lienemann & Reid, 2008; Mason et al., 2010; Mason & Shriner, 2008; Mastropieri et al., 2009; Sexton, Harris, & Graham, 1998). In accordance with the CWIS writing program, “think sheets” can be useful to guide students in planning and recording ideas prior to beginning the composition. Wong et al. (1996; 1997) used this as the intervention to increase writing cogency, clarity, and coherence. De La Paz (1999; 2001) used PLAN along with cue card prompting while Graham et al. (1992) used PLAN along with computer word processing to encourage planning before writing expository essays.

Genre specific strategies set specific product goals for students to meet through writing. Four of the 18 studies focusing on *expository writing*, a genre that provides the reader with information, explicitly supported student understanding of the text structure. Guzel-Ozmen (2006) created a hybrid of SRSD and CSIW utilizing “think sheets” (Englert, Raphael, & Anderson, 1992). Here the text structure was taught by providing exemplary texts and scaffolding students as they transferred information to an organizer. MacArthur and Philippakas (2010) used IBC to support the basic three parts of expository text structure. Chalk et al. (2005) used DARE to support students considering the views of the intended reader. Mason et al. (2006) used a combination of reading, planning, and then genre specific strategy (TWA+ PLANS with RAP) to support expository writing structure. Two studies taught text structure beyond the genre

to a specific writing task. Konrad and Test (2007) created a new mnemonic, GO 4 IT...NOW, to support student expository writing specific to goal setting requiring a specific organization and structure. Therrien et al. (2009) taught students to structure essay test answers using the ANSWER strategy. Statement-Pie was a text structure strategy used to teach students to outline text and write expository paragraphs in the study by Wallace and Bott (1989). In contrast, Taylor and Beach (1984) used an outline template for students to discover text structure through reading before writing their own composition with the same format. This is a process included in all writing instruction using the SRSD model of instruction.

The *persuasive writing* genre requires a more complicated instruction including organization, knowledge and thought. Ten of the 17 studies evaluating the effects of instruction on persuasive writing used explicitly taught persuasive text structure. The most popular method, TREE mnemonic, was used to teach text structure to struggling writers in six studies (Delano, 2008a; Lienemann & Reid, 2008; Mason et al., 2010; Mason & Shriner, 2008; Mastropieri et al., 2009; Sexton, Harris, & Graham, 1998). Four studies use a more advanced persuasive text structure, DARE mnemonic, to support student's memorizing the text structure (Chalk et al., 2005; De La Paz & Graham, 1997a; 1997b; Jacobson & Reid, 2010). This DARE strategy challenges writers to not only support their beliefs as in TREE, but also present a counter-argument for the opposition.

The use of technology can support writing quality and quantity. This is done using computer word processing and computer software that scaffolds the planning and process of writing (MacArthur, 2006). Four writing intervention research studies have been used such technology. Englert et al. (2005; 2007) evaluated computer software called Technology-Enhanced Learning Environments on the Web (TELE-Web). TELE- Web is Internet-based

software that offers several structural supports upon which students can frame their thoughts, words, and ideas. In comparison to unsupported use of TELE-Web and a control, supported TELE-Web use increased quality of persuasive essays (Englert et al. 2005). In comparison to process writing instruction, Englert et al. (2007) found that nine and 10-year olds earned significantly higher writing quality scores than comparison students. Graham et al. (1992) and Wong et al. (1997) both used computer word processing to assist student writing in addition to direct writing instruction.

Teachers can differentiate emphasis on certain aspects of the strategy or instruction to individualize the program to each student. Sophistication of writing can be increased with instruction on self-regulation for accomplishing more advanced writing tasks. For example, simple strategies for story writing would include a basic self-graphing component to aid in self-evaluation of including story elements. As the specific strategy becomes more complicated, better developed persuasive essays are written with an extensive amount of planning, revising, and self-instruction. Steady efforts to explore specific features of the strategy instruction are evident through systematic replication of research. Ferretti, MacArthur, and Dowdy (2000) provided direct instruction creating elaborated subgoals for writing a persuasive essay to fourth and sixth graders. Analysis indicated that only sixth graders made significantly larger gains on quality and persuasiveness

Fidelity. Due to the time intense implementation of independent variables in writing instruction, procedural fidelity is of particular importance (Horner et al., 2005). Proper adherence to procedural controls for instrumentation as a threat to internal validity. In accordance with quality indicators (Horner et al.; Gerstin et al., 2005), 24 studies (73%) reported measures to ensure fidelity of writing instruction. At a minimum, these studies addressed fidelity of treatment

by providing teachers with a detailed lesson plan check sheet to follow and complete during each instructional session. Seventeen studies (52%) ensured procedural fidelity by having by a second observer mark the same lesson plan check sheet during 20% - 50 % of the sessions.

Methodological adequacy. Each of the studies included in this review used a quantitative empirical research design. Sixteen of the studies used a group research design to evaluate the effectiveness of the writing interventions. Garcia-Sanchez and Redondo (2006) and Therrien et al. (2009) were the only two studies to randomly assign students to conditions. Quasi-experimental designs, although common in the social sciences, are less valid approaches due to selecting groups without randomization. Four studies randomly assigned an entire class to a condition (Englert et al., 2007; Englert et al., 2005; Ferretti et al., 2000; Taylor & Beach, 1984) Randomization in the social sciences has been identified as problematic due to logistical issues working around individuals' schedules (Campbell & Stanley, 1963; Quasi-Experimental Design, 2010). Chalk et al. (2005) did not involve a comparison group and only evaluated differences between pre and post testing. Pre-test post-test design is problematic because there is no way of judging whether the testing or Hawthorne effect is factoring in on results. Seventeen studies evaluated treatment with single subject research, all of which used a multiple probe design. Ten studies used the multiple probe across students design and six evaluated dependent measures across groups of students. Delano (2007) evaluated student responses of two different types of video self-modeling tasks across staggered tiers of instruction providing some, but limited, intra-subject replication. In addition to showing the path of individual data, single subject research methodology can control for some extraneous variables that support alternative explanations of the findings, also known as internal validity.

A common direct measurement of academic behaviors is evaluation of permanent product (Ayres & Gast, 2010). There are numerous methods practitioners can evaluate a written permanent product. One criterion for a study's inclusion in this review was to provide a reliable writing quality score based on the writing samples. In addition to this dependent measure, researchers evaluated different aspects of student behavior based on the individual research questions. Table 5 provides a list of the dependent measures used in each strategy intervention to improve students' writing skills. The primary dependent measures found in the writing intervention literature were number of words included in the written responses (n=23; 70%), number of elements (n=21; 64%), and holistic quality (n=16; 48%). Examiners measure holistic quality by taking their general impressions of overall quality or a written response and scoring it compared to low, medium and high quality anchor responses on a seven or 8-point scale. An alternative to holistic quality as a dependent measure, analytic trait scoring is a criterion-referenced assessment where the writing sample is compared against predetermined criterion or traits (Espin, Wiesenberger, & Benson, 2004). Fifteen studies (45%) used this method to measure quality instead of traditional holistic measures. Within this review of the empirical research, 17 (52%) studies collected data on both number of functional essay elements and number of words. Thirteen studies (39%) reviewed measured all three dependent variables (number of words, number of elements, and holistic quality) to evaluate the writing responses. As seen in Table 4, 13 articles (39%) reported secondary dependent variable(s) specific to that study.

Without reliable measurement of the dependent variable, confidence in the experimental findings is lost regardless of a stringent research design (Gast, 2010). To ensure that data are being collected reliably, periodic inter-observer agreement checks for agreement must be

conducted. The basic procedures for collecting reliable measurement are (a) setting criteria of performance beforehand and (b) training the observers to rate student behavior or permanent products before treatment (and again during the study to be sure the common definition and understanding of the dependent variable being measured). Each of the studies included in this review evaluated dependent measures that were adequately checked for reliability.

Results. Empirical research on writing interventions indicates that quality instruction includes strategy instruction on process, planning, and text structure, use of think sheets and interactive dialogues, and/or self-regulation skills. These strategies improve students' writing performance and self-efficacy (Graham & Harris, 2005). Self-efficacy beliefs impact performance because of their affect on motivation. Using such components from the process learning approach increased the quality of writing expository and persuasive essays on length, inclusion of functional elements included, and/or an overall score of the permanent product measured as analytic or holistic quality scores. Maintenance data were taken in 17 studies. Maintenance of skills was evaluated by requiring participants to write an essay two to 10 weeks after instruction. Generally, studies that evaluated maintenance reported lower levels of writing measures but still above baseline/pre-test. Generalization data were collected in six studies. Writing skills generalized to a different instructor (Chalk et al., 2005; Mason and Shriner, 2008; Sexton et al., 1998; Wallace & Bott, 1989), however only slight generalization to different text structures was evidenced (Graham et al., 1992; MacArthur, Graham, Schwartz, & Schaffer, 1995). Social validity data on instruction and results were collected in six studies indicating that students generally found the treatment acceptable (De La Paz, 1999; De La Paz & Graham, 2007a; MacArthur & Philippakos, 2010; Mason et al., 2006; Mason & Shriner; Sexton et al.). De La Paz also reported teachers found the treatment acceptable. One student in the study by De La

Paz & Graham reported that the SRSD strategy was not useful and as a result, this student did not make increases in planning, or writing duration but did increase the number of elements included in his essays with 100% PND between baseline and post-instruction.

Self-efficacy/Motivation. Self-regulated students are active learners who are motivated and persist in making higher achievements. Among the factors that affect motivation is the concept of self efficacy. As a key component of the SRSD model of instruction design, self-regulation increases skill generalization and self-efficacy (Zito, Adkins, Gavins, Harris, & Graham, 2007). Of the 33 studies included in this review, only six (18%) evaluated changes in student self-efficacy for essay writing as a result of SRSD writing instruction (Garcia-Sanchez & Fidalgo-Redondo, 2006; Graham et al., 1992; MacArthur & Philippakos, 2010; Page-Voth & Graham, 1999; Sexton, Harris, & Graham, 1998; Wong et al., 1997). Both Page-Voth and Graham as well as MacArthur and Philippakos used a modified version of Graham and Harris's (1989) scale to measure student self-efficacy. These adapted scales asked students to rate six statements about how they perceived their ability to write quality essays. Page-Voth and Graham found no statistically significant differences between strategy and control groups and overall student estimates were neutral. These results were similar to previous studies not included in this review (Graham & Harris, 1989; Sawyer, Graham, & Harris, 1992). Page-Voth and Graham suggest that self-efficacy is not influenced by provisions of feedback and goal-setting. However, participants in the MacArthur and Philippakos study all made gains in self-efficacy scores after intervention. The researchers attributed improvements in self-efficacy and performance to the program's emphasis on self-evaluation. Wong et al. (1996) used their own self-efficacy questionnaire finding significant differences in self-efficacy pre and post evaluations finding that after training, adolescents found themselves more able to produce a good essay. Sexton et al.

(1998) evaluated students' attribution beliefs about writing before and after instruction with an adapted form of Bugental, Whalen, and Henker (1977) attribution scale. At baseline all students believed that effort was the most important attribute to writing success and failure. After instruction, students placed considerable more importance on strategy use suggesting that their motivation was redirected to a more efficient means to improve essay quality.

Conclusions. Empirical research on writing instruction for individuals with a learning disability or those who simply struggle with writing without formal diagnoses indicates that focusing intervention on writing processes and self-regulation increase ability to write expository and persuasive compositions as well as quality of written products. Process writing can encourage reluctant writers, however there is no evidence to support that processes are “self-learned”. Research does show that instructional methods that are teacher-directed, focusing on students' sub-processes and self-regulation are highly effective (Englert & Raphael, 1988). A number of simple strategies, when combined, create a system for a self-instruction routine used to fulfill academic tasks. Emphasis on generalization and maintenance is critical when teaching strategies and self-regulation. As in SRSD or other similar approaches to strategy instruction, emphasis on student mastery ensures fluent and flexible use of skills. Without including all steps when using the skill, the students will not be effective or efficient writers (Deshler & Shumaker, 1993). In other words, generalization must be directly taught. Practitioners need to teach students how skills learned can apply to different settings and tasks.

Discussion

Social skills are considered a major deficit for individuals with ASD and are pervasive across the life span, determining outcomes for these individuals. As a whole, people with ASD are less likely to live independently, attend college successfully, or sustain a job. It is imperative

that effective interventions are used to teach these individuals to accurately understand that others have thoughts and beliefs that differ from their own and learn to apply this knowledge in real world contexts. According to the review of current literature, social perspective-taking can be directly taught through discrete ToM task training, although researchers have not consistently proven generalized use of skills in natural settings (Hadwin et al., 1997; Ozonoff and Miller, 1995). Some researchers report generalization in terms of passing “untrained tests” which is a form of stimulus generalization, but true generalization of social perspective-taking results in increased social interactions and improved comprehension in naturalized settings. Students need to be able to consider thoughts and intents of others to understand motives and predict behavior of others. Students can learn to apply rules and principles to figure out other’s perspectives, but they also need to develop the true perspective-taking ability in general to accurately apply it in the varied contexts of life (e.g. reading and writing). Research has demonstrated that brains activate differently when engaged in reading comprehension tasks, which require the reader to attribute mental states (Fletcher et al., 1995). Additionally, it is possible that poor perspective-taking also impacts the writer’s ability to consider the audience in written tasks. Reading and writing are critical skills for many aspects of life, so those who struggle are at a considerable disadvantage to their more proficient peers in this competitive world.

Better identification of students with ASD without cognitive impairments and increased focus on early intervention social and behavioral differences has put students with mild impairments of ASD within reach of academic gains. However, children with ASD are likely to have a specific learning disability in reading, written expression, and/or math (Aspy & Grossman, 2008) as well as demonstrate symptoms of ADHD (Sturm, Fernell, & Gillberg, 2004). In addition, contemporary reauthorizations of NCLB (2001) ensure students have access

to the general curriculum. Therefore, researchers are giving more attention to academic interventions and accommodations. Weak central coherence and deficits in executive functioning are two subdivisions of cognitive features associated with ASD that impact learning. The theory of weak central coherence attributed to individuals with ASD describes their inability to integrate information to make a meaningful whole (Aspy & Grossman, 2008). A good analogy for this problem is “not being able to see the forest for the trees.” Although being able to focus on the details allows many individuals with ASD to become experts on a specific interest, disadvantages of weak central coherence include poor reading comprehension (Reitzel & Szatmari, 2003), poor sense of audience during written expression (Mays & Calhoun, 2003), and difficulty understanding math word problems (Reitzel & Szatmari). In addition, executive function is a cognitive function that controls cognitive processes such as working memory, concentration, behavior inhibition, planning, initiation, performance monitoring, and self-regulation making organization, time-management, and progress monitoring during work very distressing (Aspy & Grossman). Students with ASD presenting with executive dysfunction struggle in educational environments that are not supportive. Problems for individuals with ASD are anticipated because of these uneven profiles (i.e. synthesizing information, initiating task and problem solving; Falconer, 2008).

Empirically-based strategies must be made available to practitioners for use to increase desired behaviors by individuals with ASD. SRSD model of instruction makes a good choice for treatment of students with ASD to improve writing quality. Baker, Chard, Ketterlin-Geller, Apichatabutra, and Doabler (2009) evaluated SRSD research based on quality indicators set forth by Gerstin et al. (2005) and Horner et al. (2005) using a 4-point rating scale. The five experimental group design studies and 16 single-subject design studies on SRSD reviewed met

standards for evidence-based practice extending validity of the literature available to support SRSD as a practice. In addition, it is adaptable to meet the specific needs of individuals with ASD including executive function (planning, organizing, and self-regulation), central coherence (composing a cohesive essay), perspective-taking (attending to the needs of the audience), and motivation or self-efficacy needs specific to adolescents with ASD.

Writing process instructional models such as SRSD are flexible approaches for increasing a student with ASD's ability to process, plan, and self-regulate writing composition accommodating weak central coherence and executive dysfunction. Specific to expository and persuasive writing, students must develop a good sense of audience, taking other's perspective on specified topics. This is challenging as a whole for students with ASD to control central coherence, executive function, as well as social perspective-taking in one task. Although students with an ASD often have academic capabilities equal to peers, these students require direct instruction on behaviors to increase success in mainstreamed environments. There are limited numbers of studies evaluating the use and generalization of SRSD model of instruction to improve expository and persuasive writing responses to the ASD population. Students with ASD have a number of differences that must be addressed within the curriculum. SRSD writing strategy instruction addresses the executive function difficulties students with ASD may have, but making adaptations to writing strategy to address differences that manifest because of ASD, (i.e. poor theory of mind and weak central coherence) could increase achievement. Most importantly, researchers must also be persistent in their search for research-based, generalizable strategies for use with various student differences in inclusive environments.

Table 1

ASD Writing Instruction Studies

STUDY	DESIGN	PARTICIPANTS	SETTING	GENRE /Strategy (IV)	PF	DV	• IRA	RESULTS
Asaro & Saddler (2010)	MP across students	N=3 ASD + WLD 6-9 years old	Public ES separate room	Story SRSD POW WWW- What=2 How=2 6 instructional sessions	100% (50% session)	<ul style="list-style-type: none"> • # of story elements • Holistic quality (8 pt. scale) • # words 	<ul style="list-style-type: none"> • training to 80% criteria for 1 pt. difference .92 (pt by pt) • to 80% criteria .78 (pt by pt) (1 pt. difference = 1) • word processor count 	<ul style="list-style-type: none"> • 93% PND (75% to 100%) across all measures and students • 4 weeks after final post treatment probe sample 2/3 data remained at post-intervention levels and all above baseline level • All students increased measures on personal narrative from baseline to after training
Delano (2007a)	MB across responses	N=1 AS 6 th	Public MS separate room	Narrative SRSD Vocabulary Strategy 5 instructional sessions	100% (1/3 sessions)	<ul style="list-style-type: none"> • # words written • # action words • # describing words • Primary Trait (7 pt. scale) 	<ul style="list-style-type: none"> • 97% (gross method) • 96% (gross method) • 98% (gross method) • 95% (gross method) 	<ul style="list-style-type: none"> • Abrupt increases in level after instruction on each response • 2 weeks after last post-instruction probe skills maintained • No generalization data
Delano (2007b)	MP across participants	N=3 AS 13-17 years old	Public HS separate room	Persuasive Essay SRSD+ Video self-modeling of self-monitoring and Mnemonic TREE 4-11 instructional sessions	none	<ul style="list-style-type: none"> • # functional elements • # words written 	<ul style="list-style-type: none"> • 87% (pt by pt) • 98% (pt by pt) 	<ul style="list-style-type: none"> • Post-instruction gains made by all students in all measures • 1 week and 12 weeks after final intervention session indicate maintained skills for 2 or 3 students and third student decreased skills yet remain above baseline • Expository prompt given in each phase indicate slight increases in level of data after instruction

MP = Multiple Probe ES= Elementary School; MS = Middle School; HS = High School

Table 2

Perspective-taking Studies

Study	Design	Age/Diagnosis	Type of Intervention	Target	Generalization to Natural Environment
Bauminger et al. (2007)	group design	7 - 10 HFASD	Groupwork	Social problem solving; Theory of Mind tasks; executive function	No
Bernard-Opitz et al. (2001)	group design	5 – 8 HFASD	Technology-based	Social problem solving	Not measured
Charlop-Christy & Daneshvar (2003)	MB across participants and tasks	6 – 9 ASD	Technology-based	Theory of Mind (fb) tasks	Not measured
Chin & Bernard-Opitz (2000)	MB across participants	5 – 7 HFASD	Systematic instruction	Conversation skills; Theory of Mind (fb) tasks	Conversation skills-yes ToM not measured
Fisher & Happe (2005)	group design	6 – 15 ASD and AS	Systematic Instruction	Theory of Mind tasks; executive functioning	Not measured
LeBlanc et al. (2003)	MB across tasks	7 – 13 autism	Technology-based	Perspective-taking skills	Not measured
Mackay et al. (2007)	group design	6-16 HFASD	Groupwork	Social interaction and understanding	Social validity survey - yes.
Solomon et al. (2004)	group design	8 – 12 HFASD AS PDD-NOS	Groupwork	Theory of Mind tasks	Not measured
Turner-Brown et al. (2008)	group design	18 – 55 HFASD	Groupwork	Theory of Mind tasks	Not measured

MB = Multiple Baseline; fb = False Belief

Table 3

Expository Essay Writing Studies

STUDY	DESIGN	PARTICIPANTS	SETTING	STRATEGY(IV)	PROCEDURAL FIDELITY	DEPENDENT VARIABLE	INTER-RATER AGREEMENT
Chalk et al. (2005)	Group Design Repeated measures	N=15 Mild dis. 10 th	Public HS History resource class	SRSD Think Plan Write + DARE	Lesson plan checklists only	<ul style="list-style-type: none"> • # of words • Primary Trait score (6 pt. scale) 	<ul style="list-style-type: none"> • 80% (pt. by pt.) • 98% (gross method)
De La Paz (1999)	MP across classrooms	N=23 LD HA AA LA 7 th & 8 th	Public MS General ed. class 3 classrooms	5 instructional sessions SRSD PLAN + Write	96% (25% sessions)	<ul style="list-style-type: none"> • Planning rated on a 6pt. Scale • # essay elements • Holistic quality (7 tp. scale) • length 	<ul style="list-style-type: none"> • 84% • 84% • $r=.9$ • word processor count
De La Paz (2001)	MP across participants	N=3 ADD SII SII + ADHD 7 th & 8 th	Public MS General Ed. Class large group instruction	SRSD PLAN and Write + cue card 15-16 instructional sessions	96% ave. steps complete across 3 teachers (25% sessions)	<ul style="list-style-type: none"> • # of functional elements • # of words • Holistic quality score (7 pt. Scale) • Planning rated on a 6pt. Scale 	<ul style="list-style-type: none"> • 0.8 • word processor count • mid, low, high samples as anchors- Pearson product moment correlation = .92 • 0.9
Englert et al. (2009)	Group Design Control Comparison	125 LD (41) NLD (84) 7 th	Public MS Gen Ed. classroom	CSWI; Learning-to-Learn Social studies •highlighting •note-taking •writing “article” Science: •plans •maps •writing “article” Unspecified length of instruction	N/A	<ul style="list-style-type: none"> • Primary trait score (6 pt.) • # essential features 	<ul style="list-style-type: none"> • Training to high degree of reliability; 85%

STUDY	DESIGN	PARTICIPANTS	SETTING	STRATEGY(IV)	PROCEDURAL FIDELITY	DEPENDENT VARIABLE	INTER-RATER AGREEMENT
Englert, Raphael, Anderson, Anthony, & Stevens (1991)	Group Design Repeated measures Control Comparison	N=183 LD (55) ND (128) 4 th & 5 th	Public ES Gen Ed. classroom	CSIW + POWER Instructional sessions Oct - April	Weekly observations with feedback.	<ul style="list-style-type: none"> • Primary trait score (3 pt.) • Holistic score (3 pt.) • # of ideas in paper 	<ul style="list-style-type: none"> • above 80% (Pt. by Pt.) average across all measures
Englert et al. (1995)	Group Design Repeated measures Control Comparison	N=88 Mild disabilities 1 st -4 th	Public ES Resource room	Early Literacy Project (ELP) curriculum Unspecified length of instruction	N/A	<ul style="list-style-type: none"> • Expository primary trait score (12 pt) • Narrative primary trait score (18 pt) • # of items recalled • Three part strategy knowledge score 	<ul style="list-style-type: none"> • 80% (Pt. by Pt.) average across all measures
Englert et al. (2007)	Repeated measures ; Control Comparison; Class randomly assigned to conditions	N=35 ID (24) Other mild dis. (11) 9-10 yrs. Old	Public ES Special Ed. class	TELE-Web vs. Process writing # instructional sessions not specified	none reported	<ul style="list-style-type: none"> • Primary trait score: quality (3 pt.) • Primary trait score: conventions (3 pt.) 	<ul style="list-style-type: none"> • 95% (Pt. by Pt.) for both measures together
Garcia-Sánchez & Fidalgo-Redondo (2006)	Repeated measures; Control Comparison; Students randomly assigned to conditions	N=121 LD 5 th & 6 th	Spanish public MS Resource room	SCM vs. SRSD POD+ the vowels 25 instructional sessions	Weekly training sessions and teacher portfolio	<ul style="list-style-type: none"> • # words • # linguistic markers • # of main parts included • Primary trait score (6 pt.) 	<ul style="list-style-type: none"> • No reliability measures reported for these measures
Graham et al. (1992)	MP across participants	N=4 LD 5 th	Public ES separate room	SRSD PLANS and computer 6-8 instructional sessions	not reported	<ul style="list-style-type: none"> • Length • # elements • Holistic Quality score (8 pt. scale) 	<ul style="list-style-type: none"> • $r = .99$ • $r = .84$ • $r = .83$

STUDY	DESIGN	PARTICIPANTS	SETTING	STRATEGY(IV)	PROCEDURAL FIDELITY	DEPENDENT VARIABLE	INTER-RATER AGREEMENT
Guzel-Ozmen (2006)	MP across participants	N=3 MID 13 to 17 years old	Public MS separate room	Modified CSIW and SRSD 10-14 instructional settings	100% (once each phase)	<ul style="list-style-type: none"> • # elements • # words • coherence # linguistic markers • Primary Trait score (7 pt. scale) 	<ul style="list-style-type: none"> • Pearson Product Moment Reliability coefficient $r = .98$ • word processor count • $r = .99$ • 1 hour training $r = .91$
Konrad & Test (2007)	MP across groups of students	N=12 7 - LD 3 - OHI 1 - EBD 1 - MID 5 th & 8 th	Public MS resource Language Arts class group instruction	Expository Paragraph IEP Awareness Instruction + SRSD GO 4 IT...NOW 11 instructional sessions	96.9% (3x across all teachers)	<ul style="list-style-type: none"> • IEP Content Indicators (12 pt.) scale) • Goal Paragraph score (10 pt. Scale) • # of words • CWS-IWS with and w/out spelling 	<ul style="list-style-type: none"> • 81% • 88% • 99% (gross method) • 91-94%
MacArthur & Philippakos (2010)	MB across dyads	N=6 LD 11-14 yrs.	Public MS Dyads in separate room	Compare - Contrast Essays SRSD IBC + TAP > 4 instructional sessions	95% to 100% (4 lessons)	<ul style="list-style-type: none"> • # of Text Structure Elements • Primary Trait (6 pt. scale) • # of words 	<ul style="list-style-type: none"> • across elements = .85 (Pt. by Pt.); Total elements Pearson $r = .96$ • all 6 pt. anchors to criteria of 70% and 100% w/in 1 pt. Pearson $r = .81$; 1 pt. $r = .91$ • word processor count
MacArthur et al. (1995).	Repeated measures ; Control Comparison; Teacher chose condition	N=127 LD 10-11 years old	Public ES Self-contained LD classes	Computers and Writing Instruction Project (CWIP) Instruction across two school years	Teachers provided detailed curriculum and ongoing training.	<ul style="list-style-type: none"> • # words • Holistic quality score (8 pt. scale) 	<ul style="list-style-type: none"> • Training with mid, low, high samples as anchors to 80% criteria • ave. .93 across measures and teachers

STUDY	DESIGN	PARTICIPANTS	SETTING	STRATEGY(IV)	PROCEDURAL FIDELITY	DEPENDENT VARIABLE	INTER-RATER AGREEMENT
Mason et al. (2006)	MP across triads of students	N=9 LD 4 th	Public ES small group in separate room	Expository Essay SRSD TWA +PLANS with RAP ave. 15 instructional sessions	97% (1/3 sessions)	<ul style="list-style-type: none"> • # Main Ideas • Holistic Quality score (6pt. Scale) • # information units • # words 	<ul style="list-style-type: none"> • .95 (Pt. by Pt.) • .82 (Pt. by Pt.) • .93 (Pt. by Pt.) • 1.00 (Pt. by Pt.)
Taylor & Beach (1984)	Repeated measures ; Control Comparison; Class randomly assigned to conditions	N=114 ND 7 th	Public MS Gen Ed. class	Experimental: Outline structure for writing summaries Conventional: Read, comp. questions, write Control: none 7 wks of instruction	Detailed lesson plans provided to instructor	<ul style="list-style-type: none"> • # propositions recalled • Holistic quality (4 pt. scale) 	<ul style="list-style-type: none"> • $r = .92$ • <i>Chronbach's alpha</i> = .78
Therrien et al. (2009)	Repeated measures ; Control Comparison; Randomly condition assignment	N=42 LD 7 th & 8 th	Public MS Resource room	Essay Test-Taking Strategy: ANSWER 8 instructional sessions	Detailed lesson plans provided to instructor	<ul style="list-style-type: none"> • Primary trait score (6 pt.) 	<ul style="list-style-type: none"> • Training to a unspecified criteria
Wallace & Bott (1989)	MP across participants	N=4 LD 8 th	Separate room	Statement Pies 5 instructional sessions	100%	<ul style="list-style-type: none"> • Primary trait score (6pt.) 	<ul style="list-style-type: none"> • 100% (Pt. by Pt.)
Wong et al. (1997)	Repeated measures Control Comparison (2/3 years) Not random assignment	yr 1 -N=23 yr 2 -N=24 yr 3 -N=13 LD & low achiever 8 th & 9 th	Public MS yr 1- separate room yr 2 & 3 - Special Ed. class	Plan Sheets Word Processor	not reported	<ul style="list-style-type: none"> • Primary trait score (Pts. not reported) 	<ul style="list-style-type: none"> • Not reported

AA = Average Achiever; ADD = Attention Deficit Disorder; ADHD = Attention deficit Hyperactivity Disorder; EBD = Emotional and Behavioral Disability; ES = Elementary School; HA = High Achiever; HS = High School; ID = Intellectual Disability; LA = Low Achiever; LD = Learning Disability; MB = Multiple Baseline; MID = Mild Intellectual Disability; MP = Multiple Probe; MS = Middle School; ND = Non-disabled; OHI = Other Health Impaired; PND = Percentage of Non-Overlapping Data; SLI = Severe Language Impairment; SRSD = Self-regulated Strategy Development

Table 4

Persuasive Essay Writing Studies

STUDY	DESIGN	PARTICIPANTS	SETTING	STRATEGY(IV)	PROCEDURAL FIDELITY	DEPENDENT VARIABLE	INTER-RATER AGREEMENT
Chalk, Hagan-Burke, & Burke, (2005)	Group Design Repeated measures	N=15 Mild disabilities 10 th	Public HS History resource class	SRSD Think Plan Write + DARE	Lesson plan checklists only	<ul style="list-style-type: none"> • # of words • Primary Trait score (6 pt. scale) 	<ul style="list-style-type: none"> • 80% (pt. by pt.) • 98% (gross method)
De La Paz, & Graham, (1997a)	MP across participants	N=3 LD 5 th	Public ES Separate room	5 instructional sessions SRSD STOP + DARE	95% (25% sessions)	<ul style="list-style-type: none"> • Duration of planning • # unique ideas • # transformations • # words • # elements • # text units • Holistic quality score (7 pt.) 	<ul style="list-style-type: none"> • .91 • .91 • .93 • word processor count • .97 • .89 • .8
De La Paz, & Graham, (1997b)	Randomized Control Group Design	N=33 LD 5 th -7 th	Public MS large group instruction	SRSD STOP + DARE	90% (25% sessions)	<ul style="list-style-type: none"> • Length • # elements • Coherence • Quality 	<ul style="list-style-type: none"> • word processor count • $r=.90$ • $r=.95$ • $r=.80$
Deadline-Buchman & Jitendra (2006)	Group Design Repeated measures	N=5 LD 4 th	Public ES L.A. resource classroom	22 instructional sessions	teacher provided one-on-one training and scripted lessons 95% (40%)	<ul style="list-style-type: none"> • # words • Planning time • Composing time • Primary Trait score (4 pt.) • Clarity and cogency score (5 pt.) 	<ul style="list-style-type: none"> • 100% (Pt. by Pt.) • 100% (Pt. by Pt.) • 100% (Pt. by Pt.) • 86% (Pt. by Pt.)
Delano (2007a)	MP Design across participants	N=3 AS 13 to 17 yrs. old	Public HS separate room	SRSD+ Video self-modeling of self-monitoring and Mnemonic TREE	none	<ul style="list-style-type: none"> • # functional elements • # words written 	<ul style="list-style-type: none"> • 87% (pt by pt) • 98% (pt by pt)
Englert, Wu, & Zhao (2005)	Repeated measures Control Comparison Class randomly assigned to conditions	N=12 LD 4 th & 5 th	Public MS	<ul style="list-style-type: none"> • TELE-Web Supported • Unsupported • Paper/ Pencil # instructional sessions not specified	none reported	<ul style="list-style-type: none"> • Primary trait score (3 pt.) • # of words 	<ul style="list-style-type: none"> • 95% • word processor count

STUDY	DESIGN	PARTICIPANTS	SETTING	STRATEGY(IV)	PROCEDURAL FIDELITY	DEPENDENT VARIABLE	INTER-RATER AGREEMENT
Ferretti, MacArthur, & Dowdy (2000).	Repeated measures Control Comparison Class randomly assigned to conditions	N=124	Public ES Gen. Ed. class	Direct instruction on creating elaborated subgoals for persuasion in essay 2 instructional sessions	none reported	<ul style="list-style-type: none"> • Primary trait score (7 pt. scale) • # elements 	<ul style="list-style-type: none"> • low med high anchor essays used in training ; $r = .73$ • $r = .85$
Jacobson & Reid (2010)	MP Design across students	N=3 ADHD 11 th & 12 th	Public HS separate room	SRSD STOP & DARE 6 instructional sessions	99% (20% sessions)	<ul style="list-style-type: none"> • # essay parts (6 possible) • # words • Holistic Quality (7pt. Scale) • # transition words 	<ul style="list-style-type: none"> • Training to 80% criteria 1.0 (Pt. by Pt.) • word processor count transcription 98.5% accurate • low med high anchor essays used in 45 min training Pearson $r = .95$ • training to 80% criteria 91 (Pt. by Pt.) • .98 (Pt. by Pt.)
Lienemann & Reid (2008)	MP across students	N=4 2 – OHI 1 – LD 1 – EBD (All ADHD) 4 th & 5 th	Public ES separate room	Persuasive Essay SRSD POW +TREE 8-12 instructional sessions	99% (25% sessions)	<ul style="list-style-type: none"> • # essay elements (8 possible) • # words • Holistic Quality (7pt. Scale) 	<ul style="list-style-type: none"> • word processor count • 96
MacArthur & Lembo (2009).	MP Design across participants	N=3 writing difficulty adult learners 40-44	Community building separate room	Brainstorm Take a side Get it together Compose (IRRC) Evaluate Revise 8-9 instructional sessions	94% to 100% (6 lessons)	<ul style="list-style-type: none"> • # elements • Holistic Quality (7pt. Scale) • length 	<ul style="list-style-type: none"> • Pearson $r = .90$ • Pearson $r = .85$ • word processor count

STUDY	DESIGN	PARTICIPANTS	SETTING	STRATEGY(IV)	PROCEDURAL FIDELITY	DEPENDENT VARIABLE	INTER-RATER AGREEMENT
Mason & Shriner (2008)	MP Design across participants	N=6 EBD 2 nd -5 th		SRSD POW + TREE 11-13 instructional sessions	98% (100% sessions)	<ul style="list-style-type: none"> • # of essay parts • holistic quality (10 Pts.) • # of words written • # of transition words written • Quality (7 pt.) 	<ul style="list-style-type: none"> • 100% • 82% • word processor count • 100%
Mason et al. (2010)	MP Design across groups of students	N=5 EBD 7 th & 8 th	Alternative school separate room	Persuasive 10 min "quick write" SRSD POW +TREE 8 instructional sessions	100% (50% sessions)	<ul style="list-style-type: none"> • # elements 	<ul style="list-style-type: none"> • Training criteria to .95 exact agreement = 82% within 1 pt. agreement = 99% • Training criteria to .95 exact agreement = 73% within 1 pt. agreement = 95% • word processor count
Mastropieri et al. (2009)	MP Design across groups of students	N=12 EBD 13-14 years	Separate MS for individuals with EBD small group	SRSD POW+TREE 55 instructional sessions	98% (1/3 sessions)	<ul style="list-style-type: none"> • words • Holistic quality + essay parts (10 pt) • percentage of intervals with student on-task behavior 	<ul style="list-style-type: none"> • 98% • 84%
Page-Voth & Graham. (1999)	Group Design	N=30 low achievers 7 th & 8 th		Goal setting Goal setting plus strategy	scripted lessons plus ongoing training	<ul style="list-style-type: none"> • # elements • Holistic quality score (7 pt.) • # of words • self efficacy interview 	<ul style="list-style-type: none"> • $r = .84$ • $r = .85$
Sexton, Harris, & Graham (1998)	MP Design across pairs of students	N=5 LD 5 th & 6 th	Public MS small group	6 instructional sessions SRSD TREE 8-10 instructional sessions	97% (1/3 lessons) 100% (all sessions)	<ul style="list-style-type: none"> • Length • Essay elements • Holistic quality (8 pt. scale) 	<ul style="list-style-type: none"> • Alpha coefficient. 83 • .99 • .95 • $r = .81$
Wong et al. (1996).	Group Design	N=38 LD and low achiever 8 th & 9 th	Public MS	Interactive dialogues Think sheets ~18 instructional sessions	none reported	<ul style="list-style-type: none"> • Trait score (5 pt.) <ul style="list-style-type: none"> ○ cogency ○ coherence 	<ul style="list-style-type: none"> • 85%

STUDY	DESIGN	PARTICIPANTS	SETTING	STRATEGY(IV)	PROCEDURAL FIDELITY	DEPENDENT VARIABLE	INTER-RATER AGREEMENT
Wong et al. (1997)	Repeated measures Control Comparison (2/3 years) Not random assignment	yr 1 -23 yr 2 -24 yr 3 -13 LD & low achiever 8 th & 9 th	Public MS yr 1- separate room yr 2 & 3 - Special Ed. class	Plan Sheets Word Processor	not reported	<ul style="list-style-type: none"> • Primary trait score (Pts. not reported) 	<ul style="list-style-type: none"> • Not reported

AA = Average Achiever; ADD = Attention Deficit Disorder; ADHD = Attention deficit Hyperactivity Disorder; EBD = Emotional and Behavioral Disability; ES = Elementary School; HA = High Achiever; HS = High School; ID = Intellectual Disability; LA = Low Achiever; LD = Learning Disability; MB = Multiple Baseline; MID – Mild Intellectual Disability; MP = Multiple Probe; MS = Middle School; ND = Non-disabled; OHI = Other Health Impaired; PND = Percentage of Non-Overlapping Data; SLI = Severe Language Impairment; SRSD = Self-regulated Strategy Development

Table 5

Dependent Measures

Study	# Words	# Elements	Holistic Quality	Trait Quality	Planning Quality	Duration of Planning	# of Linguistic Markers	# Transition Words	# Text (Informational) Units	Clarity and Coherence Rating	Duration of Composing	Self-Efficacy Indices	On-Task Behavior	# Transformations	Coherence rating # Unique Ideas	Strategy Knowledge	CMS-IWS
Chalk et al. (2005)	X			X													
De La Paz (1999)	X	X	X		X												
De La Paz & Graham, (1997a)	X	X	X			X			X					X	X		
De La Paz & Graham, (1997b)	X	X	X													X	
De La Paz (2001)	X	X	X		X												
Deadline-Buchman & Jitendra (2006)	X			X		X				X	X						
Delano (2007a)	X	X															
Englert et al. (1991)		X	X	X													
Englert et al. (1995)				X													X
Englert et al. (2007)				X													
Englert et al. (2009)		X		X													
Englert et al. (2005)	X			X													
Ferretti et al. (2000)		X		X													
García-Sánchez & Redondo (2006)	X	X		X			X										
Graham et al. (1992)	X	X	X														
Guzel-Ozmen (2006)	X	X		X			X										
Jacobson & Reid (2010)	X	X	X					X									
Konrad & Test (2007)	X	X		X													X
Lienemann & Reid (2008)	X	X	X														
MacArthur & Philippakos (2010)	X	X		X													
MacArthur et al. (1995)	X		X														
MacArthur & Lembo (2009)	X	X	X														
Mason & Shriner (2008)	X	X	X					X									
Mason et al. (2006)	X	X	X						X								
Mason et al. (2010)	X	X	X														
Mastropieri et al. (2009)			X										X				
Page-Voth & Graham. (1999)	X	X	X									X					
Sextonet al. (1998)	X	X	X														
Taylor & Beach (1984)	X																
Therrien et al. (2009)				X													
Wallace & Bott (1989)				X													
Wong et al. (1996)										X							
Wong et al. (1997)				X													
Total:	23	21	16	15	2	2	2	2	2	2	1	1	1	1	1	1	1
Percentage:	70%	64%	48%	45%	6%	6%	6%	6%	6%	6%	3%	3%	3%	3%	3%	3%	3%

Writing Process Strategy		
POW	P ick my idea O rganize my notes W rite and say more	
POD+ the vowels	P ick my idea O rganize my ideas following the vowels D evelop your text	
POWER	P lan O rganize W rite E dit R evise	
Planning strategies		
PLAN	P ick goals L ist ways to meet goals A nd make N otes S equence notes	
TAP	T ask: What do I have to do? A udience: Who do I have to write to? P urpose: Why do I have to write?	
TREE	N ote T opic Sentence N ote R easons E xamine each reason-Will my reader buy it? N ote E nding	
Text Structure Writing Strategy		
IBC	I ntroduction B ody C onclusion	
IRRC	I ntroduction R easons, R ebuttal C onclusion	
Statement PIE	S tatement P roof I nformation E xample	
ANSWER	Analyze the action words in the question. Notice the requirements of the question. Set up an outline. Work in detail. Engineer your answer. Review your answer.	
Combination General Planning and Text Structure Writing Strategies		
STOP & DARE	S uspend judgment T ake a side O rganize ideas P lan more as you write	D evelop a topic sentence A dd supporting ideas R eject arguments for the other side E nd with a conclusion
Go 4 It...NOW	G oal statement (topic sentence) O bjectives (4 of them, supporting details) I dentify a T imeline	N ame topic O rders details, W rap it up and restate topic.
Self-monitoring	Three step process for self-monitoring and recording writing output	
Reading Strategy		
RAP	R ead the paragraph A sk what is the main idea and two details P ut it in your own words	
TWA	T hink before Reading think W hile reading think A fter reading	

Figure 1. Mnemonics. This is a description of each mnemonic identified in the literature reviews.

CHAPTER 3

METHODS

Participants

The participants in this study include six high school students with special education eligibility (four students with ASD, one student with SLD, and one with EBD and OHI). Prerequisites for participation in this study included student ability to: a) read at or above fifth grade level; b) write a complete sentence including subject and verb, capitalization and end punctuation; c) count and write all numbers; d) remain on-task for 30 minutes. Student's whose attendance records exceeded eight days each semester were not included in the study. To identify participants, the principal investigator met with the high school's special education department chair and special education academic support teachers. The team identified all students who could benefit from an intensive writing intervention and/or perspective-taking instruction, met the prerequisite criteria, and had flexible scheduling and an IEP requirement to be in a study skill class. A request to conduct research was submitted to the University of Georgia Institutional Review Board (IRB) for Research Involving Human Subjects and the county school district. The county school district approved the research pending IRB approval. After IRB approval was granted, the researcher requested parental consent and student assent (see forms in Appendix A). With this approval, the researcher reviewed the records of each prospective student to confirm program requirements were met. The researcher noted student's eligibility, academic achievement, IQ scores, IEP goals and accommodations, and school attendance. Table 6 presents these student demographics.

Liam was an 11th grade Hispanic male with a dual diagnosis of ASD and written language disorder (WLD). His special education services included 90 minute per day with direct instruction in a study skills course, 90 minutes of collaborative instruction in American Government. The Kaufman Brief Intelligence (KBIT; Kaufman & Kaufman, 1983) test was administered to Liam in August of 2004 resulting in a Vocabulary score (verbal ability) in the first percentile (SS-65) and Matrices score (nonverbal ability) in the 32nd percentile (SS-93). Liam scored in the mild to moderate range on the Childhood Autism Rating scale (CARS; Schopler, Reiehler, & Roehen Renner, 1986) and with a standard score of 108 by parents and 88 by his teacher, the Gilliam Autism Rating Scale (GARS; Gilliam, 1995) indicates that he is in range of probability of autism. Combined with adaptive behavior scores in the low average to below average range, Liam was found eligible for services under the category of ASD and WLD. Liam struggles with academics with a weakness in communication and writing ability.

Matt was an African American 12th grade male student receiving 90 minutes per day direct special education instruction in a study skills class for his specific learning disability. Matt was served as a young student under eligibility of intellectual disability but was dismissed in 2004. He was referred to special education and evaluated again in March of 2010. The Differential Ability Scale 2nd Edition (DAS-II; Elliot, 2006) was administered to analyze his learning abilities indicating his verbal reasoning, nonverbal reasoning, and spatial ability scores fell in the very low range (SS-66, 64, and 56 respectively) and his General Conceptual Ability (GCA) was also in the very low range (SS-56). However, Matt's adaptive behavior was in the average range with no notable strengths or weaknesses (Adaptive Behavior Assessment System – 2nd Edition SS-96; Harrison & Oakland, 2003). Matt was found eligible for specific learning disability. Matt struggled in all academic areas with a particular weakness in written expression.

Jeff was a multiracial male student in the 12th grade with ASD. He received 90 minutes per day receiving direct special education services in a study skills class and 180 minutes per day in collaborative setting for academics. In September of 1999, Jeff was assessed with the Wechsler Intelligence Scale for Children, 3rd Edition (WISC-III; Wechsler, 1986) revealing a full scale IQ in the low average range (SS-82). Specifically, Jeff's verbal ability was borderline while his performance ability ranged from low average to average (SS-78 and 90 respectively). Jeff scored in the mild to moderate range on the CARS and a standard score of 83, the GARS indicating that he was in the low range of probability of autism. However, combined with evidence of self-stimulatory behaviors, delayed echolalia, and significant behavioral differences on the Behavior Assessment System for Children (BASC; Reynolds, C. R. & Kamphaus, R. W., 1998), Jeff was found eligible for ASD. Jeff continued to struggle with academics due to weakness in writing ability and behavior and attention difficulties.

Tom was a male African American in the 11th grade receiving 90 minutes of direct instruction for EBD and OHI for AD/HD. In October of 2008, Tom was evaluated with the Woodcock-Johnson III Test of Cognitive Abilities (WJ III-cog.; Woodcock & Johnson, 1989) scoring in the average to low average range across all cognitive factors (GIA SS-88) except processing speed which was in the below average range (SS-75). In 2004, Tom scored in the average range (Composite SS-107) on the Stanford Binet (Roid, 2003). Results of the BASC-2 provided further evidence of clinically significant problems as indicated on the behavior symptoms index. Tom exhibited a number emotionally based behaviors of sufficient duration, frequency, and intensity that interfere significantly with his educational performance. In addition, Tom had a transition goal to pursue his interest related to a career in writing although his written expression scores did fall in the low average range.

Brandon was a 12th grade African American male student with a diagnosis of ASD. He has a one-on-one paraprofessional at all times along with 180 minutes per day in collaborative academic instruction and 90 minutes of direct instruction in study skills. In March of 2010, Brandon scored in the average range on the Abbreviated Battery Intelligence Quotient (ABIQ; Roid, 2006) with a standard score of 10 on Vocabulary subtest and 12 on Matrices. In 2007, however, Brandon scored in the below average range on the WISC-IV (SS-79; Wechsler, 2003) with a notable discrepancy between a Verbal Comprehension Index score in the borderline range and Perceptual Reasoning Index score in the average range. On assessments for autism, Brandon fell in the mild to moderate range on the CARS and his score of 92 on the GARS indicating that he was in the range of probability of autism. Based on his high levels of self-stimulatory behavior, difficulty with pragmatic language, excessive delayed echolalia, and poor inhibition and attention, he was found eligible for services for autism. Brandon was observed to think very literally and concretely with little flexibility. He has difficulty with organization and performs more poorly in academic classes when critical and inferential thinking is required.

Jack was a male African American student in the 12th grade receiving services 180 minutes per day in the collaborative setting and 90 minutes per day with direct services in study skills class. Jack's GCA on the DAS-II fell in the low to below average range (SS-80) with his verbal, nonverbal reasoning, and spatial ability scores all in the low to below average range (SS-81, 84, and 79 respectively). Jack scored in the mild to moderate range on the CARS and the GARS results indicated that he is in the low range of probability of autism (SS-80). However, coupled with a borderline score in social, communication, and functional academics (ABAS-II; SS-4, 5, and 6 respectively) and significant problems with atypical/withdrawal behavior, anxiety

and stereotypic behavior (BASC-2) he was found eligible for ASD. Jack struggles academically with organization, fluency and inferential understanding of content.

Settings and Arrangements

This study was conducted during spring semester in a mid-sized public high school serving 1533 students in grades 9 through 12 in a southeastern state. It was a Title I school because greater than 49% (74%) of the students were eligible for free or reduced lunch. The school had 79% minority students, 13% English Language Learners, and 15% students served special education. All phases of the intervention occurred in the same classroom (25 feet x 25 feet) at the high school. It included two teacher desks with laptop computers and instructional materials not intended for student use. Additionally, there were two bookshelves with a variety of textbooks and novels and five desktop computers for student use. The teacher arranged twelve student desks in rows facing a whiteboard with an attached SmartBoard. The intervention was delivered to two classes taught by the same teacher. Dyads were determined by the class period in which participants were enrolled. One class (10:10 to 11:46 daily) included two dyads and the second class (12:20 to 1:52) included the third dyad. The two randomly paired dyads formed in the first class. The order of intervention was determined randomly.

The researcher provided strategy instruction to each dyad in a small group setting. The first class included six students broken down into two groups of three. Each of these included a dyad. The second class included six students with one dyad under observation and data collection included. The researcher was trained on SRSD model of instruction in a 5-semester-hour course on written language disorders. She had experience using SRSD model of instruction as a classroom teacher and in previous research.

Materials

Probe materials. During writing probe sessions, student were provided with pencils, lined paper, and a writing prompt. The researcher used twenty essay prompts for each genre (expository and persuasive) throughout the study. Essay prompts encouraged an on-demand writing sample. Prompts had two parts, the writing situation (topic) and directions for writing. They were presented within a framework to engage student's interest by presenting enough information to an uninformed student and providing a realistic context for examining the issue (Brigman, Brooks, Kirkland, Rawlston, & Taylor, 2001). Appendix B provides a list of the prompts for this research study. In addition to the prompts, the instructor will use a timer to determine planning duration and writing duration.

The researcher was unable to control for interest level or difficulty across prompts. However, prior to beginning the study, a list of all prompts were presented orally and visually to students and they were asked to rate their interest on the topic using a Likert scale. This information can be used to evaluate the interest of individual writing prompts across students for some indication that there was interest by some students across the topics.

Instructional materials. During strategy instruction, the teacher followed a sequence of lesson plans and marked off each step as it was complete. A second observer listened to an audio recording to ensure fidelity of treatment during 33% of instructional sessions across each dyad and behavior (Appendices C, D, & E). The two check sheets were compared for agreement. The instructor used sample essays to serve as models for both good and bad examples of writing. Students received a three-ring binder containing all materials during instruction for SRSD instruction and served as a portfolio of writing samples by the student. Materials for SRSD instruction were kept in the binder include a) visual reminders of the strategy mnemonic

(Appendices F and G); b) copies of a graphic organizers to facilitate planning (Appendices H and I); c) notebook paper; d) a student created list of transition words to use in practice essays; e) a form for recording self-statements (see Appendix J); f) instructions on how to self-graph (see Appendix K); and g) graph paper.

Response Definitions and Data Collection

The dependent measures for both expository and persuasive writing strategies were number of words, number of functional elements, and quality score. Each dependent measure was graphed. However, number of functional elements was the primary dependent measure driving data-based decisions. Additional data were collected on number of transition words, duration of planning, duration of essay writing, and number of instructional sessions to criterion. The researcher collected data during all experimental conditions, baseline, strategy instruction, post-instruction, and maintenance. See Appendix L for data collection sheet.

Number of functional elements. Number of functional essay elements was defined as the total number of premises, reasons, counterargument, elaborations, and conclusions (Graham & Harris, 1989). Premises were defined as sentences related to the topic giving information only. These premises could define the problem and provide the reader with background information or examples. Reasons were sentences that supported or defended the position taken on the topic. Counterarguments were statements that identified the opposing position. Elaborations were defined as explanations, examples or support sentences based on a reason. For persuasive essays, elaborations were defined as explanations or examples that elaborate on a reason or opposing position. Conclusions were defined as sentences that summarize or rephrase previous ideas in the essay or information ending the essay to entice or entertain the reader based on the topic.

Number of functional essay elements was calculated by counting within the essay. Nonfunctional elements did not pertain to the topic and were scored.

Quality. Analytic quality scoring is criterion-referenced assessment where the writing sample is compared against several predetermined traits (Espin, Weissenburger, & Benson, 2004). 6+1 Trait[®] Writing is an analytical model for assessing and teaching writing developed by Education Northwest (2010). This quality scoring model describes seven key characteristics that are found in quality essays: a) ideas, b) organization, c) word choice, d) voice, e) sentence fluency, f) conventions, and g) presentation. For the purposes of this study as a planning and text structure intervention, the first five characteristics were used to evaluate the essay quality. Students were not instructed nor given time to revise essays or consider the conventions or presentation. Certainly instruction on these traits would be a next step as described in the 6+1 Trait[®] Writing curriculum manual but not relevant to this study. According to Culham (2003), the key piece of an analytic quality scoring system is you can examine the traits separately, and then insert them back into the larger picture. It can be very useful, for instructional purposes, to look at a few traits in isolation as students are learning to recognize and identify what they see in their work. According to the developers, the 6+1 Trait[®] model is designed to provide a reliable quality measure for any genre of writing, e.g., descriptive, narrative, expository or informational, business, and persuasive (Culham). Appendix M is a model of the scoring rubric. Each trait (ideas, organization, voice, word choice, and sentence fluency) is scored separately based on guidance of the scoring guide (rubric) on a scale from 1 to 5 with a combined score ranging from 5 to 25. The sixth trait, conventions, was not evaluated in this study because students were not receiving instruction on conventions or revision. This would, however, be the next step in the process of using the 6+1 Trait[®] curriculum. A particular advantage of using the 6+1 Trait[®] rubric

was to isolate traits related to the strategy instruction and increased perspective-taking (i.e., ideas, organization, and voice) as a result of instruction (Gregg, 2009).

Both the instructor and a graduate assistant calculated quality scores for each essay. Training was conducted prior to the study for producing quality scores of essays to ensure accuracy and reliability. To ensure reliable quality scoring, both scorers reviewed a variety of anchor papers (sample scored essays that represent a wide range of scores) as controlled practice of scoring. During this training, the two scorers discussed disagreements until differences were resolved. Criteria for completing training was independent practice with 80% exact agreement and 95% agreement within one point. This was achieved after six hours of training. For any trait scores differing by more than 1 point, a third rater provided a quality score for the essay. The third rater was experienced using the 6+1 trait analytic scoring method in the classroom. She was trained with the same procedures as the first two raters by the primary researcher with the same criteria for completion. This took approximately two hours. This new score was averaged into the original two scores. Mean scores were reported.

Number of words written. Total number of words written was defined as the number of written words representing a spoken word regardless of spelling (Graham & Harris, 1989). The researcher and graduate assistant typed each essay into Microsoft® Word 2007 preserving all errors (MacArthur & Lembo, 2009) to control for an influence by handwriting on each dependent measure score. The word processing tool, word count, determined the number of words written to ensure accuracy and consistency.

Duration of planning and writing. Duration of planning was the length of time between teacher providing materials and writing prompt to a student beginning to write draft on paper provided. After students were provided materials and orally read the prompt, they were

given the direction to start with planning and raise their hand when finished planning. The instructor recorded the time from providing the direction to the student raising his/her hand. Duration of essay writing was recorded as the length of time between students beginning to draft the essay on notebook paper to giving the essay to the teacher.

Interobserver agreement. Without reliable measurement of the dependent variable, confidence in the experimental findings is lost regardless of a stringent research design (Gast, 2010). To ensure that data are being collected reliably, interobserver agreement (IOA) checks for agreement were conducted. Each essay was typed twice, once by the researcher and again by a graduate assistant using Microsoft® Word 2007. The word processing tool, word count, determined the number of words written to ensure accuracy and consistency. IOA on number of functional elements were collected for 33% of all sessions, at least once per condition throughout the investigation. A graduate student who was naive of the details of the research received a two hour training to ensure accuracy in scoring each measure. To train, anchor essays were scored by the independent observer and compared to the data of the researcher through controlled and independent practice. Throughout these trials, differences in data were resolved with discussion. The observer and researcher continued trials until independent practice criterion of 90% agreement for number of elements. The point-by-point method of agreement was used to determine agreement calculated as the number of agreements divided by the number of agreements plus disagreements and the resulting quotient multiplied by 100 for each writing sample.

General Procedures

Strategy instruction to the group was teacher directed from the front of the classroom using the SmartBoard and individual student practice was supported as the instructor was

available for assistance during individual work time. The researcher used SRSD model of writing instruction to teach both expository and persuasive essays. The six stages of SRSD model of instruction (Figure 2) were implemented as they related to IBC plus Statement PIE and STOP & DARE. These six stages of SRSD are fluid from day to day allowing students enough time to be exposed to and practice each piece of the SRSD model. Students had strategy instruction for approximately 45 minutes a day until mastery criteria was met. Strategy instruction ranged from five to eight days depending on individual differences.

Probe, post-instruction, maintenance, and generalization to another teacher probe sessions required students to sit and work independently. Participants were required to follow the school-wide behavior plan or behavior intervention plan (BIP) identified by the IEP. The classroom teacher used student participation and permanent products for class grades at her discretion. Students were informed that all essays will be compiled into a portfolio for them to keep after the study. No other contingencies were in place.

Experimental Design

A multiple probe design across dyads and multiple probe design across behaviors (Gast & Ledford, 2010b) was used to investigate the effects of the writing strategy instruction package on high school students struggling with writing. This combination design addresses limitations of each design individually, multiple probe design across dyads and multiple probe design across behaviors. Through single subject research methodology, students within each dyad served as their own control. In addition to showing individual data paths, single subject research methodology evaluated threats to internal validity. The multiple probe across dyads design permitted the evaluation of the functional relation through the time-lagged implementation of the independent variable (SRSD model of instruction) across three tiers of dyads. In addition, this

study included a different mnemonic to represent text structure to elicit different behaviors while writing expository and persuasive essays. Each dyad was provided with pre-intervention probe condition, followed by instruction on both writing expository essays and then persuasive essays, and post-strategy strategy instruction in a time-lagged fashion. The primary design for this study was the multiple probe across three dyads because staggering interventions for each dyad met minimum requirements for direct inter-subject replication. A limitation to the multiple probe across dyads design is lack of intra-subject direct replication. Although multiple probe design across two writing behaviors did not meet the required minimum tiers to demonstrate experimental control, it did allow for some intra-subject direct replication. It was anticipated that experimental control could be threatened in this study if co-variation occurred across dyads or behaviors (Gast & Ledford, 2010a).

Data on the dependent variables are important because they drive condition change decisions. Number of functional essay elements was the primary dependent variable upon which data based decisions were made. One such critical decision was when to introduce the independent variable. Appropriately staggering introduction of the independent variable required waiting until both students in the dyad had stable data and students in the instructional condition reached criterion, providing the most stringent procedure for evaluating threats to internal validity such as testing, history, and maturation. Using probe sessions addressed the delicate balance of being conscientious of student time spent in pre-intervention condition while evaluating threats to internal validity due to instrumentation.

Data were collected, graphed and analyzed daily throughout the project allowing for individual evaluation and analysis (Gast & Spriggs, 2010, p. 200). The researcher used visual analysis to evaluate trends and levels both within and across conditions. To determine the data

trend, the researcher used a split-middle method of visual analysis by determining the intersection of each half of the data's mid-rate and mid-session data and connecting the points. Additionally, the researcher evaluated level stability within each condition by determining if 80% of data points fall within a 20% range of the median data point and placing this envelope over the trend line to determine trend stability. Data between adjacent conditions were evaluated by identifying relative level change. Change in trend direction was evaluated by comparing trend split-middle results between the two adjacent conditions. Due to "problems of data independence, sample size, normality, and homogeneity" in single subject research, Scruggs, Mastropieri, and Casto (1987, p. 26) suggest that nonparametric considerations be employed to evaluate intervention effectiveness. Percentage of non-overlapping data point values (PND) can provide a measurement of treatment effectiveness if data do not display inappropriate baseline trends or floor or ceiling effects (Scruggs et al.). The researcher calculated PND in this study by dividing the number of points in the post-instruction condition that fall outside the range of the baseline by the total number of data points in the second condition multiplied by 100. PND can range from zero – 100% with higher PND (> 90 %) indicating high treatment effect and low PND (< 50%) indicating an ineffective treatment (Scruggs et al., as cited in Campbell & Herzinger, 2010).

The researcher randomly selected the dyads for order of intervention. Prior to strategy instruction, an expository probe writing session was collected for each participant. In addition, Dyad 1 participated in one persuasive essay baseline probe sessions. Dyad 1 continued to participate in expository probe sessions for a minimum of three sessions and until data were stable. When data were stable for Dyad 1, expository strategy instruction began for that dyad. After each student in Dyad 1 met criterion in expository writing strategy instruction, post-

expository strategy instruction writing session data were collected for three consecutive sessions. Using the same writing prompts, Dyad 2 had expository probe sessions for a minimum of three consecutive sessions and until stable before beginning SRSD instruction on expository writing. After each student in Dyad 2 met criterion in expository writing strategy instruction, post-strategy instruction writing data were collected for three consecutive sessions. Using the same writing prompts as Dyad 2, Dyad 3 participated in pre-strategy probe condition for expository writing for a minimum of three consecutive sessions and until stable. Corresponding strategy instruction began for Dyad 3 and after criterion was met, three sessions of post-strategy instruction data were collected.

Once criterion was met for expository essay writing for Dyad 1, persuasive baseline probe sessions continued for Dyad 1 for a minimum of three consecutive sessions and until stable. When persuasive essay probe data were stable for Dyad 1, SRSD persuasive writing instruction began. After each student in Dyad 1 met criterion in persuasive writing strategy, post-strategy instruction writing data were collected for three consecutive sessions for Dyad 1 while using the same writing prompts to collect probe session data for Dyad 2 for a minimum of three consecutive sessions and until stable. This indicated the point for SRSD persuasive writing instruction to begin. Post-strategy data were collected for Dyad 2 after strategy instruction criterion was met. Dyad 3 was given the same writing prompts for probe data collection. Lastly, when persuasive probe session data were stable for Dyad 3, strategy instruction began. After each student in Dyad 3 met criterion in persuasive writing strategy post-strategy instruction writing session data were collected for three consecutive sessions.

To help determine if SRSD instruction was durable over time, the researcher collected data on dependent variables after a student met criterion at approximately four to six--week

intervals. Once the functional relation and internal validity of the intervention were established, the researcher addressed external validity and collected data to determine to what variables the change could be generalized (Campbell & Stanley, 1963). The multiple probe across behaviors, as described, was a test for generalization of expository strategy instruction on quality and content of essays written in different genres (specifically persuasive essays). Data that remain low and stable for persuasive writing after expository writing strategy instruction provide evidence of the independence of the two writing genres. If an increasing trend and/or level in persuasive essay quality after strategy instruction on expository essays indicate the effects of SRSD have generalized to persuasive writing.

Instructional Procedures

Pre-intervention procedures. Before beginning the research, we surveyed the participants on their interest in writing for each selected topic. They were provided a list of each topic both orally and written. For each topic, they were asked to rate the topic on a Likert scale with 1 being the lowest score indicating “Not Preferred Topic”, 3 indicating an “Average Topic”, and the highest score of 5 indicating “Great Topic”. Students participating in this study had no prior exposure to the researcher; however, participants had exposure to writing instruction prior to the study. To ensure that all students had a common starting point for understanding what an essay was, the instructor provided general guidelines for writing an essay drawn from the Georgia Department of Education manual for the high school writing test (Brigman et al., 2001) prior to beginning data collection. A description of what makes a successful essay was orally and visually presented. This includes instructing students that successful essays are consistently focused on the assigned topic, persuasive purpose, and audience. They have an effective introduction, body, and conclusion and demonstrate a well-developed and valid writer’s position.

Students were told that when writing they should present supporting ideas that were fully elaborated with specific examples and details. Appendix C provides an outline of this presentation for procedural fidelity.

Probe session procedures. The purpose of pre-strategy probe sessions was to determine the writing performance of participants prior to SRSD instruction on the writing. One of the 20 predetermined writing topics were randomly selected and presented orally and in writing to each student. Students were given the entire class period (90 minutes) to plan and write their essay. The instructor told students to respond to the prompt to the best of their ability and express themselves freely. They were told to start by planning and raise their hand when ready to start drafting the essay. They were also instructed to turn the paper in to the instructor immediately after finishing the essay. No instructions on organization, length, or inclusion of functional elements were provided. No behavioral contingencies were in effect. The researcher provided students with social reinforcement upon completion of the essay by saying, “Great! You completed your essay!” or “Thanks for your effort!” Probe data were collected until stability is achieved over a minimum of three consecutive probe sessions before the dyad began SRSD instruction.

SRSD for expository writing instructional procedures. Writing strategy instruction followed the sequence outlined by Graham and Harris (2005) for SRSD with IBC (Introduction, Body, Conclusion) plus Statement PIE (Proof, Information, Examples; Englert & Lichter, 1982) for expository essay writing. Appendix D is the procedural checklist to be followed by the instructor.

Discuss it. Students were told that they were going to learn a new writing trick to help write informational essays, also called *expository* essays. It was explained that these essays are

the type that tell a reader what you know and think about a topic. The instructors facilitated a conversation about the words expository and essay to be sure they made sense to students.

Students were then presented with a visual of the mnemonic *IBC* as the trick to remember the

parts a good essay; a) Introduction, b) Body, and c) Conclusion. The instructor provided an

overview and rationale of each step in *IBC* and explained new terminology. Students were then

presented with a visual of the mnemonic, *Statement PIE*, as a “trick” to remember what to put in

each body paragraph. For a good essay, students needed to understand that a body has three

Statement *PIES*. Students were told that the statement is the main idea or topic of a paragraph.

The instructor facilitated a discussion of attributes of statements to help students become better at

writing meaningful statements. Statements often dealt with a) the parts of an object or event, b)

actions performed on a specific object or event, c) a chronological sequence or series of events,

or d) a problem characterizing idea (Englert & Lichter, 1982). The *PIE* was described as all of

the pieces of a *PIE* to make it whole and lead others to believe your statement (Proof,

Information, and Examples) to support the statement.

In addition, the instructor explicitly directed the students to consider perspective taking in

the context of popular persuasive writing audiences (e.g. school principal, parents, editor of a

newspaper, elderly community members). To elicit perspective taking, the instructor taught

students to “store information about others” and make “smart guesses” as described in the

curriculum by Winner (2007). A picture depicting a human body with a vertical line splitting the

body in two represented “the thoughts, interests, and experience of an individual” as the right

half of a person. The left half of the person was devoted to files of information on others that

could use to make guesses about their perspectives on topics. A file folder (similar to one that is

used as an icon on a computer) was depicted in the head of the body. After a discussion of the

thoughts, interests, and experiences of individuals such as school principals, parents, and other adults in the community, students filled in information on the body drawing. This product was kept in the notebook and used again during the model it stage to facilitate students suspending their judgment to understand both sides of the argument (Appendix R).

Develop background knowledge. During the second phase of SRSD, students learned what makes a good expository essay. The instructor facilitated the discussion to be sure students understand that a good essay explains the topic to a reader, makes the reader believe, and good expository essays make sense and have several parts. The instructor discussed the parts found in a good expository essay, using Statement PIE as a guide, and introduced transition words as words that provide smooth changes from one idea to another (e.g., first, second, also, another reason, etc.). The group brainstormed transition words and created their own list of transition words they preferred to use when writing essays. During this phase of instruction, two self-regulation strategies were introduced. Students were presented with the idea of self-management. It was defined as a management strategy designed to teach students to engage in actions that change or maintain a particular behavior. In this case, the behavior was writing good essays. Students were provided directions on how to count and self-graph the number of elements in an essay while the instructor modeled and verbalized how to graph number of functional elements. The instructor provided students their own probe essays and they practiced graphing the number of functional essay elements. In addition to self-management, goal setting was a second self-regulatory behavior discussed in this phase of instruction. Students considered current probe performance and were encouraged to set a goal of 50% increase at minimum and commit to the program.

Model it. To model the strategy use, the instructor provided each student with the strategy organizer and presented one on the SmartBoard while she modeled the strategy. The instructor modeled by writing an essay while verbalizing the process as if “thinking out loud.” Two more self-regulatory behaviors were introduced in this phase, self-instruction and self-statements. Self-instruction was described as what the students are to think as they use the strategy to guide them through their planning and writing. Self-statements were described as encouraging statements to say to one’s self to think of good ideas while planning, to motivate while working, and to check work. The instructor facilitated a discussion of what writers say to themselves during the writing process and how to make that productive. During the instructor modeling, she verbalized self-instructions and self-statements encouraging students to do so silently while engaging in the writing process. The students were encouraged to record their preferred self-statements for future use.

Memorize it. Through a number of short activities, the students memorized the parts of the strategy. The students were allowed to paraphrase the steps of the strategy as long as the meaning remained. The students also memorized at least one self-statement from each section of their own generated list.

Support it. To support learning and use of the strategy, the instructor and students jointly practiced. Students had the strategy visual and graphic organizer available to them during this phase. Sample essays, both good and poor quality, were used to backward plan (take information from the essay and write into the graphic organizer), and evaluate for completeness, use of transition words and meeting the qualities of a good essay. In addition, the instructor provided students with writing prompts and asked them to practice the strategy. The instructor directed and monitored the process while the students wrote the essays (Graham & Harris, 1989).

Independent performance. Independent performance required that the students practice writing two or three essays using the strategy and self-regulatory strategies. The materials were made available to the students at first, but were faded once students made a 50% increase of functional elements over probe data. Students were then required to independently write an essay without materials. Once students meet the criteria of 50% increase in functional elements over probe mean data without materials, strategy instruction is complete.

SRSD for persuasive writing instructional procedures. Writing strategy instruction followed the sequence outlined by Graham and Harris (2005) for SRSD with STOP (Suspend judgment, Take a side, Organize your ideas, Plan more as you write) & DARE (Develop your topic paragraph, Add supporting ideas, Reject the argument from the other side, End with a conclusion; De La Paz, 2001) for persuasive essay writing. Appendix E provides a detailed procedure checklist.

Discuss it. Students were told that they are going to learn a new writing trick to help them write opinion essays, also called *persuasive* essays. Students were told that these essays are the type that tells a reader what you know and think about a topic. The instructor facilitated a conversation about the words persuasive and essays to be sure they made sense to the students. Students then were presented with a visual of the mnemonic DARE as the “trick” to remember the four parts of writing a persuasive essay, each as at least one paragraph. The instructor provided an overview and rationale of each step in DARE and explained new terminology. The instructor then presented STOP visual and explained that this strategy reminds students to stop, reflect, and plan before writing a persuasive essay. It requires the students to: a) Suspend their judgment to get ideas for both sides of the argument, b) Take a side, c) Organize ideas, and d) Plan more as they write.

In addition, the instructor explicitly directed the students to consider perspective taking in the context of popular persuasive writing audiences (e.g. school principal, parents, editor of a newspaper, elderly community members). To elicit perspective taking, the instructor taught students to “store information about others” and make “smart guesses” as described in the curriculum by Winner (2007). A picture depicting a human body with a vertical line splitting the body in two represented “the thoughts, interests, and experience of an individual” as the right half of a person. The left half of the person was devoted to files of information on others that could use to make guesses about their perspectives on topics. A file folder (similar to one that is used as an icon on a computer) was depicted in the head of the body. After a discussion of the thoughts, interests, and experiences of individuals such as school principals, parents, and other adults in the community, students filled in information on the body drawing. This product was kept in the notebook and used again during the model it stage to facilitate students suspending their judgment to understand both sides of the argument (Appendix R).

Develop background knowledge. During the second phase of SRSD, students learned what makes a good persuasive essay. The instructor facilitated the discussion to be sure students understand that a good essay explains the topic to the reader, make the reader believe, and good persuasive essays make sense and have several parts. The instructor discussed the parts found in a good persuasive essays, using STOP & DARE as a guide, and introduced transition words. The class brainstormed transition words and created their own list of transition words they prefer to use when writing essays. During this phase of instruction, two self-regulation strategies were introduced. Students were exposed to self-management. It was defined as a management strategy designed to teach students to engage in actions that change or maintain a particular behavior. In this case, the behavior was writing good essays. Students were provided directions on how to

count and self-graph the number of elements in an essay while the instructor modeled and verbalized how to graph number of functional elements. The instructor provided students their own probe essays to practice graphing the number of functional essay elements. In addition to self-management, goal setting was the second self-regulatory behavior discussed in this phase of instruction. Students considered probe performance and were encouraged to set a goal of 50% increase at minimum and commit to learning the strategy.

Model it. To model the strategy use, the instructor provided each student with the STOP & DARE organizer and presented one on the SmartBoard while she modeled the strategy by writing an essay while verbalizing the process as if “thinking out loud.” Two more self-regulatory behaviors were introduced in this phase, self-instruction and self-statements. Self-instruction was what the students are to think as they use the strategy to guide them through their planning and writing. Self-statements were described as encouraging statements to say to one’s self to think of good ideas while planning, to motivate while working, and to check work. The instructor facilitated a discussion of what writers say to themselves during the persuasive writing process and how to make that productive. During modeling, the instructor verbalized self-instructions and self-statements encouraging students to do so silently while engaging in the writing process. The students were encouraged to record their preferred self-statements for future use.

Memorize it. Through a number of short activities, the student memorized the parts of STOP & DARE. The students were allowed to paraphrase the steps of the strategy as long as the meaning remains the same. The students also memorized self-statements from each section in their own generated list.

Support it. To support learning and use of the strategy, the instructor and students jointly practiced using the strategy. Students had the STOP & DARE visual and graphic organizer available to them during this phase. Sample persuasive essays, both good and poor quality, were used to backward plan (take information from the essay and write into the graphic organizer), and evaluate for completeness, use of transition words and meeting the qualities of a good essay. In addition, the instructor provided students with writing prompts and asked them to practice the strategy. The instructor directed and monitored the process while the students write the essays (Graham & Harris, 1989).

Independent performance. Independent performance requires that the students practice writing two or three essays using the STOP & DARE strategy and self-regulatory strategies. The materials were made available to the students at first, but were faded once students made a 50% increase of functional elements over mean probe data. Students then were required to independently write a persuasive essay without materials. Once students met the criteria of 50% increase in functional elements over mean probe without materials, strategy instruction was complete.

Post-instruction procedures. Procedures for collecting data after both students in each dyad met mastery criteria for the writing strategy were identical to those of probe sessions. Students were not using SRSD notebooks during writing but scores were available to them to self-graph at the beginning of each class. No behavioral contingencies were in effect and the instructor provided social reinforcement upon completion of the essay regardless of the quality and quantity of the written product. The instructor took post-instruction data for three continuous data points.

Maintenance procedures. Maintenance data were collected for Dyad 1 and 2 at an approximate four-week interval after strategy mastery criteria had been met. Maintenance procedures were identical to those in probe and post-instruction.

Procedural Fidelity

Due to the time intense implementation of independent variables in single subject research methodology, procedural fidelity is of particular importance (Horner et al., 2005). Proper adherence to procedures controls for instrumentation as a threat to internal validity. In accordance with this single subject quality indicator, this study took measures to ensure fidelity of SRSD instruction. General procedures for checking fidelity of treatment include lesson plan check sheets to follow during each SRSD lessons and pre-intervention lessons. The instructor checked off 100% of the SRSD requirements for each behavior across all three dyads. Over one third of the lessons (12/30) and at least once across each behavior for each dyad were observed by a graduate student, using the same lesson plan check sheet, the second observer marked the occurrence of each instructor behavior. Procedural fidelity was calculated by dividing the number of behaviors checked by the instructor for each lesson by the number of independently observed behaviors and multiplying by 100. The instructor implemented the procedures with 97.5% accuracy ranging from 89% - 100%. In addition to fidelity of SRSD lessons, a separate observer checked 27% of probe sessions (at least once during each condition for each dyad) for proper adherence to procedures for administering essay prompts (see Appendix O). An independent observer marked the occurrence and nonoccurrence of each expected behavior during writing probe sessions. This procedural fidelity was calculated by dividing the number of occurrences by the number of expected behaviors multiplied by 100. Agreement was 100%

Social Validity

All students must pass a minimum writing competency test to graduate from high school. It is within the district improvement plan to increase the high school graduate rate, so this intervention is a socially valid skill. Because it is imperative that goals, procedures, and effects of applied research be socially validated (Gast, 2010), social validity of the interventions was also determined through a student and teacher questionnaire. The questionnaire distributed to each student and teacher was in the form of a Likert scale with items evaluating perceptions towards the goal, procedures, and effects of Statement PIE and STOP & DARE on a scale of one to five (see Appendix P).

Table 6

Student Demographics

Name	Gender	Ethnicity	Grade	Services/day	ASD Assessment	IQ	Reading scores 01/11	Other scores/test
Liam LD	Male	Hispanic	11	ASD WLD 90 min DI 90 min CI	CARS 37.5 Mild to Mod GARS 108/88 VABS Communication 78 Daily Living Skills 63 Socialization 83 Motor 51 AB composite 63 N/A	KABC-II (08/04) Nonverbal Index 89 KBIT Voc-65 Matrices-93	WJ-III Achievement Brief Reading SS: 74 (5.6 GE) QRI-V Level Five Comprehension: Instructional (Independent with look-back) Fluency: Poor	VABS (1999) 63 ss
Matt MR	Male	African - American	12	SLD 90 min DI		DAS-II (03/10) GCA 59 Verbal Reasoning 66 NV Reasoning 64 Spatial 56	WJ-III Achievement Brief Reading SS: 73 (5.4 GE) QRI-V Level Five Comprehension: Instructional with look-back Fluency: Poor	ABAS-II 96 ss composite
Jeff JG	Male	Multiracial	12	ASD 90 min DI 180 min CI	CARS Mild -Mod GARS 83 *Self-stem *Delay Echolalia *Inhibition & attention	WISC-III (9/99) FSIQ 82 Verbal 78 Performance 90	WJ-III Achievement Brief Reading SS: 77 (6.1 GE) QRI-V Level Five Comprehension: Instructional (Independent with look-back) Fluency: Poor	BASC-2 Significant Atypicality Attention Learning problems School problems Social Skills
Tom TC	Male	African - American	11	EBD OHI (AD/HD) 90 min DI	N/A	WJ-III Cog. (10/08) Ave to Low Ave. ability Processing Speed Below Average (75)	WJ-III Achievement Brief Reading SS: 87 (8.0 GE) QRI-V Level Five Comprehension: Independent Fluency: Independent	BASC-2 Significant Hyperactive Conduct Prob. Atypicality Withdrawal Adaptability

Name	Gender	Ethnicity	Grade	Services/day	ASD Assessment	IQ	Reading scores 01/11	Other scores/test
Brandon JB	Male	African - American	12	ASD 90 min DI 180 min CI ASD 1:1 para. 90 min DI 180 min CI	CARS Mild -Mod GARS 92 *Self-stem *Delay Echolalia *Inhibition & attention CARS Mild –Mod GARS 80 ABAS-II Communication 5 Functional Academics 6 Social 4	ABIQ (3/10) 106 Vocabulary 10 Matrices 12 WISCIV (11/07) FSIQ 79 VCI- 68 PRI- 92 DAS-II (11/07) GCA 78 Verbal 81 Nonverbal 84 Spatial 79	WJ-III Achievement Brief Reading SS: 92 (9.4 GE) QRI-V Level Five Comprehension: Instructional Fluency: Poor WJ-III Achievement Brief Reading SS: 97 (10.9 GE) QRI-V Level Five Comprehension: Instructional (Independent with look-back) Fluency: Independent	BASC-2 Significant Atypical/Withdrawal Anxiety Stereotypic Beh.

Note: ABAS = Adaptive Behavior Assessment System; AD/HD = Attention Deficit/Hyperactivity Disorder; ASD = Autism Spectrum Disorder; BASC-2 = Behavior Assessment System for Children, 2nd edition; CARS = Childhood Autism Rating Scale; CI= Collaborative Instruction; DAS II = Differential Ability Scale, 2nd Edition; DI = Direct Special Education ; EBD = Emotional/Behavioral Disorder; GARS = Gilliam Autism Rating Scale; KBIT = Kaufman Brief Intelligence Test; OHI = Other Health Impaired; QRI-5 = Qualitative Reading Inventory, 5th Edition; VABS = Vineland Adaptive Behavior Scale; WISC-III = Wechsler intelligence Scale for Children, 3rd Edition; WJ-III Ach. = Woodcock-Johnson Test of Achievement, 3rd edition; WJ-III Cog. = Woodcock-Johnson Test of Cognition, 3rd edition; WLD = Written Language Disorder

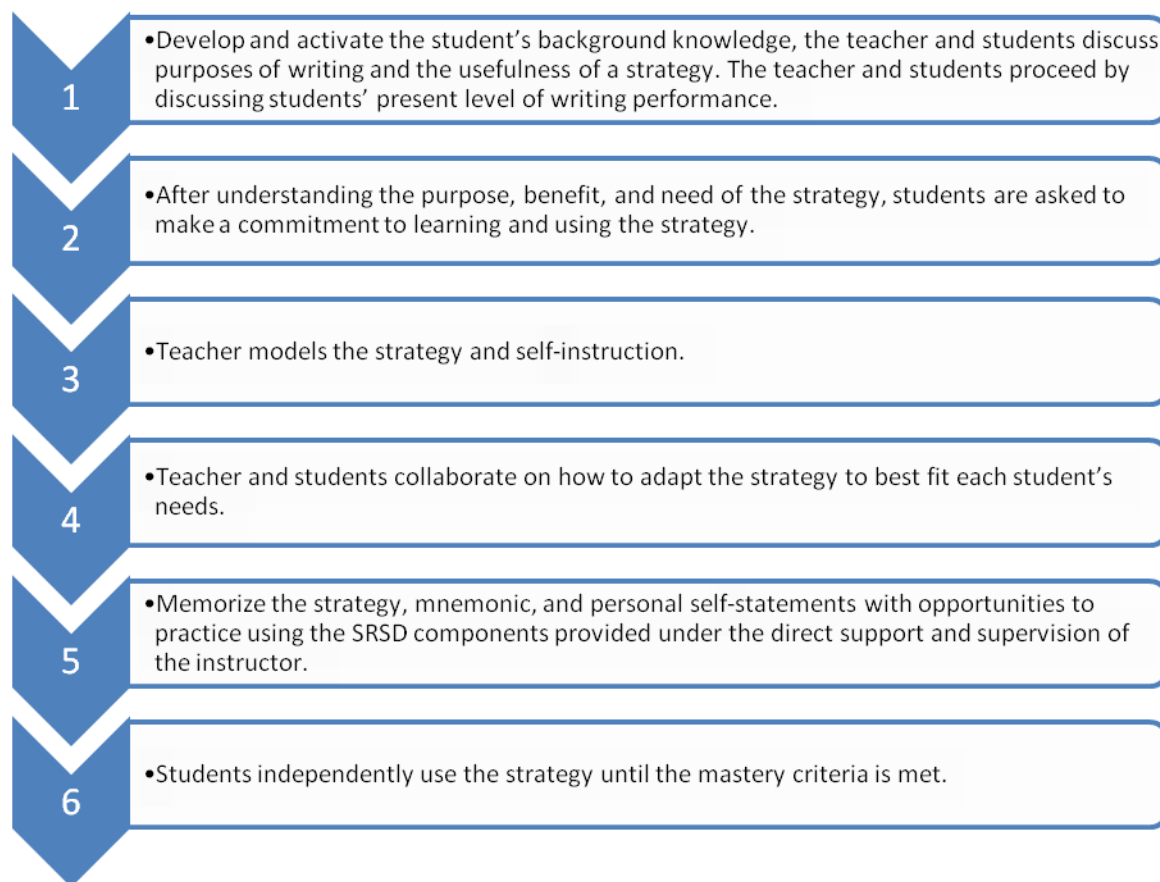


Figure 2. SRSD Phases. This illustrates general SRSD instruction involves six basic sequential phases.

CHAPTER 4

RESULTS

Results are presented separately for expository essay writing and persuasive essay writing, and for each of the dependent variables measured in this study. Students' mean scores (Elements, Quality, Length, and Planning/Writing Duration) on both expository writing samples and persuasive writing samples across each measure are found in Table 7. Figure 3 provides a graphic display of these data for visual comparison across students.

The study was conducted over 16 weeks, however the duration was effected by snow days, teacher furlough days, spring break, mandated statewide assessments, test preparation sessions, field trips, senior activities, and participant absenteeism/suspension. Three dyads of students wrote probe essays, were provided SRSD model of instruction, and produced writing samples in a small group setting (three to eight students/group). The number of sessions necessary to move through the first four stages of SRSD ranged from four to six daily sessions across dyads. IBC Statement PIE required a mean of 4.33 instructional sessions, and STOP & DARE required an average of 5.00 instructional sessions. The number of writing samples produced by students varied across dyads. Initially, students responded to an expository essay prompt and on the following session, students responded to a persuasive essay prompt. Prior to strategy instruction, all dyads required three consecutive sessions of writing expository essays to establish stability. After completing the expository writing program, students began the probe condition to establish a baseline pattern for both level and trend in persuasive essay writing. Dyads 1 and 2 required seven consecutive probe sessions to establish stability, and Dyad 3

needed four consecutive probe sessions to establish stability prior to instruction. All students met criterion with three supported essays during the strategy-instruction condition with the exception of Dyad 2, who wrote four persuasive essays during strategy instruction condition. Dyad 3 was only able to write two strategy-supported essays before the year ended. Each dyad of students that made it to the post-instruction condition wrote three post instruction expository and persuasive essays, however, the school year ended before Dyad 3 met criterion for persuasive essay writing.

Functional Elements

Students' scores on the primary dependent measure, number of functional elements (FE), across dyads are shown for expository writing in Figure 4 and persuasive writing in Figure 5. Figure 6 presents students' FE scores across behaviors for each dyad. A trained graduate student naive of the details of the research scored the number of functional elements for approximately 33% (n=48) of sessions, and at least once per condition for each participant. The resulting IOA for number of functional elements included in the essays was 92%.

Expository writing. All six students made gains in number of expository essay FE from initial probe to post-strategy conditions. Students established stable probe data with mean scores ranging from 1.3-7.0. Descriptively, students were able to stay on topic during initial probe sessions; however, direct topic statements and supporting elements were lacking. Although pre-intervention instruction emphasized that an essay has an on topic introduction, body, and conclusion and is written to make the reader understand, students consistently wrote very little to support and explain the topic to the reader. Each student increased his teacher-supported essay writing scores by 50% by the third strategy instruction writing session. All but one post-strategy FE scores were higher than initial probe condition, with mean scores ranging from 8.7-14.7.

Therefore, the PND was 97%. Scores were maintained after approximately six weeks for Dyads 1 and 2. Maintenance data for Dyad 3 was unable to be collected due to the end of the school year.

Students in Dyad 1, Liam and Matt, exhibited low and stable initial probe performance with a contra-therapeutic trend. Liam's FE ranged from 1-2 (mean= 1.3; median= 1) whereas Matt's FE ranged from 3-5 (mean= 3.5; median= 3). After strategy instruction, students participated in supported practice in which the instructor provided students with writing prompts, organizers, and asked them to practice the strategy. The instructor directed and monitored the process while the students wrote the essays. During this condition, materials and support were gradually and systematically faded. Students were expected to maintain a 50% increase over mean probe performance to begin the independent practice condition. Both Liam and Matt reached criterion in three writing sessions with a decelerating trend as support was withdrawn. Data from the three post-instruction sessions demonstrated a change in expository writing behavior. Liam's post-instruction FE ranged from 9-12 (mean= 10.3; median= 10) whereas Matt's post-instruction FE ranged from 8-10 (mean= 8.7; median= 8). Both Liam and Matt displayed a decrease in relative level but with an accelerating trend, data remained above initial probe condition data. After six weeks, Liam's FE decreased from his post-strategy mean level of 10.3 to 8 FE, but remained above the pre-strategy mean (1.3). Matt maintained his level of FE in his expository essay with 10 FE after six weeks. Generalization was demonstrated by having the special education teacher provide students with a prompt and asked them to write an essay for their end of term final exam. Liam included 10 FE in his essay for another teacher, yet while Matt did not generalize including only 4 FE.

During the post-instruction writing sessions for Dyad 1, initial probe data were collected for students in Dyad 2, Jeff and Tom. Dyad 2 had low, stable zero-celerating data during these three consecutive probe condition sessions. Data ranged from 6-7 FE for Jeff (mean= 6.8; median= 7) and 5-10 FE for Tom (mean= 7.0; median= 6.5). These three consecutive data points were lower for Tom than his initial probe writing session including 10 FE. During the supported writing condition, both Jeff and Tom reached criterion in three writing session with an accelerating trend as support was withdrawn. However, Jeff's data in supported instruction were variable while Tom's data were stable. Three post instruction sessions demonstrated a therapeutic change in expository writing behavior from initial probe condition with increased level and trend. Data ranged from 13-16 post-instruction FE for Jeff (mean= 14.7; median= 15) and 10-12 FE for Tom (mean= 11.5; median= 12). Tom's relative level was lower than the supported writing condition but remained higher than data in the initial probe condition with the exception of one overlapping data point. Follow-up data after six weeks indicate that both Jeff and Tom maintained the ability to include FE by using a higher level than post-instruction (16 FE each). In addition, both Jeff and Tom generalized the skill to a different teacher including 17 and 13 elements respectively on their final exam.

During the post-instruction writing sessions for Dyad 2, initial probe data were collected for students in Dyad 3, Brandon and Jack. Dyad 3 had low stable zero-celerating data during these three consecutive probe condition sessions providing continued support of instructional control. Data ranged from 2-5 FE for Brandon (mean= 3.4; median= 3) and 2-3 FE for Jack (mean= 2.8; median= 3). During the supported writing condition, both Brandon and Jack reached criterion in three writing sessions with an accelerating trend. A break in data resulted from test preparation and administration of the high school graduation test across a 2-week period.

However, Brandon's data in supported instruction was variable while Jack's data were stable. During three post instruction sessions, the students demonstrated a therapeutic change in expository writing behavior from initial probe condition, with increased level and no change in trend. Data ranged from 15-22 post-instruction FE for Brandon (mean= 17.3; median= 15) and 8-11 FE for Jack (mean= 9.3; median= 9). Jack's level at post-instruction was lower than supported instruction but remained above the initial probe performance. Due to time constraints at the end of the semester, maintenance data were not collected for Dyad 3. Brandon did not attend school the last week before graduation and did not take his final exam, which would have provided generalization data. However, Jack generalized the writing skill by including 12 FE, nearly three more than in post-strategy instruction.

A functional relation between SRSD model of instruction for expository writing and inclusion of FE was evaluated by the staggering of interventions for each of the dyads. An abrupt change in level and trend immediately following introduction of strategy instruction indicated that improvement was most likely the result of intervention. Furthermore, the number of FE remained low for each student who had not engaged in expository writing strategy instruction providing affirmation of the consequent. Subsequent replications with the other dyads allow one to conclude that a functional relation exists between SRSD writing instruction and number of FE in essays. There was only one overlap of data points from probe to post-intervention conditions across all dyads.

Persuasive writing. All six students' data levels before persuasive writing SRSD instruction were below that of post-instruction of expository writing behavior ranging from 4.4-10.1. Descriptively, students were able to stay on topic during initial probe sessions as well as generalize elements of expository essays such as making direct topic statements and supporting

elements, but few essays included a counterargument. Only Liam and Jeff mentioned the argument of the intended audience each once but either failed to elaborate on it, provide a solution, or prove it wrong. Each student increased his strategy-supported essay writing scores by 50% over mean probe data by the third strategy instruction writing session. With encouragement to increase his writing score above his previously graphed data, Jeff included 27 FE in his fourth supported essay ending that condition. However, due to Jeff's variable and accelerating trend in initial probe data, no improvement was evident after three strategy-supported essays. Each student made mean gains in the number of FE from pre-strategy instruction to strategy instruction supported essays. Furthermore, the four students who were able to write post-strategy essays maintained the increase from supported essays to the post-strategy condition for the second behavior, persuasive writing with means ranging from 8.3-19. Eight of 12 post-strategy FE scores were higher than initial probe condition; therefore, the PND was 67%.

Students in Dyad 1, Liam and Matt, initially exhibited variable probe performance. Liam's FE ranged from 2-9 (mean= 4.9; median= 5) whereas Matt's FE ranged from 1-9 (mean= 4.4; median= 4). Both Liam and Matt reached criterion (50% increase above initial probe data mean) in three supported writing session. Liam's data displayed a zero-celerating trend while Matt's showed an accelerating therapeutic trend as support was withdrawn. Three post instruction sessions demonstrated a change in persuasive writing behavior. Liam's post-instruction FE ranged from 7-12 (mean= 10.0; median= 11) whereas Matt's post-instruction FE ranged from 7-11 (mean= 8.3; median= 7). During post-instruction condition, Liam's data showed a decelerating trend while Matt's data trend and level remained consistent with strategy-supported essays. After four weeks, Liam's FE decreased from his post-strategy mean level of 10

to 9 FE, but still maintained above the pre-strategy mean of 4.9 FE. Matt maintained his level of including FE in his expository essay with 11 FE after four weeks.

During the post-instruction writing sessions for Dyad 1, probe data were collected for students in Dyad 2, Jeff and Tom. This time-lagged implementation provides an opportunity to verify the prediction of the first behavior if little to no changes was seen in the data paths of the next dyad. In this case, Tom's data began with variability but leveled off and remained stable for the last five pre-strategy probe data points at a level commensurate with the original data point; however, Jeff's data started at a low level but continued a therapeutic trend. Data ranged from 6-17 FE for Jeff (mean= 10.0; median= 12) and 3-11 FE for Tom (mean= 5.8; median= 5). During the supported writing condition, both Jeff and Tom reached criterion in three writing session with stable data, but because the data were not out of the range of the initial probe data trend for Jeff, he engaged in an additional writing session with encouragement of meeting his personal goal. Three post instruction sessions demonstrated a replication of the independent variable's effect for Tom but Jeff's FE remained in the range of pre-instruction probe data. Data ranged from 17-21 post-instruction FE for Jeff (mean= 19.0; median= 17) and 14-16 FE for Tom (mean= 15.0; median= 15).

During the post-instruction writing sessions for Dyad 2, initial probe data were collected for students in Dyad 3, Brandon and Jack. Dyad 3 had low stable zero-celerating data during these three consecutive probe condition sessions providing support of instructional control. Data ranged from 6-9 FE for Brandon (mean= 6.6; median= 3) and 5-6 FE for Jack (mean= 4.6; median= 3). During the supported writing condition, both Brandon and Jack both wrote two essays with mean FE of 13.0 and 10.5 respectively. However, due to the end of the school year

and the fact that Brandon did not attend the last week, no replication of independent variable's effect across behaviors was achieved for this dyad.

Comparison of expository and persuasive essay behavior for FE. Both Liam and Matt's initial persuasive writing probe data were above the initial probe data of expository (3.6 points and .9 FE respectively), however it was still below that of expository post-strategy instruction writing data (5.4 and 3.3 FE below respectively). After strategy support was withdrawn, Liam and Matt both increased mean FE but not to a level higher than expository post-strategy data.

In Dyad 2, Jeff's initial persuasive writing probe data were above the mean data of expository essays by 3.3 FE; however, it was still 4.6 FE below that of post-expository writing data. At the same time, Tom's FE persuasive essay data was 1.2 FE lower than his initial expository probe data. After strategy instruction, Jeff and Tom both demonstrated an increased mean FE to a level higher than expository post-strategy data (increase of 5.3 and 3.7 FE respectively). Unfortunately an accelerating trend of Jeff's initial probe persuasive essay data after instruction on expository writing behavior indicates that instructional control across behaviors was confounded in some way.

Quality

For the purposes of this study as a planning and text structure intervention, five traits were used to evaluate the essay quality: a) ideas, b) organization, c) word choice, d) voice, e) sentence fluency. Each trait was scored separately based on guidance of the scoring guide (rubric) on a scale from 1 to 5 with a combined score ranging from 5 to 25 (see Appendix M). Figure 7 shows the change in mean levels across each trait for each writing behavior for each student. Figure 8 presents students' essay quality scores, across dyads for expository writing

behavior and Figure 9 presents scores on persuasive essay quality. Figure 10 presents data on essay quality across behaviors for each dyad. Both the instructor and a trained graduate assistant scored each essay. For any quality score differing by more than one point, a third rater provided quality score for the essay. Across raters, quality scores were within one point for 97% of the essays while exact matching quality scores occurred with 73% essays. The essay quality scores that differed by more than one point were scored by a third rater. No essays received a score discrepant by more than two points.

Expository writing. Each student made mean gains in quality from initial probe condition to post-instruction on a scale from 5 to 25. Mean probe scores before strategy instruction ranged from 5.4-11.3 points and mean post-instruction quality scores ranged from 8.4 to 20.5 points. Two students made mean gains of greater than seven, three students made gains between 4-5 quality points, but one student, Matt, only made a mean gain of 1.4 from initial probe condition to post-instruction. Due to the high levels of variability in Dyads 2 and 3, three of the 12 post-strategy essays overlapped with initial probe essays indicating a 75% PND. All students increased scores on the traits ideas, organization, and word choice only after intervention (see Figure 7). Only Matt didn't increase scores for voice, and all but Tom increased scores on sentence fluency.

Dyad 1 had very low and stable quality probe data before instruction with Matt's data showing decelerating trend. Expository essay quality scores during initial probe condition ranged from 5-6 (mean=5.4; median=6) for Liam and 6-8 (mean=7.0; median=7) for Matt. Upon strategy instruction, a substantial increase in level for essay quality data occurred with no change in relative trend from initial probe sessions. However, both students in Dyad 1 had an immediate decrease in level on post-instruction essay, but quality data increased over the next post-

instruction sessions. Liam's post-strategy quality score increased, ranging from 10-14 (mean=12.5; median=14) but Matt's quality scores ranged from 7-10 (mean=8.4; median=9) after instruction. Both Dyad 2 and Dyad 3 had variable data before instruction. From initial probe condition to strategy instruction all students had a relative increase in level and trend and no further changes were evident in post-instruction except for Jack whose data had a decelerating trend during post-instruction. Increases in mean quality scores from probe to post-strategy conditions ranged from 4.0-9.8 points. Jeff demonstrated a range of quality scores from 7-15 before instruction (mean=10.1; median=10) increasing of 5.1 points (mean=15.2; median=16; range= 13-16) while Tom's pre-strategy quality scores ranged from 8-14 (mean=11.3; median=11) increasing by 4 mean points (mean=15.3; median=15; range=15-16). Dyad 3 had a mean quality score at initial probe condition around 10. Pre-instruction, Brandon's essay quality scores ranged from 6-15 (mean=10.7; median=11) increasing to a mean of 20.5 (range=20-22; median=20) and Jack's pre-instruction quality scores ranged from 8-15 (mean=10.9; median=11) but post-strategy instruction essay quality increased range from 14-17 (mean=15.6; median=16) with a decelerating trend.

Approximately six weeks after strategy instruction of expository essays writing behavior, a maintenance session took place. All students in Dyad 1 and 2, Liam, Matt, Matt, Jeff, and Tom, improved writing quality score over post-strategy data (16, 10, 19, and 16 respectively). This quality also generalized to a different teacher still above post-strategy data (14, 9, 21, and 18 respectively). Although Brandon was unable to participate in generalization session, Jack generalized his writing quality to a different teacher with a score of 22 out of 25 possible points.

Persuasive writing. Data suggest the possibility of overall improvements in persuasive essay quality, which coincided with the SRSD model of instruction for persuasive writing

behavior. Each student had an increase in essay quality from pre-strategy probe sessions (means ranging from 8.4-15.4) to post strategy (means ranging from 10.2-21.2). However, high levels of variability in quality scores occurred during initial probe condition ending with 5 of the 12 post-strategy essays quality overlapping with initial probe data and a 42% PND.

While Matt's probe performance was variable before instruction ranging between 5 and 10.5 (mean=8.4; median=9.25), Liam's initial probe data had an accelerating trend ranging from 5-14 points (mean=9.2; median=9). However, after strategy support had been withdrawn, both students' persuasive essay quality increased to a mean of 15 (range=13.5-17.0) for Liam and 10.2 (range=8.0-11.5) for Matt. Quality ratings at Dyad 1's 4-week maintenance session remained consistent with post-strategy instruction essay quality. The variable pre-strategy probe performance for both students in Dyad 2 while students in Dyad 1 were concurrently writing post-strategy essays, again indicates possible confounds in that the independent variables could have some generality across writing behaviors, thereby compromising this experiment. Jeff and Tom's mean quality scores did change from 15.4 to 18.2 and 11.9 to 21.5 respectively from pre-strategy to post-strategy conditions. Tom's pre-strategy essay quality scores ranged from 5.5 to 18.5 while Jeff's ranged from 8.0-20.0.

Comparison of expository and persuasive essay behavior for quality. Compared to expository essay quality, even greater levels of variability in quality scores occurred during initial persuasive essay probe condition. Students in Dyad 1 wrote pre-strategy persuasive essays higher in quality than pre-strategy expository essays. Furthermore, Matt's initial persuasive probe essay mean score was equal to his expository post-strategy mean, while Liam's initial persuasive probe essay mean was only 3.3 quality points below his mean expository post-strategy data. However, after strategy support had been withdrawn, both students' persuasive

essay quality increased to a mean of 15.0 for Liam and 10.2 for Matt. Concurrently, persuasive essay quality before strategy instruction was variable for Dyad 2. Jeff's quality before persuasive strategy instruction showed a variable pattern with a mean 5.2 points higher than his expository essay quality. After instruction, data continued to accelerate from a mean of 15.3 to 18.2. Tom, on the other hand, had a persuasive essay mean quality score similar to his mean expository quality and increased over ten quality points after instruction to 21.5 points, much exceeding his expository essay quality. Jack's initial probe performance remained low and stable at a similar level to his pre-strategy expository probe performance while Brandon's initial probe performance was variable and decelerating. No post-strategy data were taken for Dyad 3 due to the end of the school year.

Length

Figures 10 and 11 present student's scores on total words written (TWW) in essays, across dyads and behaviors (expository and persuasive writing respectively). Each essay was typed twice, once by the researcher and again by a graduate assistant using Microsoft® Word 2007. The word processing tool, word count, determined the number of words written to ensure accuracy and consistency. The researcher compared the TWW from each typed version and reconciled any difference between the two by comparing them against the original for each essay.

Expository writing. For all students, the mean length of essays increased after instruction. Pre-strategy instruction essay TWW mean scores ranged from 34.5 to 125.0 while post-instruction mean TWW ranged from 128.0 to 323.0. For the most part, TWW data were stable with the exception of some initial probe data variability and more variable post-instruction data by Jeff. PND was 92% for this dependent measure.

In Dyad 1, Liam, who wrote the shortest pre-strategy essays, nearly tripled the length of his essays with a 271% increase over initial probe essays moving from 34.5 to 128.0 TWW. Matt increased his TWW by only 46% increasing from 98.0 to 143.0 TWW. Not only did Matt have the smallest increase of TWW from pre-strategy to post-strategy instruction condition, but one data point in post-instruction dipped below all initial probe essay TWW resulting in a 67% PND. Jeff and Tom, Dyad 2, had similar initial probe condition TWW at a mean of 85.5 and 88.5 respectively where Jeff increased TWW by 157% to a mean of 219.7 and Tom increased TWW by 75% to a mean of 155.0 TWW. Dyad 3, Brandon and Jack, both made substantial progress in increasing their mean length of essays. Brandon increased from a mean of 125.0 TWW in initial probe condition to 393.0 words post-instruction, a 214% increase while Jack wrote a mean of 64.6 TWW in initial probe condition increasing 223% to a mean of 208.7 words in post-instruction condition. All students except Matt had 100% PND for TWW. The overall PND was 94%.

Persuasive writing. During initial probe sessions, students' mean TWW ranged from 95.5 to 185.2. After persuasive writing instruction, a marked increase in essay length across participants ranging from 180.7 to 280.0. Similar to number of persuasive essay FE, data were low and stable with the exception of an accelerating trend by Jeff. One notable difference is the variability of initial probe TWW data for Brandon, which was unlike his more stable FE data patterns. Due to one very high TWW by each Tom and Jeff that overlapped two of three post-strategy data points; PND was 67%.

Students in Dyad 1, Liam and Matt, made increases of 75% and 45% respectively. Both of these students had persuasive post-strategy means higher than expository post-strategy means. Also, Dyad 1's 4-week maintenance TWW data remained above initial probe TWW data. Jeff

and Tom from Dyad 2 made increases of 70% and 167% TWW from pre-strategy to post-strategy instruction.

Comparison of expository and persuasive essay TWW. Students' TWW at initial probe condition were higher than expository TWW before strategy instruction but still lower than expository post strategy instruction data means. The exception was Tom, who wrote more during initial persuasive probe sessions than after expository essay instruction. All four students' mean persuasive TWW exceeded that of their mean expository essay post-strategy TWW.

Duration

Overall, the time spent engaged in writing tasks increased from initial probe condition to post-strategy instruction (see Figure 14). Across both expository writing and persuasive writing behaviors, only Tom spent time planning on only the first probe. Otherwise, no planning occurred. For the expository writing behavior, four of the students continued to spend time planning before writing after graphic organizers were faded. Tom and Jeff, who did not continue to plan on paper before writing, made substantial improvements in total time spent writing by at least doubling time over mean pre-strategy writing duration data. For the persuasive writing behavior, all students continued to spend some time planning before writing, after the graphic organizer and teacher support was faded. Although Liam and Matt both spent time planning post-strategy essays, their writing duration did not increase over initial probes. However, both Jeff and Tom increased writing duration as well as planning time from pre-strategy to post-strategy conditions.

Motivation

Research shows that topic interest may energize writing, and students who feel more competent will persist in writing (Hidi & McLaren, 1991). To determine that students exhibited

some interest in each of the topics used, they were asked to rate each topic on a Likert scale with 1 being the lowest score indicating “Not Preferred Topic”, 3 indicating an “Average Topic”, and the highest score of 5 indicating “Great Topic”. Mean topic ratings ranged from 2.17 to 4.17.

Individual student mean ratings across all topics ranged from 2.23 to 3.75.

Social Validity

Social validity of the intervention was evaluated through a questionnaire (Appendix P). The social validity teacher questionnaire, comprised of eight questions, was distributed to the students’ special education study skills teacher. The special education teacher observed the intervention and therefore understood the intervention purpose and procedures. Each student rated the program with the student questionnaire (an age appropriate version of the social validity questionnaire). These questions were scored using a Likert scale with ratings of 1 (lowest) to 3 (somewhat) and 5 (highest). Scores greater than 3 indicated a favorable social validity check. The ratings of 2 and 4 were omitted in the student questionnaire to decrease student confusion. Table 10 presents each student’s rating for each of the 6 questionnaire items. Mean scores for each item are given at the bottom of each column and to the right of each row.

The teacher version of the questionnaire had three questions (# 1, 2, and 3) relating to the importance of increasing writing fluency, inclusion of FE, and quality respectively. Ratings of the importance were all 5’s or “very important”. The student questionnaire addressed importance of improving writing length and organization through question number 1 and 2. The mean rating for importance of increasing length ($m=4.33$) was higher than importance of improving organization ($m=3.67$). The teacher questionnaire addressed the appropriateness of procedures for age and academic level of the students was rated as 5, very appropriate, for both. Student questionnaires addressed whether or not they liked the program and liked to graph scores,

receiving mean ratings of 3.67 and 3.0 (somewhat liked) respectively. Question number 4 of the teacher questionnaire related to the motivational factor of student participation in learning due to self-regulation instruction. The teacher rated this with a 4 falling between somewhat motivating and very motivating.

The last two questions on each version of the social validity questionnaire directly evaluated the program's effectiveness of increasing the students' writing. The teacher rated the effect of perspective taking instruction on students' ability to understand the audience as "Very Affected" (5) and the effect of the program on student essay writing in general as "Very Effective" (5) as well. Students rated whether or not they liked the program and if they felt they were better writers as a result of the program with mean scores of 4.67 with everyone but Matt (who scored it as "somewhat") felt that their writing was "definitely" (5) impacted.

Table 7

Student Mean Essay Scores during each Experimental Condition

Expository Writing Measures	Dyad 1									
	Liam					Matt				
	P	SI	PS	M	G	P	SI	PS	M	G
Functional Elements	1.3	13.7	10.3	8	10	3.5	13.0	8.7	9	4
Quality	5.4	13.9	12.5	16	14	7.0	14.7	8.4	10	9
Length	34.5	159.7	127.7	127	157	98.0	127.3	143.0	142	59
Planning	0	17	26	35	-	0	10	14	0	-
Duration	8	30	20	35	-	10	21	7	28	-

Functional Elements	Dyad 2									
	Jeff					Tom				
	P	SI	PS	M	G	P	SI	PS	M	G
Functional Elements	6.8	15.0	14.7	16	17	7.0	12.7	11.3	16	134
Quality	10.1	16.0	15.2	19	21	11.3	14.6	15.3	16	18
Length	85.5	197.7	219.7	158	192	88.5	153.0	155.0	191	155
Planning	0	13	0	20	-	1	11	0	0	-
Duration	16	24	32	50	-	9	21	22	35	-

Functional Elements	Dyad 3									
	Brandon					Jack				
	P	SI	PS	M	G	P	SI	PS	M	G
Functional Elements	3.4	16.7	17.3	-	-	2.8	12.7	9.3	-	12
Quality	10.7	21.0	20.5	-	-	10.9	16.8	15.6	-	22
Length	125.0	320.7	393.0	-	-	64.6	227.0	208.7	-	202
Planning	0	25	11	-	-	0	26	12	-	-
Duration	31	33	45	-	-	16	34	55	-	-

Note: P = Probe, SI = Strategy Instruction, PS = Post-strategy,

Persuasive Writing Measures	Dyad 1							
	Liam				Matt			
	P	SI	PS	M	P	SI	PS	M
Functional Elements	4.9	10.0	10.0	9	4.4	9.3	8.3	11
Quality	9.2	15.3	15.0	14	8.4	12.5	10.2	13
Length	121.1	184.7	212.0	183	124.5	236.3	180.7	192
Planning	0	10	25	22	0	5	5	16
Duration	31	32	33	40	12	20	14	28

Functional Elements	Dyad 2							
	Jeff				Tom			
	P	SI	PS	M	P	SI	PS	M
Functional Elements	10.1	19.3	19.0	-	5.8	16.5	15.0	-
Quality	15.4	18.1	18.2	-	11.9	20.4	21.5	-
Length	164.6	241.3	280.0	-	95.5	238.5	254.7	-
Planning	0	11	15	-	0	13	11	-
Duration	30	46	55	-	17	50	38	-

Functional Elements	Dyad 3							
	Brandon				Jack			
	P	SI	PS	M	P	SI	PS	M
Functional Elements	6.6	13.0	-	-	4.6	10.5	-	-
Quality	14.3	17.3	-	-	11.5	18.5	-	-
Length	185.2	271.0	-	-	124.4	219.5	-	-
Planning	0	21	-	-	0	18	-	-
Duration	41	58	-	-	43	51	-	-

M = Maintenance, G = Generalization

Table 8

Social Validity Student Ratings

#	Question	Leo	Matt	Tom	Jeff	Brandon	Jack	Mean
1	It is important for me to write more organized essays.	5	5	5	3	3	5	4.33
2	It is important for me to understand how other people think so I can improve my writing.	5	3	5	3	3	3	3.67
3	I liked this writing program.	5	3	5	3	3	3	3.67
4	I liked graphing my scores each day.	5	1	5	1	1	5	3.00
5	I support my opinion in an essay better now.	5	3	5	5	5	5	4.67
6	I learned to write better essays.	5	3	5	5	5	5	4.67
	Mean	5.00	3.00	5.00	3.33	3.33	4.33	4.00

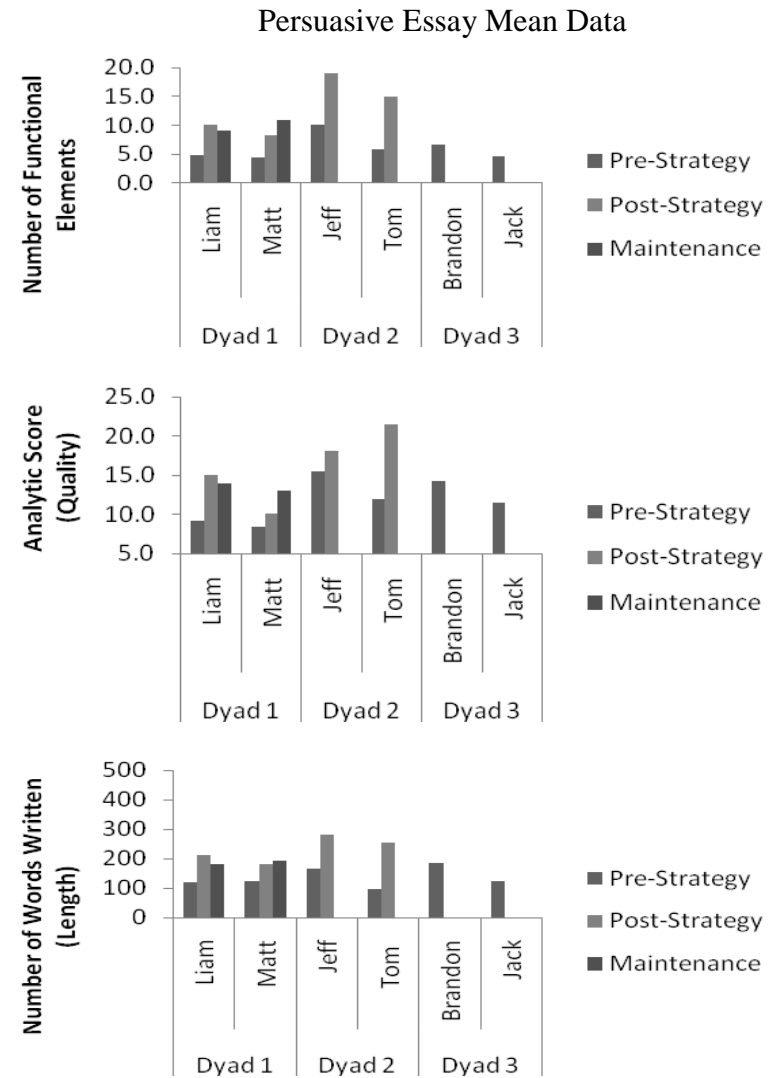
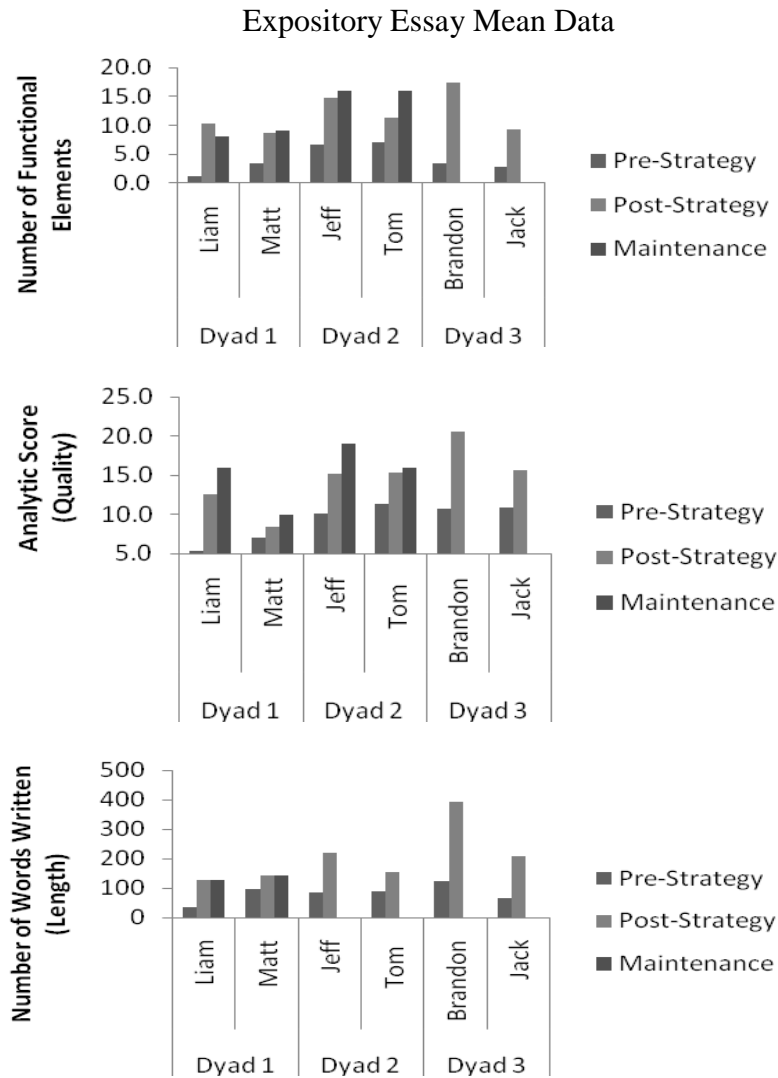


Figure 3. Mean Data Chart. This figure presents a graphic display of mean data.

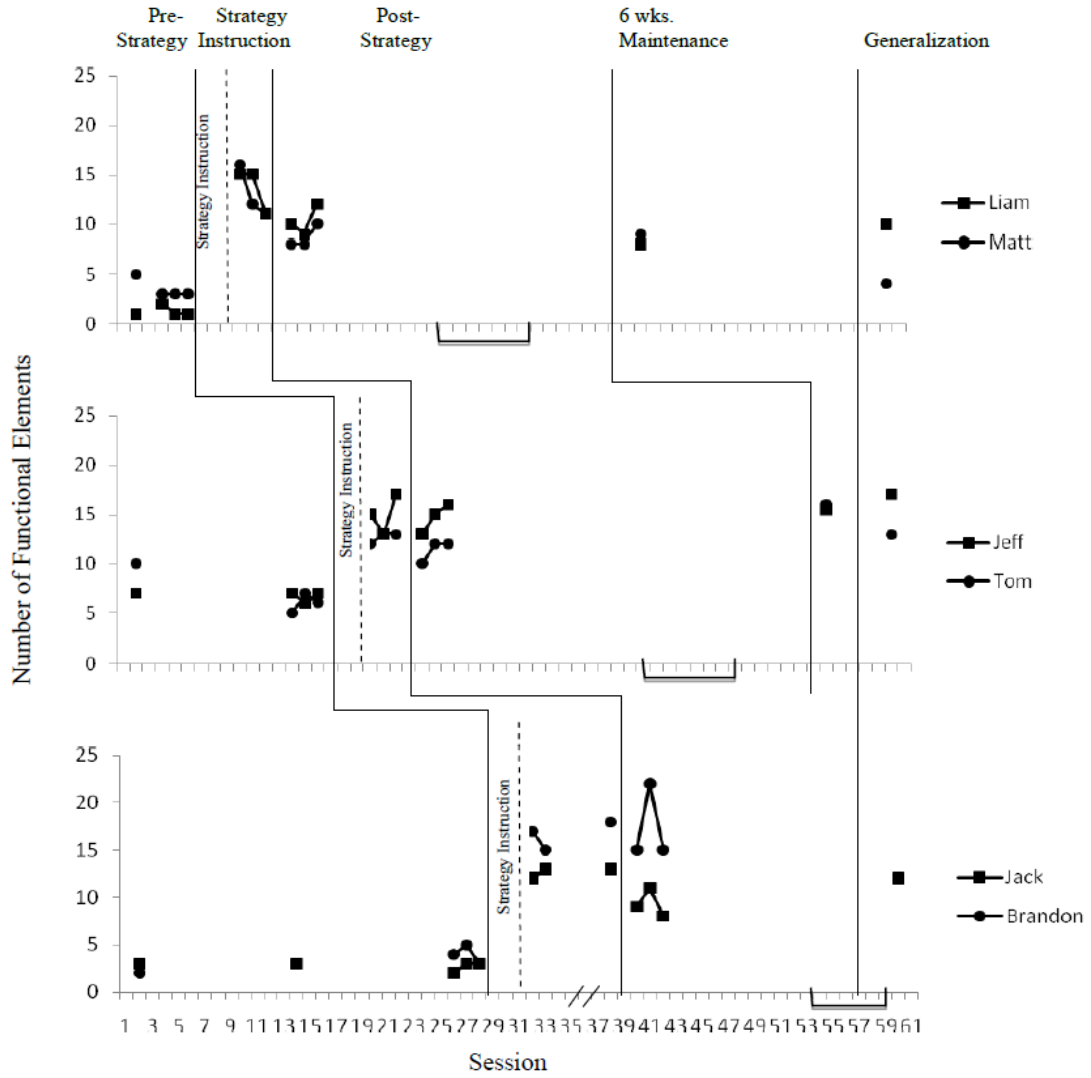


Figure 4. Expository functional elements. This figure provides a graphic display of expository essay functional elements across three dyads. Brackets indicate persuasive essay instruction.

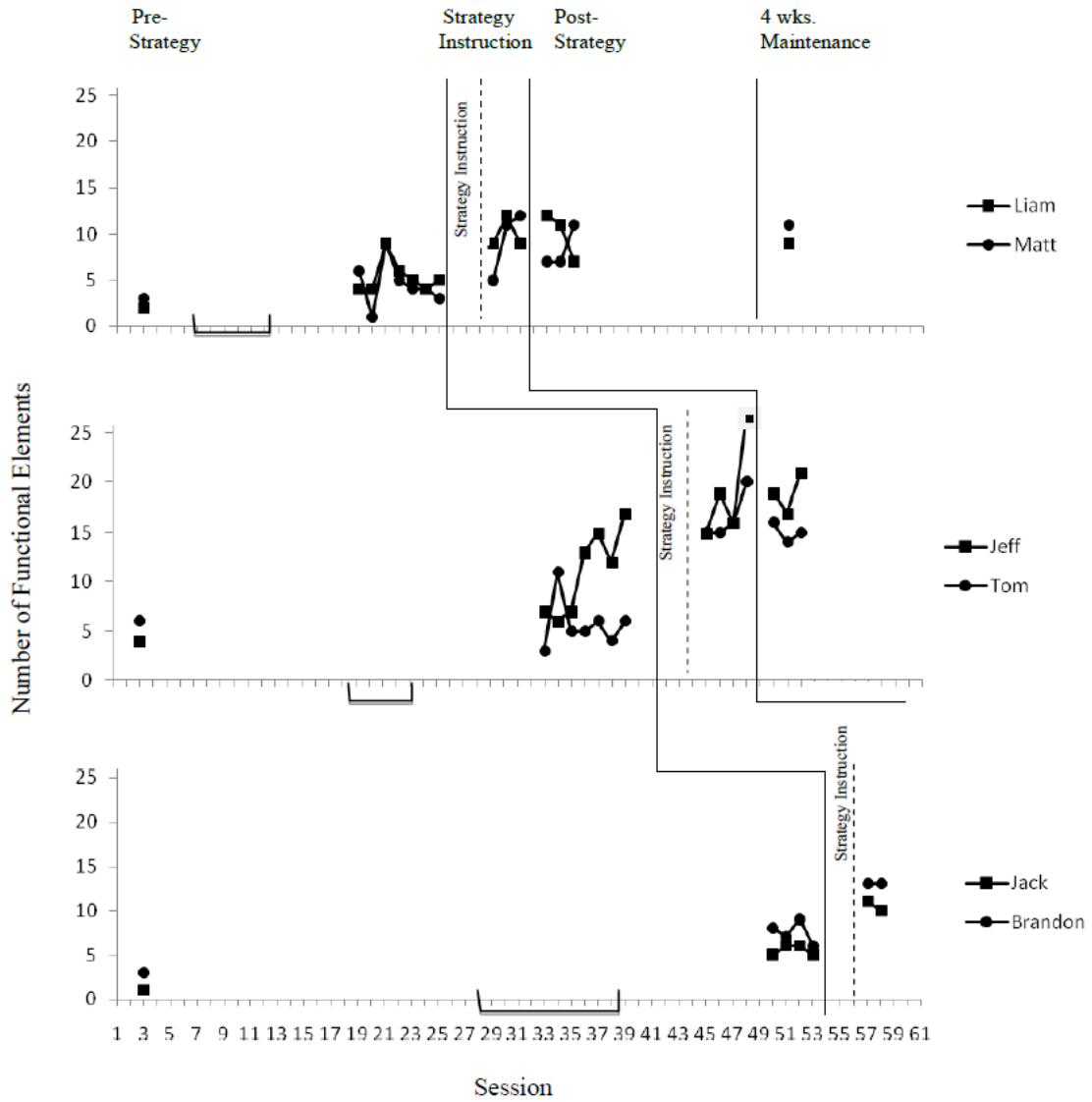


Figure 5. Persuasive functional elements. This figure provides a graphic display of persuasive essay functional elements across dyads. Brackets indicate expository essay instruction.

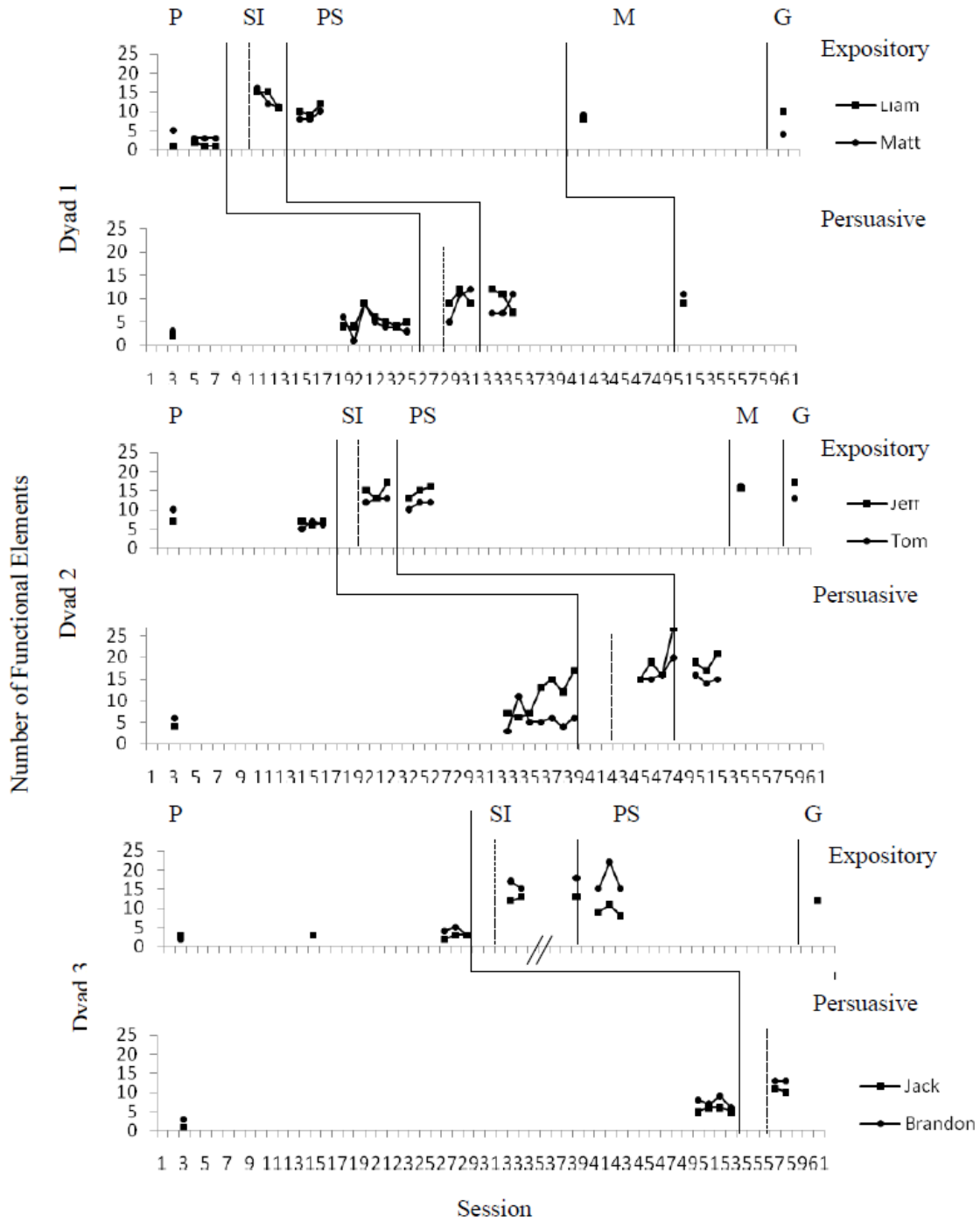


Figure 6. Functional elements across behaviors.

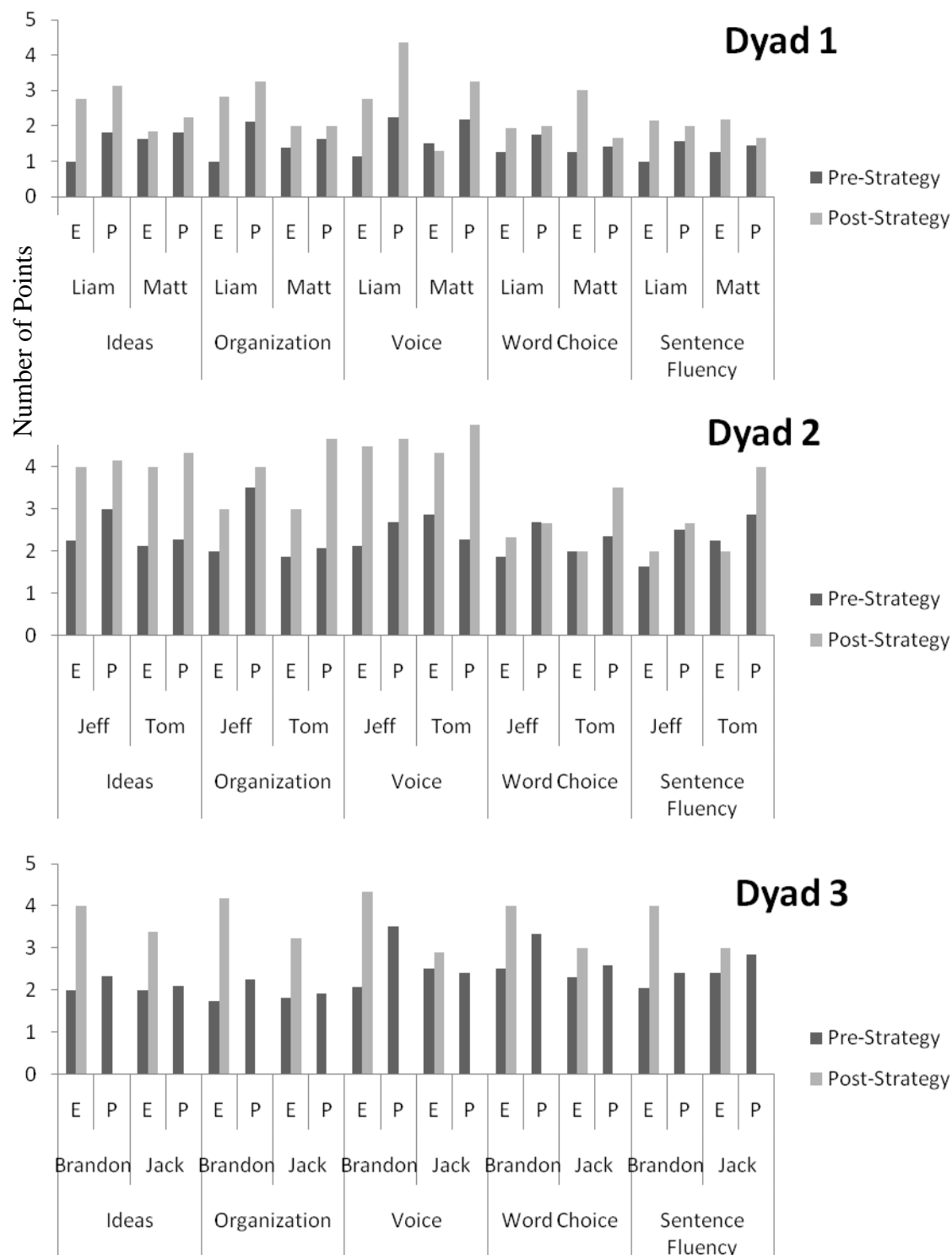


Figure 7. Mean trait scores. This figure provides a graphic comparison of mean quality trait scores across students and writing behavior. (E=Expository essays; P= Persuasive essays)

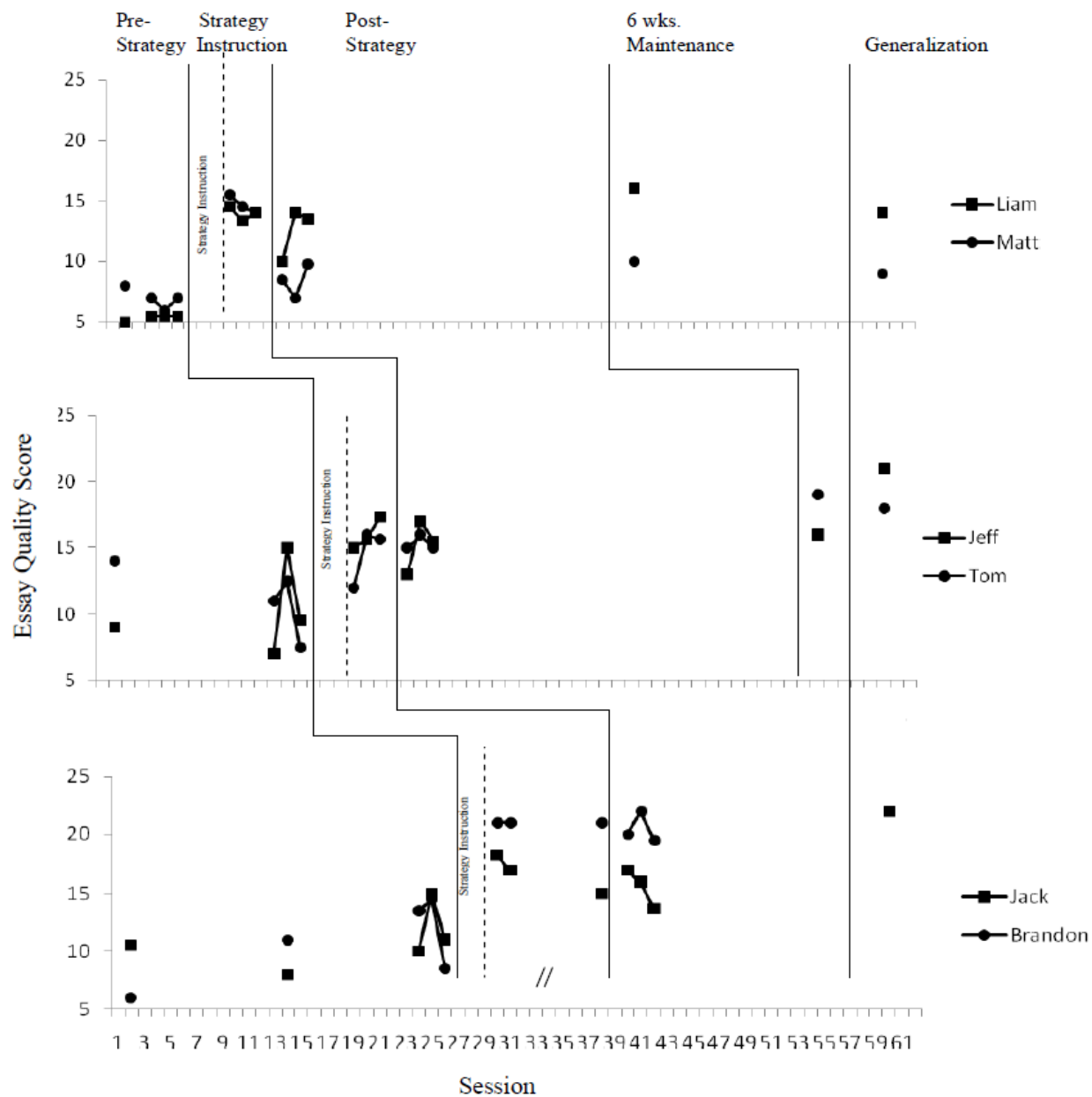


Figure 8. Expository essay quality. This figure provides a graphic display of expository essay quality across dyads.

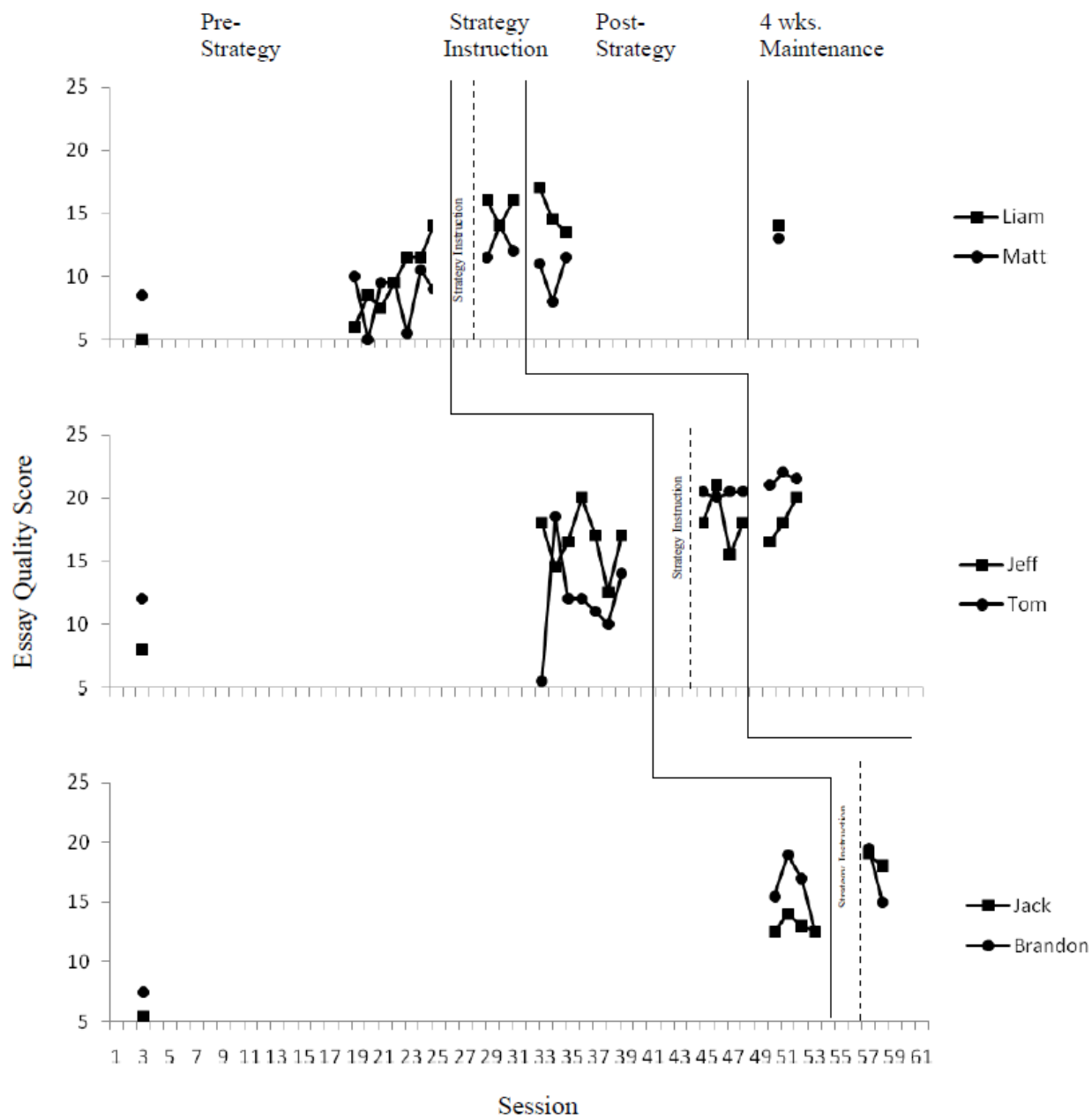


Figure 9. Persuasive essay quality. This figure provides a graphic display of persuasive essay quality across dyads

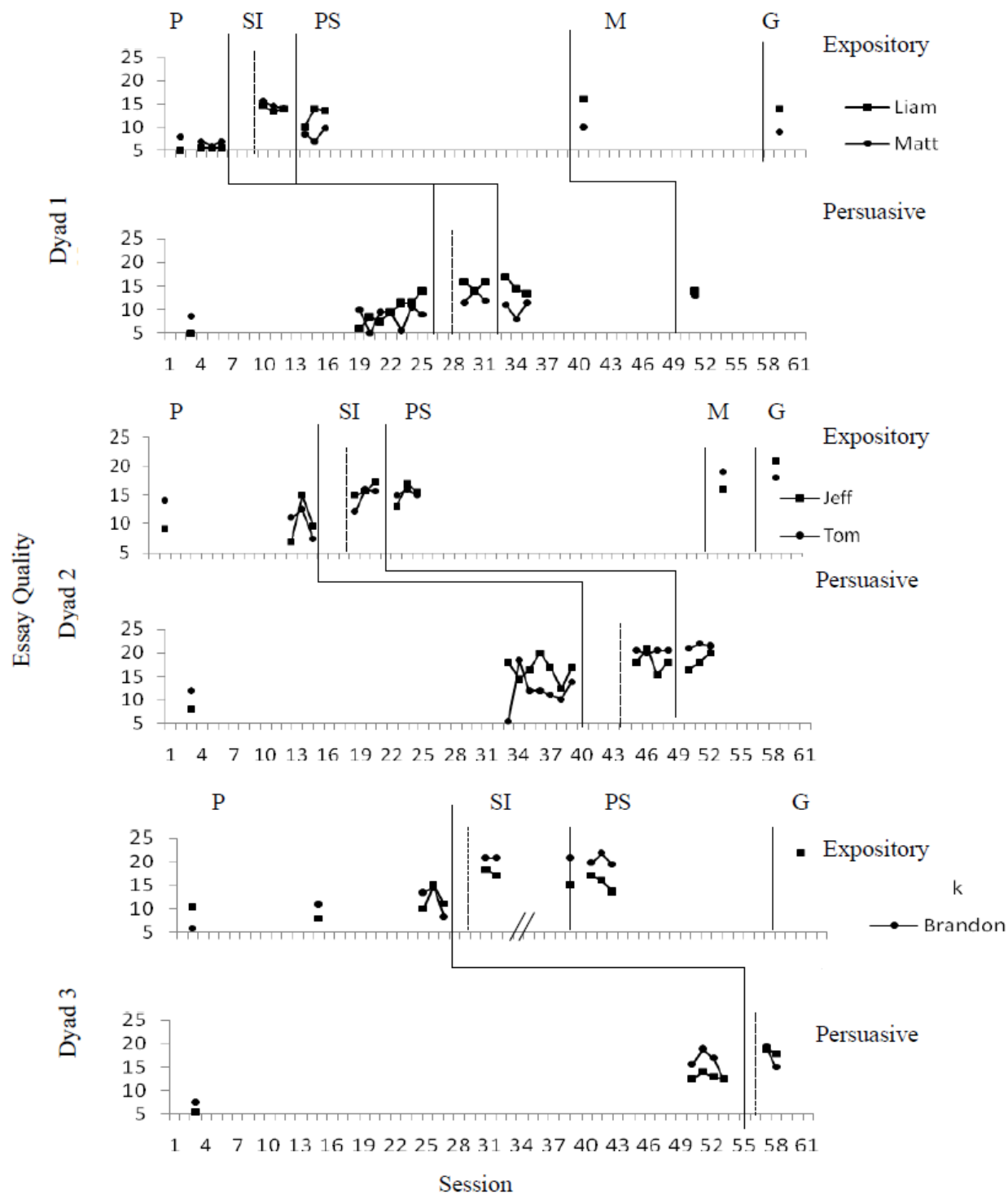


Figure 10. Essay quality across behaviors.

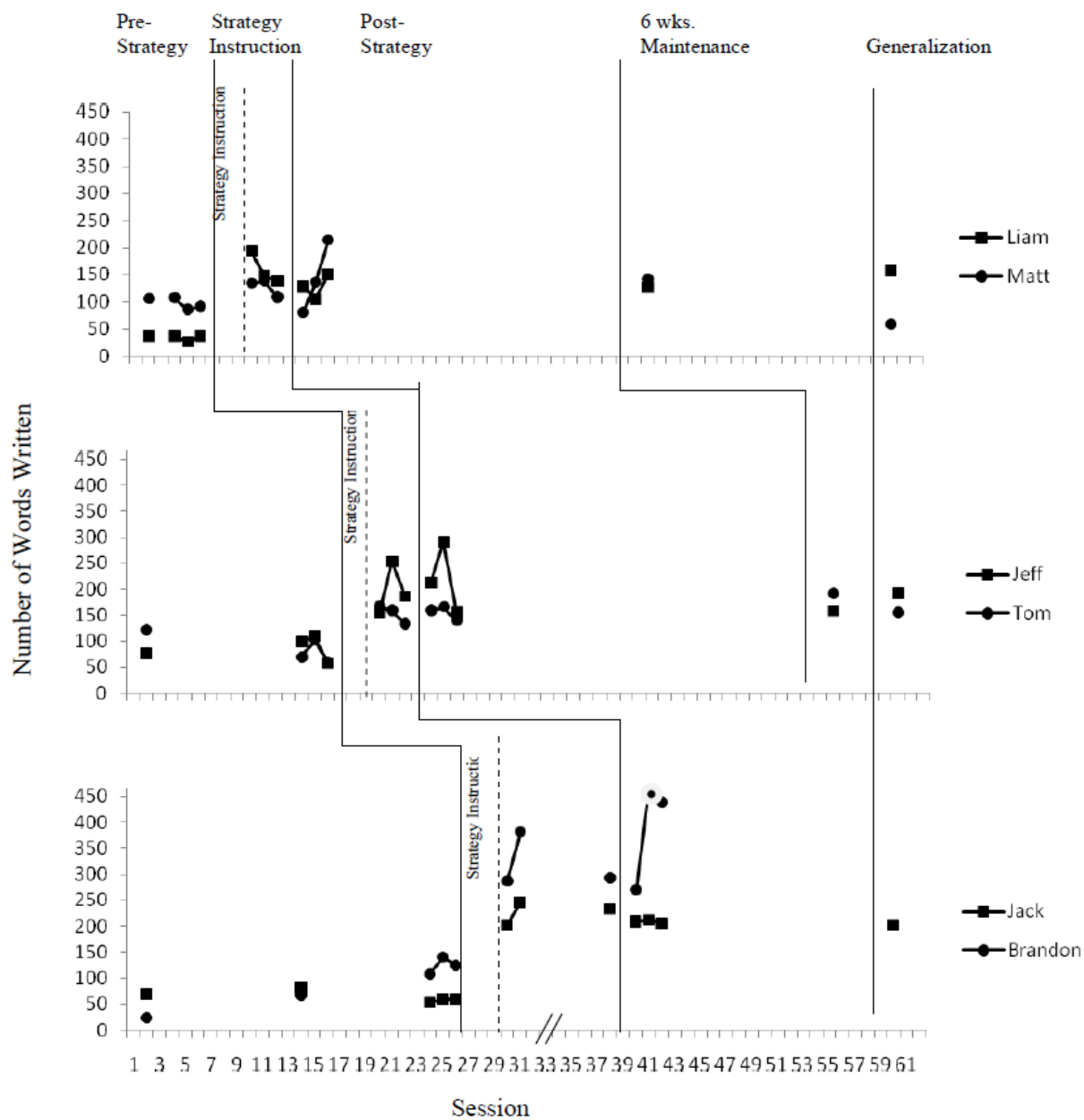


Figure 11. Expository essay number of words written. This figure provides a graphic display of expository essay total words written across dyads.

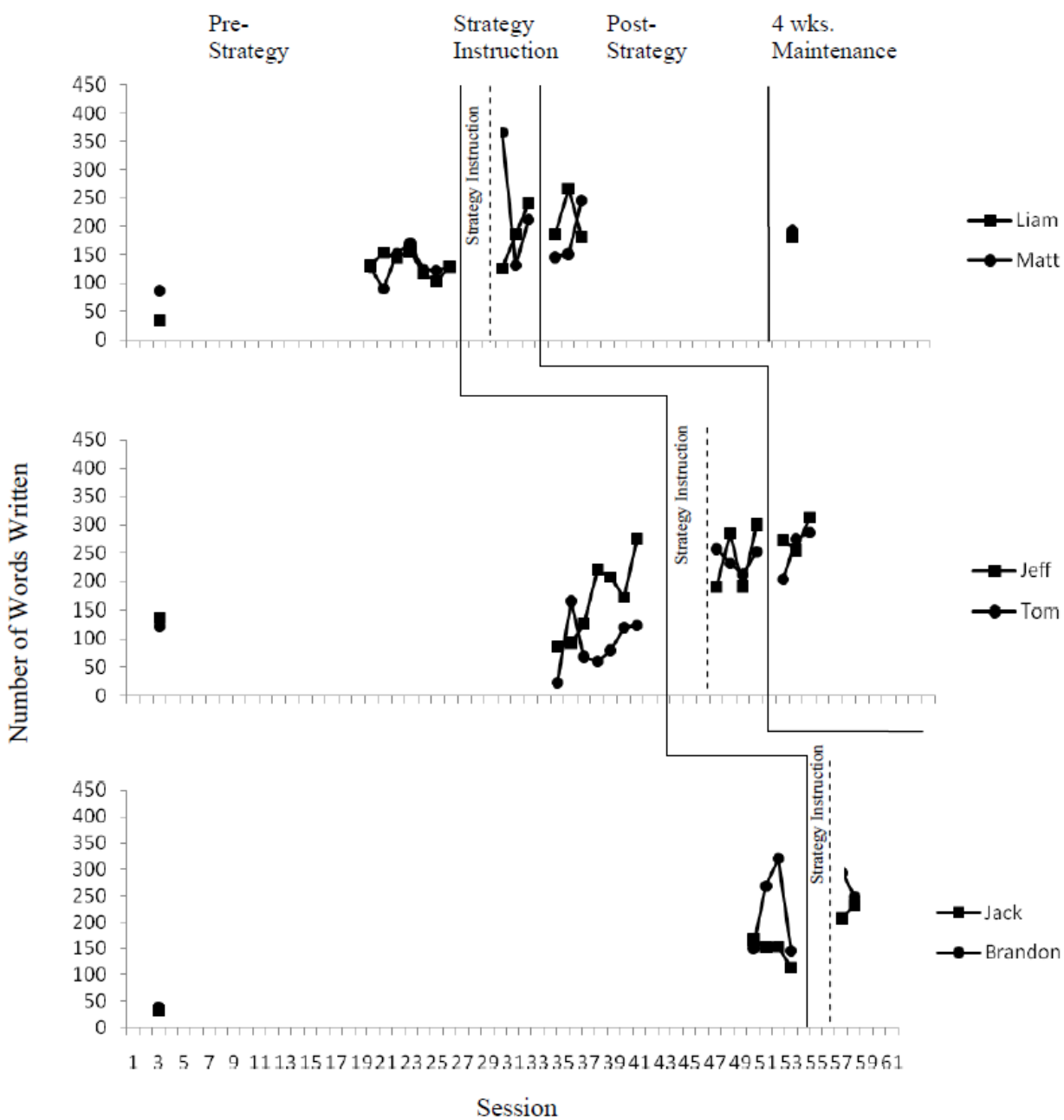


Figure 12. Persuasive essay number of words written. This figure provides a graphic display of persuasive essay total words written across dyads.

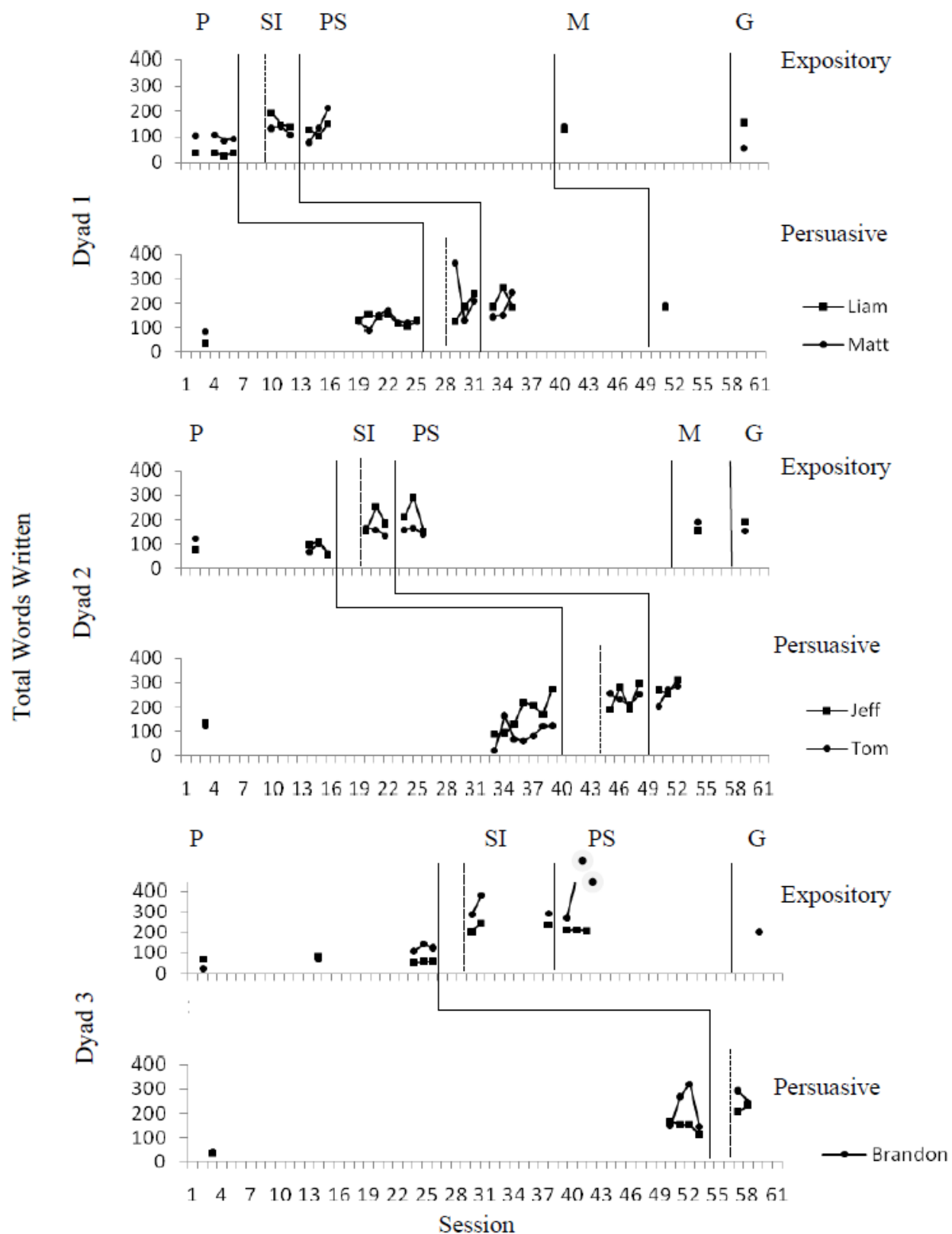


Figure 13. Number of words written across writing behaviors.

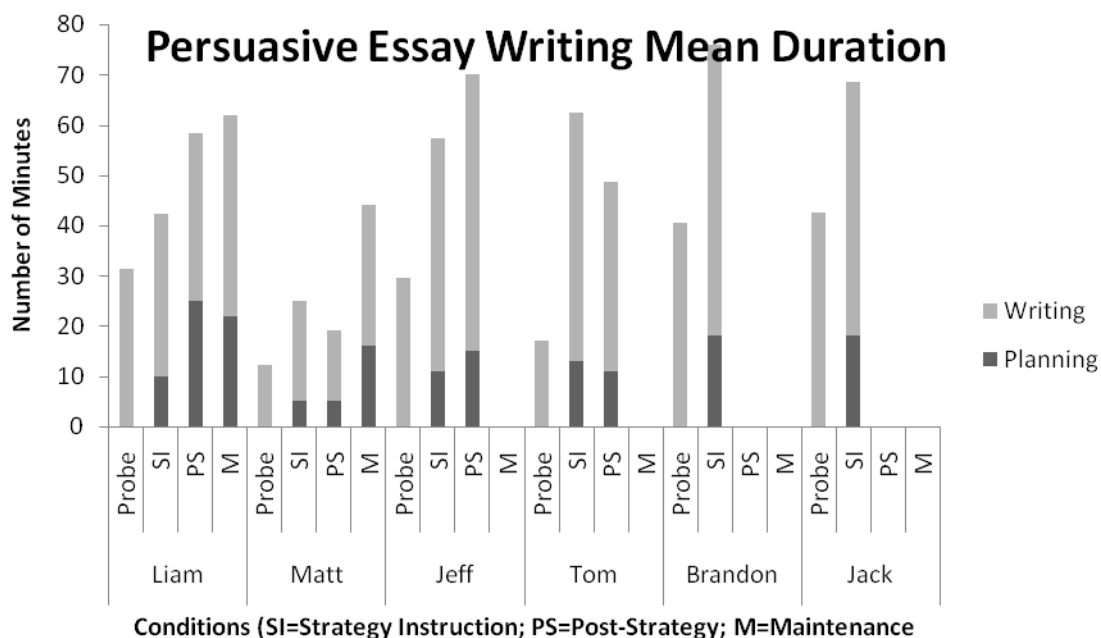
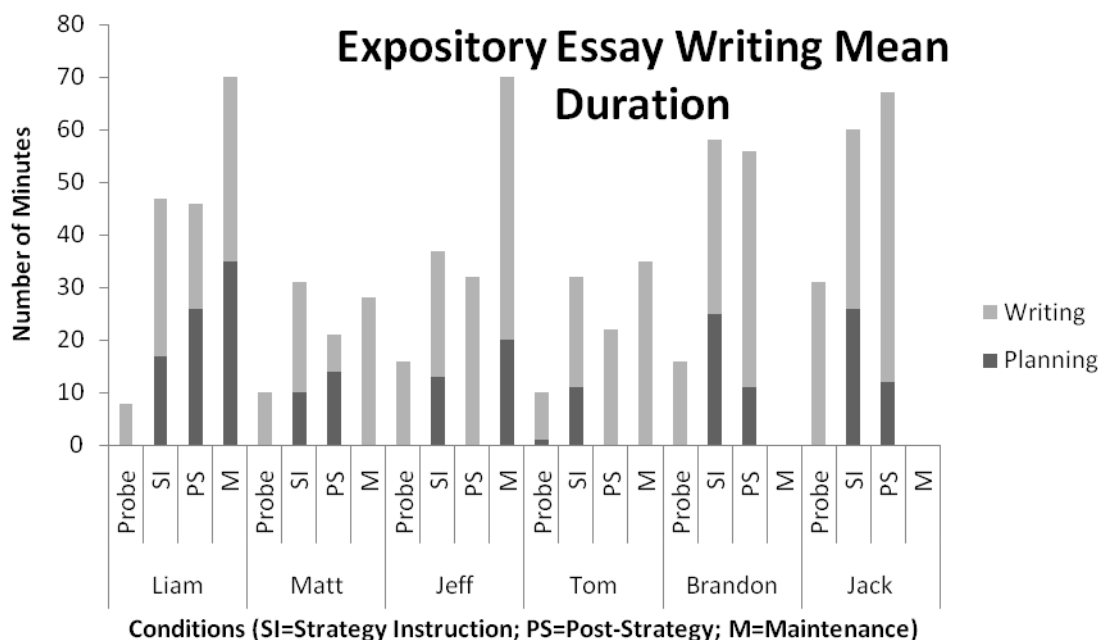


Figure 14. Mean duration data. This figure provides a visual comparison of mean duration data for both planning and writing duration.

CHAPTER 5

DISCUSSION

Communicating through writing is a critical skill required for adolescents to achieve academic success. When a student demonstrates writing skills below the proficient level, they are at risk for academic failure. Even beyond school, establishing effective written communication skills will increase the chance of success in the work environment (Graham & Perin, 2007). In a survey by the National Commission on Writing (2002), two-thirds or more of responding corporations indicated that their salaried employees have writing responsibilities including technical reports, formal reports, and memos and correspondence. In the real world, writing tasks will most likely not be academic (e.g., making literary comparisons or summarizing text) but will be more context related, focused writing tasks where audience and purpose really matter (Wiggins, 2009). Some students with disabilities have difficulty writing, especially with planning, organizing, and expressing their ideas in a coherent manner. These difficulties are evident in disorganization, lack of elaboration, and poor sense of the reader's needs (Gregg, 1989). Individuals with ASD who are learning in the general curriculum are no exception to these challenges. Research by Myles et al. (2003) found that students with high-functioning ASD characteristically have difficulty producing written products, frequently demonstrating both poor quality and quantity.

Answers to Research Questions

The purpose of this study was to help students with mild disabilities at the high school level become better writers while systematically extending and replicating the research base of SRSD for students with ASD on both expository and persuasive writing tasks. Students' essays were analyzed for improvements in number of functional elements, quality, number of words written, and duration of planning and writing. An additional component was included in the strategy instruction package in order to provide students with a visual and concrete understanding of how to consider the perspectives of the intended reader. This supplement was expected to improve both student ToM and essay quality. Research shows that through instruction, students with ASD can increase ToM but evidence of generalization is lacking (Fang et al., 2008; Fisher and Happe, 2005; Mackay et al, 2007). Inconsistent generalization outcomes on teaching false-belief tasks provided a foundation for direct instruction on skills to apply in context. Writing requires ToM because skilled writers use their understanding of the audience to narrow the focus and solve writing problems (Bereiter & Scardamalia, 1987). Embedding ToM instruction in academic tasks requiring that skill is one way to directly teach perspective-taking to generalize. Furthermore, this study evaluated the acceptability of SRSD by high school students with ASD and their special education teacher.

Research question one. The results of this study indicate that SRSD model of instruction in writing with an imbedded perspective-taking component for expository writing improved the number of functional elements, quality, and length of essays. Prior to the intervention, all of the participants, grouped in dyads, showed low levels and stability in the number of FE during the probe condition (range 1-10 FE). These results would be expected in the absence of instruction. After SRSD instruction, the post-strategy instruction data indicated that each of the students had

an increase in level and Liam, Matt, Jeff and Tom had an accelerating trend (range 8-22 FE). Each improvement coincided with the systematic application of the intervention as evaluated by the multiple probe design. Although data on secondary measures were more variable, concomitant improvements were seen in the data for essay quality and TWW. Variability of these secondary measures will be discussed further in the section on limitation. Overall, data support previous research on SRSD, which has reported consistent improvements in individuals' expository writing (Graham & Perin, 2007; Troia, 2009). There is no evidence base for using SRSD model of instruction to improve expository writing behavior for individuals with ASD, thus this begins a line of research for that population.

Research question two. The second research question asked if SRSD model of strategy instruction with imbedded perspective-taking activity would increase overall completeness of persuasive essays in terms of number of functional elements, quality, and length. The researcher anticipated that experimental control could be threatened in this study if co-variation of performance on expository and persuasive behaviors occurred. The design allowed for a test of generalization of expository strategy instruction on quality and content of persuasive essays (Gast & Ledford, 2010b). After introduction of SRSD for expository essay writing for all students except Jeff and Tom, FE data in persuasive essays remained at lower levels than expository essay during post-strategy condition but were higher in level and still variable. These students' persuasive writing FE increased in level after persuasive SRSD instruction. Tom's persuasive essay FE data were quite similar to his expository FE probe data with one spiking data point in the range of post-strategy expository data, but FE increased to an even higher level after instruction on persuasive writing. And again, although data were more variable, concomitant improvements were seen in secondary dependent measures, quality and TWW, data

for all students with the exception of Matt's quality scores for persuasive essays which returned to near probe condition levels after strategy support was removed. The changes from the probe condition to post-strategy instruction for these students provide evidence that although there are some similarities between the two writing behaviors, they are independent of each other. Both strategies bring the student's attention to the fact that an essay begins with an introduction and ends with a conclusion; however, pre-intervention instruction also explicitly made clear that essays have three parts, an introduction, body, and conclusion, as well as clearly explained the topic so that it made sense to the reader.

It is interesting to note that Jeff's initial persuasive essay FE probe data were low and steady but a large therapeutic trend occurred after the third data point. After strategy instruction, Jeff's FE data stabilized but within the same range as the probe condition trend line. Jeff's accelerating trend in persuasive essay data after instruction on expository essay writing indicates the effects of SRSD model of instruction for expository essay writing may have generalized to persuasive writing for him. This multiple probe across behaviors design evaluates and allows inference of the independent variable's function as the behavior change agent when untreated behaviors do no change as a result of the first behavior change (Cooper et al., 2007). Because this collateral change in behavior occurred, one could infer that writing strategy instruction on expository writing behavior was generalized to persuasive writing behavior. However, it might also be reasonable to conclude that there is some overlap in dependent measures across writing behaviors. Instruction on expository essays includes instruction on four of the five possible different types of FE. Although the writing prompt implicitly indicated a different text structure and approach to writing, students could have improved introductions and conclusions as a result of expository writing instruction, thus earn higher scores. On the other hand, these changes

should be considered in the context of some potential threats to internal validity (i.e., historical, maturation, and testing). For example, Jeff was taking two collaborative social studies courses and an elective during the course of this study. Instruction on or exposure to quality writing could have been responsible for this growth during the probe condition. Another possible cause of the accelerating pre-strategy persuasive writing instruction probe data could have been that the persuasive topics and directions to write a letter to a real audience could have sparked interest for Jeff beyond the expository writing tasks.

Several single-subject research studies have reported improvement in FE, quality, and TWW in persuasive essays using the SRSD model on instruction (De La Paz, 1997; De La Paz & Graham, 1997a, 1997b; Ferretti et al., 2000; Graham & Perin, 2007; Jacobson & Reid, 2010; Page-Voth & Graham, 1999; Wong et al., 1996). For individuals with ASD, Delano (2007a) reported that the SRSD package in her exploratory study was effective in producing lasting changes in TWW and FE of persuasive essays written by students with ASD although no data on essay quality or social validity were collected. The present study provides limited support to the literature understanding of SRSD instruction for high school students with ASD (Delano). Data on the use of SRSD to increase persuasive essay writing revealed positive outcomes for only two of the four.

Research question three. The third research question addressed the maintenance and generalization of change in expository and persuasive writing. Visual analysis of Figures 6, 10, and 13 demonstrates that all students maintained levels of dependent measures in writing four to six weeks after instruction. The same figures provide visual evidence that four of the five students participating in generalization condition, with the exception of Matt, generalized the skill to a different teacher. Matt's data returned to near probe condition levels for the expository

behavior with generalization data, confirming that SRSD ultimately had only a small effect on his strategy use and writing FE, quality, and TWW. These results are similar to Mason and Shriener (2008) where inconsistent maintenance and generalization was evident. Their belief was that students did not consistently perform to the best of their ability across time and setting, and that perhaps maintaining performance would require a longer-term support. Mason and Shriener also added that after a behavior is acquired, proficiency or fluency should be the next stage of learning (Alberto & Troutman, 2005). Overall, this research supports other studies by demonstrating that many students' writing skills can be maintained and generalized after SRSD instruction of self-regulatory behaviors (i.e., self-instruction and self-monitoring) along with planning strategies to facilitate the writing process for some students (DeLaPaz, 1999, 2001; Graham & Harris, 1989; Graham & MacArthur, 1988; MacArthur, Schwartz, & Graham, 1998; Mason 2006, 2010).

Research question four. A number of studies have supported the hypothesis of increased planning and writing duration from SRSD instruction (De La Paz, 1999, 2001; De La Paz & Graham, 1997; Deatline-Buchman & Jitendra, 2006; Jacobson & Reid, 2010). Additionally, Hayes and Nash (1996) reported that better writers spend more time planning and writing their texts. Hayes (1996) model of writing outlined the role of working memory within the three main components of writing: interpretation, reflection, and text production. The first two components put a great many demands on writing, taxing the writing process. Interpretation includes idea generation, while reflection is the evaluation and transformation of information in an organized fashion. These tasks will tax working memory during the text production phase if they are not considered prior. Many writers edit and plan during text production; however, during the planning component of writing, writers only need to focus on planning the text (e. g., choosing a

tone and creating and organizing ideas for the text) possibly eliminating some stress on working memory during the text production. The current study provides evidence that planning and text structure instruction not only leads to increases in FE, quality, and length, but also duration of planning and writing (see Figure 14). Along with increases in writing duration for all students in post-strategy instruction and maintenance checks, under the expository essay writing behavior, four of the six students continued to plan after the graphic organizers and visuals were removed. Planning for expository writing typically looked like a list of ideas. Students' plans for persuasive writing looked like a hand-drawn version of the STOP & DARE graphic organizer, a T-chart to list "For" and "Against" on the issue. For persuasive writing behavior, all four students continued to plan without materials in post-strategy and maintenance conditions.

Perspective-taking

Social functioning deficits are a core characteristic of ASD affecting the ability to take perspectives of others (Rogers, 2000). According to Gregg and Alexander (1989), writing requires an awareness of audience and sensitivity to reader's need. The more able individuals are at understanding other people, the better writer they will be. A unique feature to this intervention program is the inclusion of instruction on social perspective-taking for individuals with ASD. To elicit perspective-taking, social skills instruction from the curriculum by Winner (2007) was provided to the students. A picture depicting a human body with a vertical line splitting the body in two represented "the thoughts, interests, and experience of an individual" as the right half of the person and left half of the person was devoted to files of information on others that could be used to make guesses about their perspectives on the writing topics. It was anticipated that this would stimulate both ToM and a realization of an intended audience that had different thoughts and experiences influencing their opinion on the topic. With a better sense of audience, students

with ASD and other mild disabilities should have improvements in quality of essays (Gregg and Alexander).

A secondary dependent measure in this research possibly related to changes in sense of audience, was essay quality. Across students with the exception of Matt, mean quality scores increased from probe condition to post-strategy instruction and maintenance conditions. Only a slight increase in Matt's essay quality was evident. Five of the 6+1 Traits of Writing[®]: a) ideas, b) organization, c) word choice, d) voice, e) sentence fluency were used to evaluate quality of essays within the structure of a multiple probe across dyads and behaviors design (Culham, 2003). Gregg, Sigalas, Hoy, Wisenbaker, and McKinley (1996) found previous research indicating that writers who did not understand the needs of their audience often produce written text that was disorganized and did not elaborate. In addition, these individuals did not adjust their voice to meet the task demands. Gregg et al. stated, "To investigate a writer's sense of audience requires evaluation of the writer's voice," (p. 123) indicating that instruction on perspective-taking in the context of understanding a writer's audience could affect writing quality in terms of the traits, ideas, organization, and voice. Due to SRSD model of instruction with a perspective-taking component, the individual quality scores on such traits increased from probe essays to post-strategy instruction. All students made increases in specific trait scores across conditions with one exception. Matt had a 4% decrease in voice score on expository writing, however, his voice in persuasive essays increased by 21% from probe condition to post-strategy instruction. It is hypothesized that Matt's observed high interest in passing the science portion of the graduation test during writing instruction was a possible historical confound effecting internal validity of results for him. Otherwise, students made a mean increase of 28% for ideas, 26% for organization, and 32% for voice scores after instruction across both behaviors. Without including

the decrease of 4% mean points for voice by Matt, the range of increase was 8% to 56% indicating that collateral changes occurred in sense of audience along with the SRSD plus perspective taking. The question remains, did quality reach adequate levels? If a total score of 15 indicated proficiency with an average of 3 points out of 5 on five of the 6+1 Traits of Writing rubric, results would indicate that five of the six students (excluding Matt) had a mean quality score above 15 at post-strategy or maintenance condition (with only Liam not exceeding 15 at both post-strategy and maintenance conditions).

Motivation

A number of factors built into this intervention tap into the construct of motivation. First, phase three of the SRSD instruction requires that students be provided with models of essays of both good and poor quality. Research shows that students with weak skills in an area have poor judgment of self-efficacy and are overly confident due inability to evaluate their own performance (Kruger & Dunning, 1999). Providing students with a strategy and various models of essays motivates students to write more elaborated and better organized essays. Additionally SRSD model of instruction itself was designed to teach students to self-regulate through the process of writing with goal setting and self-instruction. Through self-regulation techniques, students better “understand how their efforts and attitudes influence learning” (Santangelo, Harris, & Graham, 2007, p. 17). Self-regulatory practices require students to observe their performance and make judgments. If students judge their work as inadequate, they are likely to seek help from a teacher or a strategy.

The interest theory defines interest as a motivational and psychological state between individuals and their environment (Hidi & Boscolo, 2008). Therefore, the writing prompts were selected and designed to provide relevant information on a current or age appropriate topic

through a writing situation and asked students to respond to intriguing questions or statements based on that writing situation. The students' interest level on each topic was evaluated through a Likert scale with results indicating that each student had interest in some of the topics presented throughout the study. Even more, the additional instruction on perspective-taking intended to generalize to improved sense of audience in writing, provided students with a more authentic task making purpose and audience matter. In life, we are motivated to take opportunities to write because we are trying to make a difference and elicit a result from the relationship established with our reader.

Social Validity

The positive evaluation through a social validity questionnaire indicates that SRSD plus perspective-taking instruction for expository and persuasive writing behaviors was a worthwhile approach to teaching composition skills (see Table 9). The three elements of an intervention that were evaluated to determine social validity were goals, procedures, and outcomes (Wolf, 1978). Teacher and student opinions were particularly relevant to this research because students were active participants with the understanding of their own personal goals and needs at school. The special education teacher was aware of state standards and curriculum and practicality of effective interventions in the classroom. Students gave their highest rating for intervention outcomes with everyone but Matt indicating that they "definitely" support essays better and write better essays over all. Students thought it was important to write essays that were more organized as well. Just above average were ratings on the important of perspective-taking and how much students liked the writing program. The lowest rating and the only one that received "1" by individuals was "I liked graphing my scores each day." Responses were split, either "I did not like it" (n=3) or "I really liked it" (n=3). It is important for students to learn to monitor their own

progress (Graham & Harris, 2005), but whether or not graphing the progress was reinforcing varied from student to student. The teacher found the goals, procedures for the age and level of students, and outcomes of the program very socially valid with only a moderate rating of “4” for the motivating factor of instruction on self-regulation (e.g., self-graphing). In addition, she stated a number of times through the semester that she would like to use the program in her Study Skills classes the next year, that in the past she “really didn’t know how to help her students with their essay writing,” and at the end of the semester she asked that the researcher please provide her a file of procedures and materials so she could implement the program in the future. The researcher was encouraged that the SRSD model of instruction was perceived as ecologically valid within the context of a school day for individuals with ASD and other mild disabilities and by modeling the program more students at that high school might be impacted in the future.

Limitations

There are several limitations to the current study that may be addressed in future research. First, the demographics of this study included all male students of a minority group. Four students were African American, one was multiracial, and one was Hispanic (but not an English Language Learner). One benefit to single subject design is the emphasis on the individual making it conducive to the scientist-practitioner. However, because the student population in this study does not reflect that of most schools, systematic replication of the SRSD on students with different backgrounds would improve the generality of the results. Meanwhile, practitioners should follow data closely when using the intervention with different cultural backgrounds. Also, a number of interruptions including snow days, teacher furlough days, spring break, mandated statewide assessments, test preparation sessions, field trips, senior activities, and participant absenteeism/suspension occurred across the semester making the data collection

take longer than expected and causing interruptions throughout the study and specifically to strategy instruction for Dyad 3. This is a limitation because extended time in a condition weakens the controls for threats to internal validity including history, maturation, testing, and instrumentation.

Another limitation involves the IOA on quality scores. Even after intensive training toward a criteria of 80% exact accuracy of scoring essay quality (which was found standard in literature), lower than expected IOA occurred (i.e., 73% IOA for an exact match). Although 6+1 Traits of Writing[®] has a validated scoring rubric, making these subjective decisions was a difficult task, especially when initial writing samples were extremely poor and almost unscorable. Indicating agreement within one point for quality ratings is also standard in the literature. IOA within one point in the current study was an acceptable 97%. The researcher took measures to ensure fair quality scores by recording the mean quality score of both scorers and having a third trained person score the 3% of essays that differed by two points. However, readers should use caution in interpreting the essay quality data due to low IOA.

Across the SRSD literature, no set criteria for mastery is provided. In their SRSD research, Mason and Shriner (2006) set mastery criteria at a specific number of persuasive essay elements included in student essays but noted a problem in that many students were not motivated to go beyond that number. In addition, these students were only being asked to write a paragraph to support their opinion. The students in this study were approaching graduation with looming high-stakes writing tests that require much more extensive writing with four to six paragraphs. Counting the number of elements in a full essay would be quite a daunting task for a struggling writer. Another way SRSD researchers set mastery criteria is by percentage increase in TWW. In the AIMSWeb[®] Manual, Powell-Smith and Shinn (2004) do not recommend sharing

TWW feedback with students because students are likely to add more words in their writing without increasing the quality. Using the same mastery criteria as Sexton, Harris, and Graham (1998), students in this study were asked to visually inspect their performance on a graph and set a reasonable goal at least 50% increase from their FE without strategy instruction. Students were able to make concrete, visual judgments, making decisions on how high they wanted their graph to go and to what extent they wanted to write a quality essay. However, for students that struggled the most before instruction, a 50% increase was not significant, if even out of the range of variability. A higher standard as criteria to move to independent performance phase would be helpful in interpreting data.

Another threat to internal validity, data instability, was evident throughout the dependent measures across dyads and behaviors. Variability of data are problematic when attributing it to either an effect of the intervention or natural variation of data (Kratochwill, 1978; as cited in Gast, 2010). Within the methods of this study, the primary dependent measure, FE, was expected to be stable in the initial probe condition before moving to strategy instruction as opposed to setting a predetermined schedule. During the expository writing behavior, pre-strategy probe data were quickly observed as stable; however, after moving to the second behavior, persuasive writing, and data were less stable for Dyads 1 and 2 requiring a longer period of time in probe condition before moving to strategy instruction. Caution should be used when considering the effectiveness of the SRSD model for persuasive writing. As indicated earlier, this variability could be due to some generalization of inclusion of FE across genres. Additional data variability was seen in secondary measures. Previous studies have shown high variability in data for persuasive writing, particularly for the dependent measures quality and length (Lienemann & Reid, 2008; MacArthur & Limbo, 2009; Mason and Shriner, 2008; Mason et al., 2010). Specific

FE is explicitly taught within the SRSD model of instruction; and although FE is correlated with quality of writing and length of essays, these secondary dependent measures also correlate with both situational and individual motivation to write on a topic. Motivation to write on specific topics is a possible explanation for variable quality and TWW data (Sexton et al., 1998).

The most critical limitation to this intervention is the confound of feedback provided in the post-strategy instruction phase. SRSD model has six phases of instruction with the last being independent performance, but with the inclusion of self-regulation and self-monitoring, it is encouraged to allow students to continue to see their FE after each essay is scored and continue to graph (Locke, Shaw, Saari, & Latham, 1981, as cited in Graham and Harris, 2005). This presents a confound within the design of this study. Had the probe and post-strategy conditions been better controlled to ensure a second probe condition, the strength of the design would have been enhanced, and a direct comparison of data could be made. However, the provision of feedback available to the student after each essay was scored created a situation that was confounding and altered the apparent effects of the treatment. A better design would have included feedback to students during the probe condition thus allowing isolation of the explicit instruction provided in SRSD. However, during this research, no feedback was provided during maintenance probes making direct comparisons between probe data and maintenance data more valid.

Implications for Practice

The United States education system is consistently ranking below other nations. In an effort to solve this crisis, Common Core State Standards are being developed using a backward design, considering outcome (i.e., college and career readiness outcomes) first and working backward to provide benchmarks across the grade levels. Developers of these national standards

are looking at the literacy needs of employees to be competitive in the job market, and a shared responsibility to increase literacy is being put in place across all content areas with a high focus on writing a variety of texts and critical thinking. And as the U.S. has made improvements in literacy of elementary aged children, continued growth in empirical research will be necessary to ensure all teachers have access to effective instructional methods to improve literacy and employability for our adolescents (Graham & Perin, 2007). Strategy instruction has been found to be the number one effective element to improve writing achievement for grades 4 to 12. Research provides us less information about how to differentiate instruction for individuals with ASD. Ultimately, this research puts us one step closer to understanding how to meet the challenges of writing instruction and teaching all students, including those with ASD, to be proficient in writing. Myles et al. (2003) indicated that students with ASD need explicit writing instruction. This research demonstrates that SRSD instructional model for students with ASD can improve expository writing. Practitioners should know that SRSD writing instruction can be used across genres and the possibility of generalization or at least some overlap in dependent could occur.

Future Research

It is difficult to determine the relative contributions of program components within an instructional treatment package. Further empirical studies could evaluate the pieces of SRSD and perspective-taking instruction to isolate the variables (e.g., planning, text structure, and perspective-taking) to determine which impact what parts of the writing process and product. Here, each variable was not studied in isolation so no conclusion can be drawn about the effects of planning, self-regulation, text structure, or perspective-taking alone on FE, quality, or TWW. At the center of Bandura's social cognitive theory is self-efficacy as a piece of self-regulation.

Grounded in this theory, SRSD model of instruction emphasizes self-regulation as a key part of the writing process with the intention of increasing goal-driven behavior, self-efficacy, and motivation. However, due to the mixed results in previous research on the effects of SRSD on self-efficacy and motivation, future research on SRSD instruction for individuals with ASD needs to evaluate changes of self-efficacy after instruction on self-regulation of the writing process. In addition, changes in student ToM were not evaluated in this study. If we are going to integrate social skill curriculum into academics, a validated instrument to measure change in an adolescent with ASD's ability to understand mental states of others needs to be developed and used in research.

The next step in the writing process after planning and drafting is revising. Revision is considered an important part of the writing process because it affects knowledge and may improve essay quality, particularly for high school students (Bereiter & Scardamalia, 1986). Not only that, revision is one way a writer can think about their reader and use strategies to meet the reader's needs. Direct and intensive instruction on rereading as the reader needs to take place for quality revisions (Hollway, 2010). No other literature evaluates strategies or specifically, SRSD models for teaching revision to improve writing quality with adolescents with ASD. Future research on revising strategies for this population of students with ASD is encouraged.

An ecologically valid benefit to this study, unlike some research on SRSD, is that the intervention was applied to a group of students instead an individual (De La Paz & Graham, 1997a). However, there are many questions left to answer. How can general educators teach writing to a diverse population including students with high-functioning ASD in the typical setting? How can a classroom using the collaborative teaching model best organize writing instruction using the SRSD model requiring an individualized pace and feedback is

recommended? The current investigation makes an important contribution to the literature on effective instructional methods for students with ASD. SRSD model of writing instruction providing explicit strategy instruction using modeling and scaffolding in a meaningful social context directly teaches students how, why, and when to use the skill in generalized settings. This feedback is important to ensure self-regulated use of the writing strategies (Graham & Harris, 2005; MacArthur, Graham, Schwarz, & Schafer, 1995). Although this study does not support specific claims about increasing perspective-taking or improved sense of audience impacting writing quality, it does demonstrate overall effectiveness of a comprehensive writing program for adolescents with ASD.

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APPENDIX A

Department of Communication Sciences and Special Education
University of Georgia
 516 Aderhold Hall
 Athens, GA 30602-7153

I agree to allow my child, _____, to take part in a research study titled, "Persuasive Writing Strategy Instruction," which is being conducted by Ms. Candice Southall, from the Communication Sciences and Special Education Department at the University of Georgia under the direction of David Gast, Ph.D. (UGA faculty advisor, Communication Sciences and Special Education Department). I do not have to allow my child to be in this study if I do not want to. My child can refuse to participate or stop taking part at any time without giving any reason, and without penalty or loss of benefits to which my child is otherwise entitled. I can ask to have the information related to my child returned to me, removed from the research records, or destroyed.

The reason for this study is to find out if teaching a writing strategy can improve your child's persuasive essay writing skills and social perspective taking. Your child is invited to participate in the study because he/she was recommended by a teacher to potentially benefit from strategy instruction.

Children who take part may improve their writing skills. The research also hopes to learn something that may help other students write better in the future.

If I allow my child to take part, my child will receive instruction on a writing strategy and be asked to write some essays. The researcher will ask my child to do these activities daily. The activity will take place during academic support and will not interfere with other school activities. If I do not want my child to take part then she/he will be allowed to study as usual.

The research is not expected to cause any harm or discomfort. My child can quit at any time. My child's grade will not be affected if my child decides to stop taking part.

Any individually-identifiable information collected about my child will be held confidential unless otherwise required by law. My child's identify will be coded, and all data will be kept in a secured location.

The researcher will answer any questions about the research, now or during the course of the project, and can be reached by telephone at 706-540-5673. I may also contact the professor supervising the research, Dr. Gast, Communication Sciences and Special Education Department, at 706-542-5069.

I understand the study procedures described above. My questions have been answered to my satisfaction and I agree to allow my child to take part in this study. I have been given a copy of this form to keep.

Name of Researcher	Signature	Date
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Name of Parent or Guardian	Signature	Date
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Telephone: _____ Email: _____

Additional questions or problems regarding my child's rights as a research participant should be addressed to
 The Chairperson, Institutional Review Board, University of Georgia,
 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411;
 Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

Department of Communication Sciences and Special Education
University of Georgia
516 Aderhold Hall
Athens, GA 30602-7153

Next semester, Candice Southall will be providing writing instruction during academic support blocks at Cedar Shoals High School. I have been invited to participate in the writing strategy instruction to increase my writing skills. This strategy has been effective in increasing writing skills for other students. The researcher also hopes to learn something that may help other students write better in the future.

If I agree to take part, I will receive instruction on a writing strategy and be asked to write some essays. The researcher will ask me to do these activities daily during second semester. The activity will take place during academic support and will not interfere with other school activities. If I do not want to take part then I will be allowed to participate in regularly planned writing instruction.

The research is not expected to cause any harm or discomfort. I can quit at any time. My grade will not be affected if I decide to stop taking part.

Any information collected about me will be held confidential unless otherwise required by law. The researcher will answer any questions about the research, now or during the course of the project, and can be reached by telephone at 706-540-5673. I may also contact the professor supervising the research, Dr. Gast, Communication Sciences and Special Education Department, at 706-542-5061.

I understand the study procedures described above. My questions have been answered to my satisfaction and I agree to take part in this study. I have been given a copy of this form to keep.

Signature of the Participant/Date

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

APPENDIX B

Persuasive Essay Prompts

1.

Writing Situation: At the present time, young Americans volunteer to enlist for military service. To maintain our present military operations, more people may be needed.

Do you agree or disagree with the opinion that all Americans, both men and women, should be required to perform two years of military service?

Directions for Writing: Write a letter to your congressman expressing your view on the issue. Support your position with specific reasons and examples.

2.

Writing Situation: A law has been passed that requires high school students to pass exit tests before they graduate from high school.

Consider carefully the advantages and disadvantages of passing required exit tests. Do you agree or disagree with making high-stakes exit tests, such as the Gateway Test, a requirement for high school graduation?

Directions for Writing: Write a letter to your principal expressing to support your point of view. Support a position with specific reasons and examples.

3.

Writing Situation: Many celebrities—such as actors, musicians, models, or athletes—make a great deal of money. Some people think celebrities make more money than they deserve. Other people think celebrities' wealth is deserved because of the enjoyment they bring to the public.

Do you agree or disagree that celebrities make more money than they deserve?

Directions for Writing: Now, write a letter to a celebrity expressing your view of the issue is correct. Use facts and examples to support your argument.

4.

Writing Situation: Current research suggests that because teenagers have different sleep patterns, they would benefit from beginning the school day at a later time. Suppose your Board of Education has proposed that all high school schedules begin at 9:30 a.m. and end at 4:30 p.m.

Do you agree or disagree that this later schedule would be beneficial?

Directions for Writing: Now write an essay in which you persuade the Board of Education to agree with your opinion. Support your position with reasons and examples

5.

Writing Situation: Due to potential problems, many school systems have adopted a policy that bans cell phones and pagers on school grounds. However, some parents have provided these items out of concern for safety.

Do you agree or disagree that cell phones and pagers should be banned on school grounds?

Directions for Writing: Now write an essay in which you convince the principal of your opinion. Support your position with specific reasons and examples

6.

Writing Situation: A law has been passed changing the driver's license system to a graduated system. A young person can be issued a restricted learner's permit at age 15, an intermediate license at age 16 and a full license at age 17. Both the learner's permit and intermediate license limit the number of passengers allowed in a car and limit the hours the person can drive. The full license carries no restrictions.

Consider carefully the advantages and disadvantages of the graduated driver's license system. Do you agree or disagree with the graduated license system?

Directions for Writing: Now, Write a letter to your to your congressman to support your point of view. Support your position with specific reasons and examples.

7.

Writing Situation: A school board is considering keeping school in session all year. Instead of a long summer vacation, there will be many shorter breaks throughout the year.

Think about the effects of a twelve-month school year. Do you agree or disagree that schools should be in session all year?

Directions for Writing: Now, Write a letter to your school board expressing your view on why this is or is not a good idea. Defend your position with specific reasons supported by several detailed examples.

8.

Writing Situation: In some countries, students are responsible for the basic daily cleaning of their school buildings. Fifteen minutes are set aside each day for all students to sweep, dust, and clean their classrooms and corridors.

Think about how you would feel if students were responsible for cleaning your school. Do you agree or disagree that American schools should adopt this policy?

Directions for Writing: Now, write an essay in which you persuade the principal why this is or is not a good idea. Defend your position with specific reasons supported by several detailed examples.

9.

Writing Situation: Imagine that your school district has proposed saving money by eliminating extracurricular sports (football, basketball and baseball) from the high school program. Think about the possible effects of cutting sports from the school program. Decide whether you are for or against this proposal.

Directions for Writing: Write a letter to your school's athletic director expressing your view on why this is or is not a good idea. Defend your position with specific reasons supported by several detailed examples.

10.

Writing Situation: Many schools require all students to perform some type of community service such as working in nursing homes or hospitals. Think about how you would feel if you were required to perform a community service.

Directions for Writing: Now write a letter to your school board expressing your view on whether students should or should not be required to perform community service. Defend your position with several detailed reasons. Develop those reasons with supporting examples.

11.

Writing Situation: Many students do not think the subjects they study in high school prepare them for the real world they will face after graduation. The principal at your school is asking students for their opinions about new courses that could be offered to prepare students for life after high school. What new course do you think should be offered?

Directions for Writing: Write a letter to convince the principal that your new course should be offered. Be sure to explain why your new course is needed, using specific examples and details.

12.

Writing Situation: Many public school systems across the country require students to wear uniforms. Some educators believe that wearing uniforms will help students concentrate more on their school work. On the other hand, some students argue that having to wear uniforms prevents them from expressing their individuality. Your principal is considering whether students at your school should wear uniforms.

Directions for Writing: Write a letter to your principal expressing your view on school uniforms. Provide convincing reasons and specific examples to support your position.

13.

Writing Situation: When your grades began to fall, your parents said that you would have to quit your part-time job. Because you must make your own car payments, this decision means that you will not be able to keep your car. You are concerned that you will get upset if you try to talk to your parents. Instead, you decide to write them.

Directions for Writing: Write your parents a letter in which you try to convince them that you should be given another chance to improve your grades without giving up your job and car. Make your argument clear, complete, and convincing.

14.

Writing Situation: Alvin Toffler, author of *Future Shock*, referred to modern society as the “throwaway” generation. As locations for garbage disposal fill to capacity, communities are faced with the problem of handling waste materials. The students in your civics class have studied ways to solve the waste problems in your school. They identified the problems in your school environment and considered alternative ways to reduce the quantity of waste. As spokesperson for the class, it is your job to persuade your school’s student body and administration to support their recommendations.

Directions for Writing: Write an editorial for the school newspaper in which you present the alternative solutions for reducing the quantity of solid waste in your school environment. Try to persuade your readers to support the proposed program. Include reasons, examples, and evidence to convince the readers to agree with your position.

15.

Writing Situation: Advancements made in health care have resulted in people living longer. Many Americans now live well beyond the age of 65. The older generation consists of people with various experiences, talents, and expertise. Many of these senior citizens have retired from the workforce and can now use their talents in the service of their community. Think of how your community could benefit from the contributions of these older Americans.

Directions for Writing: Write a paper to be presented at a meeting of the city council in which you describe your ideas for using the talents and expertise of senior citizens. Convince the city council that your community would benefit from using the services of senior citizens. Provide concrete evidence and supporting details.

16.

Writing Situation: A parent group from our school opposes the use of calculators in mathematics classrooms. The group argues that students “don’t know how to add and subtract

anymore” because they rely on calculators instead of doing the math operations by hand. This group plans to approach the school board to ask that the use of calculators be forbidden in all math classrooms. Decide whether you agree or disagree with the parent group.

Directions for Writing: Write a paper that will be read by the school board in which you clearly express your position on the use of calculators. Try to convince the board members to agree with your position using well developed arguments.

17.

Writing Situation: The principal at your school has instituted random locker and backpack/book bag searches to check for guns, knives, and other weapons. Anyone caught with these weapons will be immediately suspended. The principal argues that the random searches will not only guard against illegal weapons at school but will also help students feel safer. What is your position on this issue?

Directions for Writing: Write a letter to the editor of your local newspaper stating your position and supporting it with convincing reasons.

18.

Writing Situation: Your local public library has come under criticism for allowing patrons under the age of 18 to check out books that are unacceptable. The books are either explicit, describe graphic violence, or use questionable language. Most recently, a high school senior checked out James Joyce's *Ulysses*. The student's parents did not approve of the student reading the book and complained to the town council. As a result, the council is considering removing all questionable books from the library. What is your position on this issue?

Directions for Writing: Write a letter to the editor of your local newspaper stating your position and supporting it with convincing reasons.

19.

Writing Situation: A litter problem has developed on your school's campus. Students are throwing trash on the ground, leaving empty soda cans and bottles outside on benches, and dropping napkins and other trash on the cafeteria floor rather than carrying them to the trash can. Your principal has asked students to take more care, but the litter problem persists. The principal has reacted by canceling all after-school activities until the problem is taken care of. What is your position on this issue?

Directions for Writing: Write a letter to the editor of your local newspaper stating your position and supporting it with convincing reasons.

20.

Writing Situation: The state has created a plan to add a second highway exit to help shoppers access a busy shopping mall. The only problem is that the new exit will move the access road

500 yards closer to a near-by elementary school. Teachers and parents at the school complain that moving the road closer will increase noise at the school and provide unnecessary distractions. The state planners have included privacy fences to help cut down on the problems, but the protesters are unsatisfied. What is your position on this issue?

Directions for Writing: Write a letter to the editor of your local newspaper stating your position and supporting it with convincing reasons.

http://www.doe.k12.ga.us/_documents/curriculum/testing/ghswt.pdf

Expository Essay Prompts

1. **Writing Situation:** Modern technology has certainly helped to make our lives easier. Or has it? With all the technological advances we have today, it seems that we are busier than ever. Some historians could make the argument that the development of modern technology has actually made us a busier and more stressed society. Others could make the argument that technology has allowed us as a society to become more efficient and therefore more productive.

Directions for Writing: Write a paragraph about your opinion of modern technology and how it has affected our society.

2. **Writing Situation:** Although fear is a common human emotion, our response to it varies.

Directions for Writing: Using an example from literature, history, science, film, or your own experience or observation, write an essay analyzing a particular response to fear and the effect of that response.

3. **Writing Situation:** Today is “Sports Day.”

Directions for Writing: Describe your favorite sport or a sport that you would like to learn how to play.

4. **Writing Situation:** On August 2, 1776, the Declaration of Independence was signed.

Directions for Writing: If you were able to create a Declaration of Independence for your classroom, describe, in detail, one of the rights you would give the members of the classroom.

5. **Writing Situation:** On this day in 1790, the Coast Guard was established. The Coast Guard is a branch of the U.S. military and is involved with search and rescue, assisting mariners, and playing a role in maritime law. There are a number of branches in the U.S. military.

Directions for Writing: Write an essay explaining why the men and women of our military are so important?

6. **Writing Situation:** Today is National Aviation Day. The way we travel has dramatically changed over the years. Think about all the different ways we can fly: airplane, rocket, hot air balloon, etc. and then select one.

Directions for Writing: Write an essay to explain why this particular mode of flying is the best.

7. **Writing Situation:** Elizabeth Blackwell, the first woman doctor, was born in the year 1821. She had to overcome many obstacles to reach her goal of being the first woman doctor.

Directions for Writing: Write an essay explaining the type of obstacles you think she had to overcome in order to reach her goal of being the first woman doctor.

8. **Writing Situation:** On February 4, 1902, Charles Lindbergh was born. In 1927, Lindbergh became the first person to fly solo across the Atlantic Ocean. He made this trip in his plane which was called “The Spirit of St. Louis.”

Directions for Writing: Write an essay describing what you think this great voyage must have been like.

9. **Writing Situation:** There are many symbols of America and American history. Some include the Declaration of Independence, the Lincoln Memorial, the Statue of Liberty, the Capital Building and the White House.

Directions for Writing: Write an essay describing which national monument or symbol of America do you think best represents America? Why?

10. **Writing Situation:** Social norms are the rules that a group or society uses to determine appropriate and inappropriate values, beliefs, attitudes and behaviors. Bringing a gift to a birthday party, leaving a tip for a waiter in a restaurant, facing the door in an elevator, and saying please and thank you are examples of rules in society.

Directions for Writing: Write an essay to explain the importance rules in society.

11. **Writing Situation:** A career is a lifelong job. At some point in our adult lives, we are expected to take a career. Some consideration on how happy we expect to be in a career will be important.

Directions for Writing: Write an essay describing the career you would dislike the most.

12. **Writing Situation:**

Directions for Writing: Pick a musician (artist) that you enjoy; pick another musician (artist) that you dislike. List and support your reasons for your differing evaluations.

13. **Writing Situation:** As you approach high school graduation, you must start gaining skills to prepare you for an occupation. What occupation would you like to pursue?

Directions for Writing: Write an essay discussing 3 ways a foreign language would be of benefit in this occupation.

14. **Writing Situation:** Statistics show that over 50% of marriages in the United states end in divorce. Many people are impacted by a divorce.

Directions for Writing: Write an essay describing on whom and what effect divorce has?

15. **Writing Situation:** In 1955, Rosa Parks was arrested and fined for not giving up her seat on the bus to a white passenger. Many people admired her for her confidence and bravery.

Directions for Writing: If you had been Rosa Parks in this situation, would you have done the same thing? Write an essay explaining why or why not?

16. **Writing Situation:** After suffering an accident and an eye infection, Louis Braille went blind at age three. He later went on to invent Braille, a raised dot system that is still used today by blind people for reading and writing.

Directions for Writing: Write an essay describing how your life would be different if you were blind?

17. **Writing Situation:** Today is “Make Your Dreams Come True Day.” What are your dreams?

Directions for Writing: Write an essay about the dreams you have for your future. Explain how you are going to make them come true.

18. **Writing Situation:** Buying a car can be a very big financial move. Your friend wants to pay for a car upfront with cash because it saves you a great deal of money in interest payments to the bank and ensures that the car is yours. However, it can be difficult to save money.

Directions for Writing: Write a letter to your friend providing the reader with the ways to save money and explain why they are the best ways.

19. **Writing Situation:** Physical exercise is any bodily activity that enhances or maintains [physical fitness](#) and overall [health](#) or wellness. It is performed for various reasons.

Directions for Writing: Write an essay describing the benefits of exercise providing good examples

20. **Writing Situation:** Eli Whitney is well-known for his invention of the cotton gin. This machine made the harvesting of cotton much easier for the early farmers.

Directions for Writing: What is an invention you could create that would help someone complete a job around your house? Write an essay to explain your invention, what it does, and why it will help.

APPENDIX C

Pre-intervention procedure fidelity checklist.

Put a check for each step completed by the teacher. This check sheet will be compared against an identical check sheet completed by the instructor.

- A visual and oral description that successful essays are consistently focused on the assigned topic.
- Students are told not to go off topic.
- A visual and oral description that successful essays are consistently focused on the purpose.
- Students are told to consider whether or not they are providing information or arguing a point.
- A visual and oral description that successful essays are consistently focused on the audience.
- The students are told to think about who will read the essay.
- Students are visually and orally informed that an essay has an effective introduction, body, and conclusion.
- Students will be told that when writing they should present supporting ideas that are fully elaborated with specific examples and details.

APPENDIX D

Appendix A

Statement PIE instructional procedures.

Put a check for each step completed by the teacher. This check sheet will be compared against an identical check sheet completed by the instructor.

Discuss it.

- Students will be told that they are going to learn a new writing trick to help them write informational essays, also called *expository* essays. These essays are the type that tell the reader what you know and think about a topic.
- The instructor will facilitate a conversation about the words expository and essay to be sure they make sense to the students.
- The students will then be presented with a visual of the mnemonic IBC as the trick to remember the parts to writing a good essay, a) Introduction, b) Body, and c) Conclusion.
- The instructor will provide an overview and rationale of each step in IBC and explain new terminology.
- The students will then be presented with a visual of the mnemonic, *Statement PIE*, as the trick to remember what to put in each body paragraph. For a good essay, students will need to understand that a body has three Statement PIES.
- The instructor will provide an overview and rationale of each step in Statement PIE and explain new terminology.
- Students will be told that the statement is the main idea or topic of a paragraph.
- The instructor will facilitate a discussion of attributes of statements to help students become better at writing meaningful statements. Statements often deal with a) the parts of an object or event, b) actions performed on a specific object or event, c) a chronological sequence or series of events, or d) a problem characterizing idea.
- The PIE is described as all of the pieces of a PIE to make it whole and lead others to believe your statement (a) Proof, b) Information, and c) Examples) to support the statement.

Develop background knowledge.

- The instructor will facilitate the discussion to be sure students understand that a good essay explains the topic to the reader, make the reader believe, and good expository essays make sense and have several parts.
- The instructor will discuss the parts found in a good expository essay, using Statement-PIE as a guide
- The instructor will introduce transitions words as words that provide smooth changes from one idea to another (e.g. first, second, also, another reason, etc...).

- The class will brainstorm transition words and create their own list of transition words they prefer to use when writing essays.
 - The instructor will explicitly direct the students to consider perspective taking in the context of popular persuasive writing audiences (e.g. school principal, parents, editor of a newspaper).
 - To elicit perspective taking, the instructor will teach students to “store information about others” and make “smart guesses” as described in the curriculum, *Thinking about You, Thinking about Me*, 2nd edition (Winner, 2007).
 - Students will be provided a drawing depicting a human body with a vertical line splitting the body in two represents the thoughts, interests, and experience of an individual as the right half of a person.
 - Students will be directed to fill this information onto the drawing.
 - The students will discuss how the left half of the person is devoted to files of information on others that can be used to make guesses about their perspectives on topics. A file folder (similar to one that is used as an icon on a computer) is depicted in the head of the body.
 - After a discussion of the thoughts, interests, and experiences of individuals such as school principals, parents, and other adults in the community, students will fill in information on the body drawing. This product will be kept in the notebook and used again during the model it stage to facilitate students suspending their judgment to understand both sides of the argument.
 - Students will be presented with the term self-management. It will be defined as a management strategy designed to teach students to engage in actions that change or maintain a particular behavior. In this case, the behavior is writing good essays.
 - Students will be provided directions on how to count and self-graph the number of elements in an essay while the instructor models and verbalizes how to graph number of functional elements.
 - The teacher will provide students their baseline essays and they will practice graphing the number of functional essay elements.
 - In addition to self-management, goal setting will be a second self-regulatory behavior discussed in this phase of instruction.
 - Students will consider baseline performance and be encouraged to set a goal of 50% increase at minimum.
- Model it.***
- To model the strategy use, the instructor will provide each student with the strategy organizer and present one on the SmartBoard while she models the strategy by writing an essay while verbalizing the process as if “thinking out loud.”
 - Students will be instructed on the term, self-instruction. It is defined as what the students are to think as they use the strategy to guide them through their planning and writing.

- Students will be instructed on the term, self-statements, as encouraging statements to say to one's self to think of good ideas while planning, to motivate while working, and to check work.
- The instructor will facilitate a discussion of what writers say to themselves during the writing process and how to make that productive.
- During the teacher modeling, she will verbalize self-instructions and self-statements students are encouraged do so silently while engaging in the writing process.
- The students will be encouraged to record the self-statements for future use.

Memorize it.

- Through a number of short activities, the students will memorize the parts of the strategy. The students may paraphrase the steps of the strategy as long as the meaning remains.
- The students will practice the self-statements from their own generated list.

Support it.

- Sample essays, both good and poor quality, will be used to backward plan (take information from the essay and write into the graphic organizer), and evaluate for completeness, use of transition words and meeting the qualities of a good essay.
- The instructor will provide students with writing prompts and ask them to practice the strategy.
- The instructor will direct and monitor the process while the students write the essays.

Independent performance.

- The teacher will direct the students in independent performance requiring that the students practice writing two or three essays using the strategy and self-regulatory strategies.
- The materials will be made available to the students at first, but will be faded once students make a 50% increase of functional elements over baseline data.
- Students will then be required to independently write an essay without materials.
- Once students meet the criteria of 50% increase in functional elements over baseline without materials, strategy instruction is complete.

APPENDIX E

STOP & DARE instructional procedures.

Put a check for each step completed by the teacher. This check sheet will be compared against an identical check sheet completed by the instructor.

STOP & DARE instructional procedures.***Discuss it.***

- Students will be told that they are going to learn a new writing trick to help them write opinion essays, also called *persuasive* essays. These essays are the type that tells the reader what you know and think about a topic.
- The instructor will facilitate a conversation about the words persuasive and essay to be sure they make sense to the students.
- The students will then be presented with a visual of the mnemonic DARE as the trick to remember the four parts of writing a persuasive essay, each as a paragraph (Develop your topic, Add support your opinion, Reject the arguments form others, End with a conclusion).
- The instructor will provide an overview and rationale of each step in DARE and explain new terminology.
- The instructor will then present STOP visual and explain that this strategy reminds students to stop, reflect, and plan before writing a persuasive essay. It requires the students to Suspend their judgment to get ideas for both sides of the argument, Take a side, Organize ideas, Plan more as they write.

Develop background knowledge.

- The instructor will facilitate the discussion to be sure students understand that a good essay explains the topic to the reader, make the reader believe, and good persuasive essays make sense and have several parts.
- The instructor will discuss the parts found in a good persuasive essays, using STOP & DARE as a guide.
- The instructor will introduce transitions words as words that provide smooth changes from one idea to another (e.g. first, second, also, another reason, etc...).
- The class will brainstorm transition words and create their own list of transition words they prefer to use when writing essays. During this phase of instruction, two self-regulation strategies are introduced.
- The instructor will explicitly direct the students to consider perspective taking in the context of popular persuasive writing audiences (e.g. school principal, parents, editor of a newspaper).
- To elicit perspective taking, the instructor will teach students to “store information about others” and make “smart guesses” as described in the curriculum, *Thinking about You, Thinking about Me*, 2nd edition (Winner, 2007).

- Students will be provided a drawing depicting a human body with a vertical line splitting the body in two represents the thoughts, interests, and experience of an individual as the right half of a person.
 - Students will be directed to fill this information onto the drawing.
 - The students will discuss how the left half of the person is devoted to files of information on others that can be used to make guesses about their perspectives on topics. A file folder (similar to one that is used as an icon on a computer) is depicted in the head of the body.
 - After a discussion of the thoughts, interests, and experiences of individuals such as school principals, parents, and other adults in the community, students will fill in information on the body drawing. This product will be kept in the notebook and used again during the model it stage to facilitate students suspending their judgment to understand both sides of the argument.
 - Students will be exposed to self-management. It will be defined as a management strategy designed to teach students to engage in actions that change or maintain a particular behavior. In this case, the behavior is writing good essays.
 - Students will be provided directions on how to count and self-graph the number of elements in an essay while the instructor models and verbalizes how to graph number of functional elements.
 - The teacher will provide students their baseline essays and they will practice graphing the number of functional essay elements.
 - In addition to self-management, goal setting will be a second self-regulatory behavior discussed in this phase of instruction.
 - Students will consider baseline performance and be encouraged to set a goal of 50% increase at minimum.
- Model it.***
- To model the strategy use, the instructor will provide each student with the STOP & DARE organizer and present one on the SmartBoard
 - The instructor will model the strategy by writing an essay while verbalizing the process as if “thinking out loud.”
 - The teacher will describe self-instruction as what the students are to think as they use the strategy to guide them through their planning and writing.
 - The teacher will describe self-statements as encouraging statements to say to one’s self to think of good ideas while planning, to motivate while working, and to check work.
 - The instructor will facilitate a discussion of what writers say to themselves during the persuasive writing process and how to make that productive.
 - The teacher will model writing an essay using the strategy and verbalizing self-instructions and self-statements that students are encouraged do silently while engaging in the writing process.
 - The students will be encouraged to record the self-statements for future use.

Memorize it.

- Through a number of short activities, the students will memorize the parts of STOP & DARE. The students may paraphrase the steps of the strategy as long as the meaning remains.
- The students will also practice the self-statements from their own generated list.

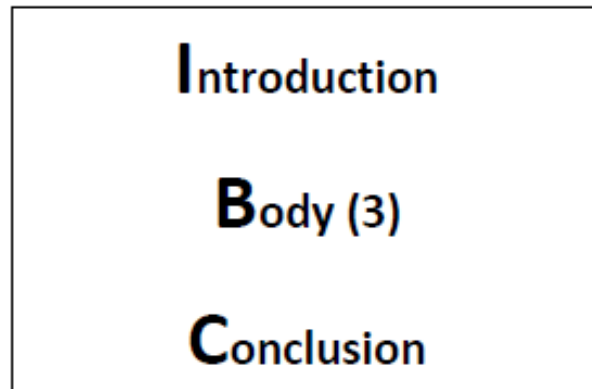
Support it.

- Sample persuasive essays, both good and poor quality, will be used to backward plan (take information from the essay and write into the graphic organizer), and evaluate for completeness, use of transition words and meeting the qualities of a good essay
- The instructor will provide students with writing prompts and ask them to practice the strategy.
- The instructor will direct and monitor the process while the students write the essays.

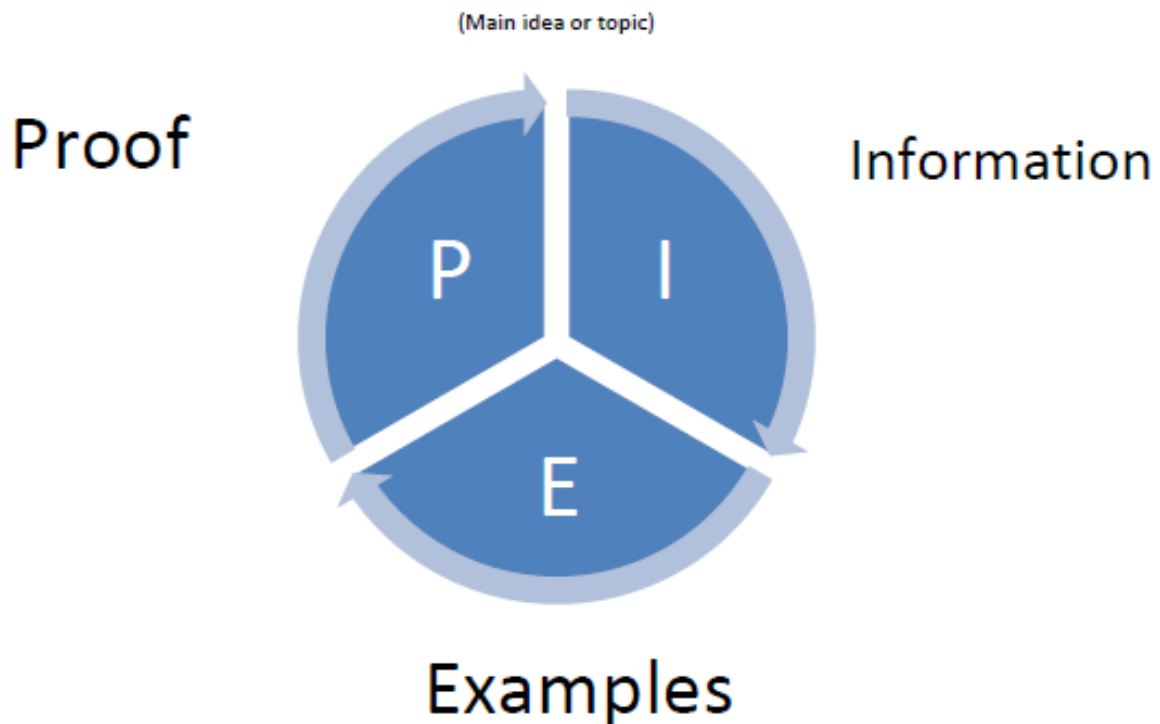
Independent performance.

- Independent performance requires that the students practice writing two or three essays using the STOP & DARE strategy and self-regulatory strategies.
- The materials will be made available to the students at first, but will be faded once students make a 50% increase of functional elements over baseline data. S
- Students will then be required to independently write a persuasive essay without materials.
- Once students meet the criteria of 50% increase in functional elements over baseline without materials, strategy instruction is complete

APPENDIX F



Statement



APPENDIX G

Suspend judgment

Take a side

Organize ideas

Plan more as you write



&

Develop a topic sentence

*Topic defined * Tell both sides of the issue * Make a point

Add supporting ideas

Reject arguments for the other side

End with a conclusion

*Restate topic paragraph ideas

APPENDIX H

Introduction:

- Describe topic
- Re-write the prompt
- Tell the reader what you are going to write about.



Body:

Statement: _____
P: _____
I: _____
E: _____



Statement: _____
P: _____
I: _____
E: _____



Statement: _____
P: _____
I: _____
E: _____

Conclusion:

- What was your topic again?
- Restate each Statement
- Give some advice

APPENDIX I

STOP

Suspend judgment. Brainstorm ideas for and against the topic.

For	Against
⊖	⊖
⊖	⊖
⊖	⊖
⊖	⊖
⊖	⊖

Take a side. Read your ideas and decide on the side you will take. Place a “+” at the top of the side that shows your position.

Organize ideas. Choose ideas that are strong (and an argument to refute) and decide how to organize them for writing.

Plan more as you write. Continue to plan as you write. Use all four essay parts:

DARE

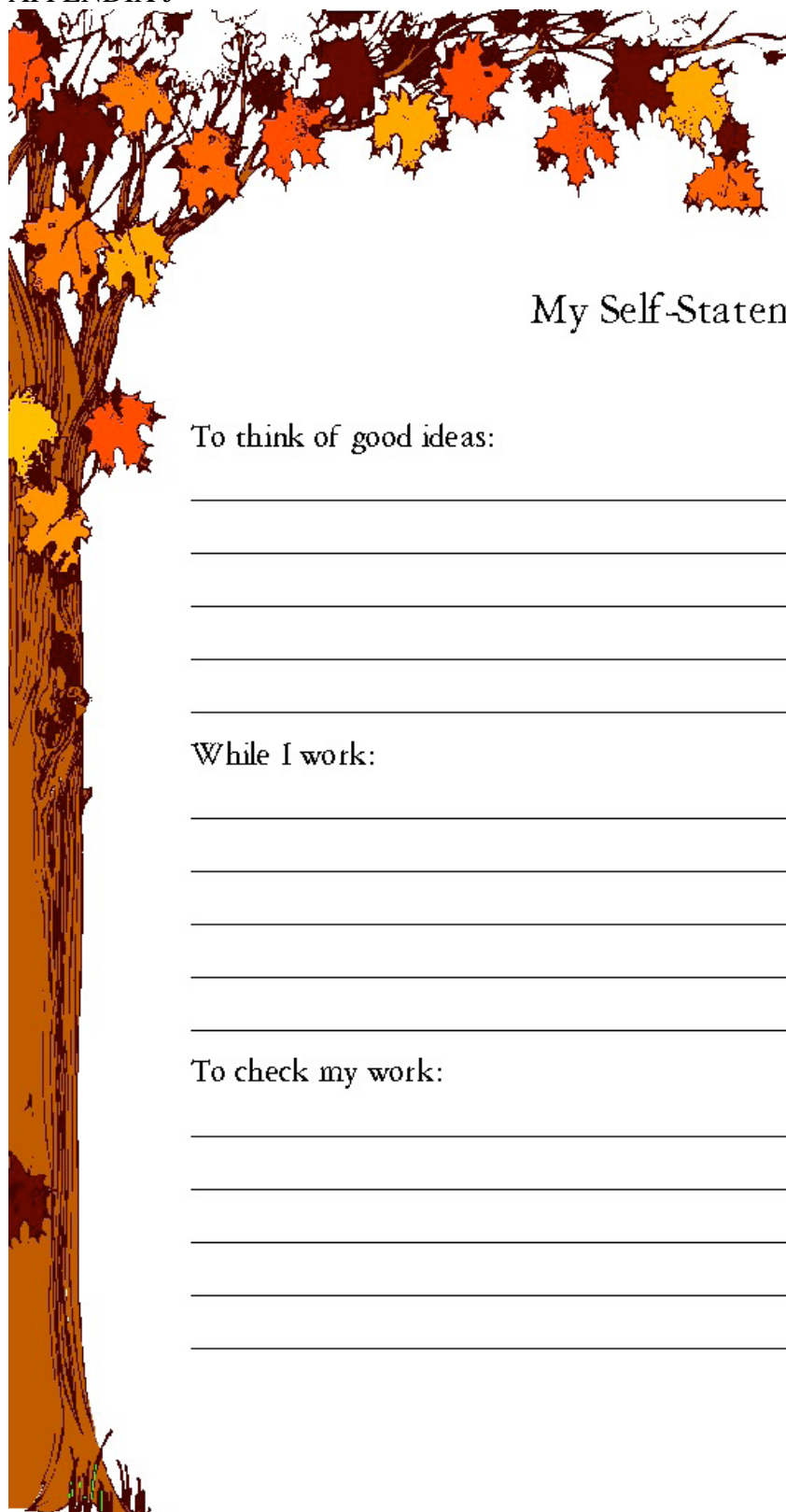
*Develop your topic paragraph (Topic defined*Both sides of the issue*Make a Point)*

Add supporting ideas

Reject arguments for the other side

End with a conclusion paragraph (Restate Topic Paragraph Ideas)

APPENDIX J



My Self-Statements

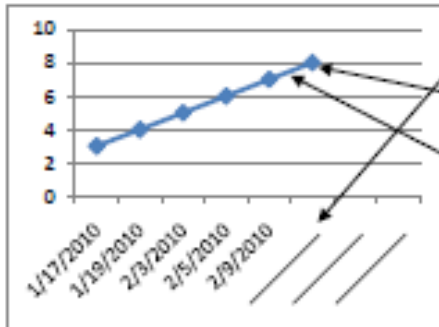
To think of good ideas:

While I work:

To check my work:

APPENDIX K

How to Graph Number of Functional Elements



1. Write the date on your graph on the next available line along the x axis (bottom).
2. Determine the number of functional elements in your essay.
3. Mark the point where the number of words written along the y axis (side) meets the date on the x axis (bottom).
4. Connect this point to the previous point.
5. Determine if your line is going up or down.
6. If your line went up, you are improving so tell yourself, "Good job!"
7. If you line went down or stayed the same, you did not improve this time so tell yourself, "I'll try to include more functional elements next time."

APPENDIX M

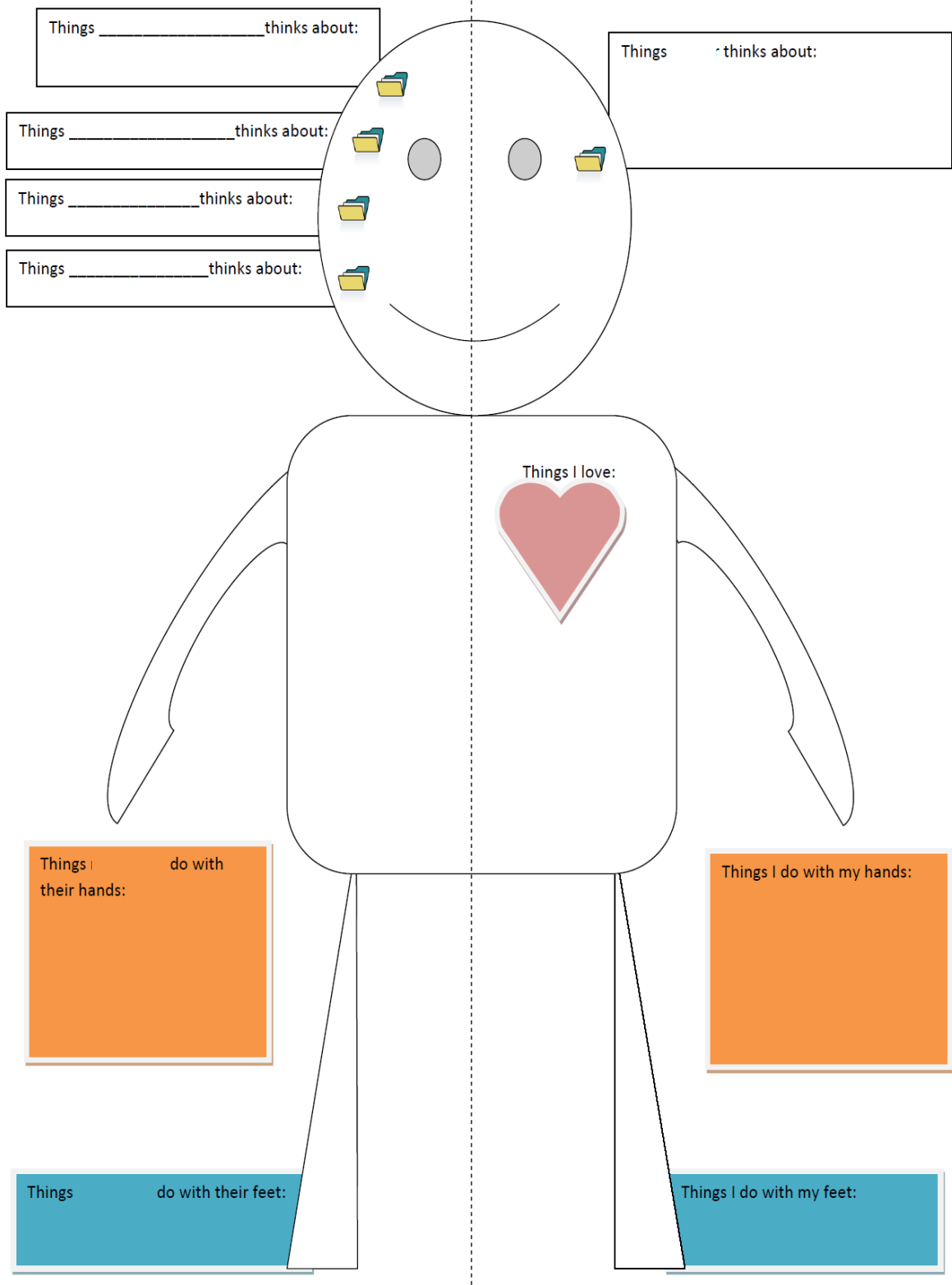
6+1 Traits® Condensed 5-Point 3-12 Writer's Rubric aka One Pager

Ideas: The main message of the piece, the theme, with supporting details that enrich and develop that theme.	Organization: The internal structure, thread of central meaning, logical and sometimes intriguing pattern or sequence of the ideas.	Voice: The unique perspective of the writer evident in the piece through the use of compelling ideas, engaging language, and revealing details.
<p>Ⓢ <i>This paper is clear and focused. It holds the reader's attention. Relevant anecdotes and details enrich the central theme.</i></p> <p>A. The topic is narrow and manageable B. Relevant, telling, quality details go beyond the obvious C. Ideas are crystal clear and supported with details D. Writing from knowledge or experience; ideas are fresh and original E. Reader's questions are anticipated and answered. F. Insightful topic</p>	<p>Ⓢ <i>The organizational structure of this paper enhances and showcases the central idea or theme of the paper; includes a catchy introduction and a satisfying conclusion.</i></p> <p>A. An inviting introduction draws the reader in; a satisfying conclusion leaves the reader with a sense of closure and resolution. B. Thoughtful transitions connect ideas. C. Sequencing is logical and effective. D. Pacing is well controlled. E. The title, if desired, is original. F. Organizational structure is appropriate for purpose and audience; paragraphing is effective.</p>	<p>Ⓢ <i>The writer of this paper speaks directly to the reader in a manner that is individual, compelling, engaging, and shows respect for the audience.</i></p> <p>A. Uses topic, details, and language to strongly connect with the audience. B. Purpose is reflected by content and arrangement of ideas. C. The writer takes a risk with revealing details. D. Expository or persuasive reflects understanding and commitment to topic. E. Narrative writing is honest, personal, and engaging.</p>
<p>Ⓢ <i>The writer is beginning to define the topic, even though development is still basic or general.</i></p> <p>A. The topic is broad B. Support is attempted C. Ideas are reasonably clear D. Writer has difficulty going from general observations about topic to specifics E. The reader is left with questions F. The writer generally stays on topic</p>	<p>Ⓢ <i>The organizational structure is strong enough to move the reader through the text without too much confusion.</i></p> <p>A. The paper has a recognizable introduction and conclusion. B. Transitions sometimes work. C. Sequencing shows some logic, yet structure takes attention away from the content. D. Pacing is fairly well controlled. E. A title, if desired, is present. F. Organizational structure sometimes supports the main point or story line, with an attempt at paragraphing.</p>	<p>Ⓢ <i>The writer seems sincere, but not fully engaged or involved. The result is pleasant or even personable, but not compelling.</i></p> <p>A. Attempt to connect with audience is earnest but impersonal. B. Attempts to include content and arrangement of ideas to reflect purpose. C. Occasionally reveals personal details, but avoids risk. D. Expository or persuasive writing lacks consistent engagement with the topic. E. Narrative writing reflects limited individual perspective.</p>
<p>Ⓢ <i>The paper has no clear sense of purpose or central theme. The reader must make inferences based on sketchy or missing details.</i></p> <p>A. The writer is still in search of a topic B. Information is limited or unclear or the length is not adequate for development C. The idea is a simple restatement or a simple answer to the question D. The writer has not begun to define the topic E. Everything seems as important as everything else F. The topic may be repetitious, disconnected, and contains too many random thoughts</p>	<p>Ⓢ <i>The writing lacks a clear sense of direction.</i></p> <p>A. No real lead or conclusion present. B. Connections between ideas, if present, are confusing. C. Sequencing needs work. D. Pacing feels awkward. E. No title is present (if requested). F. Problems with organizational structure make it hard for the reader to get a grip on the main point or story line. Little or no evidence of paragraphing present.</p>	<p>Ⓢ <i>The writer seems uninvolved with the topic and the audience.</i></p> <p>A. Fails to connect with the audience. B. Purpose is unclear. C. Writing is risk free, with no sense of the writer. D. Expository or persuasive writing is mechanical, showing no engagement with the topic. E. Narrative writing lacks development of a point of view.</p>
<p>Key Question: <i>Did the writer stay focused and share original and fresh information or perspective about the topic?</i></p>	<p>Key Question: <i>Does the organizational structure enhance the ideas and make it easier to understand?</i></p>	<p>Key Question: <i>Would you keep reading this piece if it were longer?</i></p>

6+1 Traits® Condensed 5-Point 3-12 Writer's Rubric aka One Pager

<p>Word Choice: The use of rich, colorful, and precise language that moves and enlightens the reader.</p>	<p>Sentence Fluency: The rhythm and flow of the language, the sound of word patterns, the way in which the writing plays to the ear, not just to the eye.</p>	<p>*Conventions: The mechanical correctness of the piece; spelling, punctuation, capitalization, grammar usage, and paragraphing.</p>
<p>Ⓢ <i>Words convey the intended message in a precise, interesting, and natural way.</i></p> <p>A. Words are specific and accurate. B. Striking words and phrases create imagery. C. Natural, effective and appropriate language. D. Lively verbs, specific nouns and modifiers. E. Language enhances and clarifies meaning. F. Precision is obvious by choice of words and phrases.</p>	<p>Ⓢ <i>The writing has an easy flow, rhythm and cadence. Sentences are well constructed.</i></p> <p>A. Sentences enhance the meaning. B. Sentences vary in length as well as structure. C. Purposeful and varied sentence beginnings. D. Creative and appropriate connectives. E. The writing has cadence.</p>	<p>Ⓢ <i>The writer demonstrates a good grasp of standard writing conventions (e.g., spelling, punctuation, capitalization, grammar usage, paragraphing)</i></p> <p>A. Spelling is generally correct. B. Punctuation is accurate. C. Capitalization skills are present. D. Grammar and usage are correct. E. Paragraphing tends to be sound. F. The writer may manipulate and/or edit for stylistic effect; and it works!</p>
<p>Ⓢ <i>The language is functional, even if it lacks much energy.</i></p> <p>A. Words are adequate and correct in a general sense. B. Familiar words and phrases communicate. C. Attempts at colorful language. D. Passive verbs, everyday nouns, mundane modifiers E. Language functions, with one or two fine moments. F. Occasionally, the words and phrases show refinement and precision</p>	<p>Ⓢ <i>The text hums along with a steady beat, but tends to be more pleasant or businesslike than musical.</i></p> <p>A. Sentences get the job done in a routine fashion. B. Sentences are usually of similar length, yet constructed correctly. C. Sentence beginnings are sometimes varied. D. The reader sometimes has to hunt for connective clues. E. Parts of the text invite expressive oral reading; other parts may be stiff, awkward, choppy, or gangly.</p>	<p>Ⓢ <i>The writer shows reasonable control over a limited range of standard writing conventions</i></p> <p>A. Spelling is usually correct or reasonably phonetic on common words. B. End punctuation is usually correct. C. Most capitalized words are correct. D. Problems with grammar and usage are not serious. E. Paragraphing is attempted. F. Moderate, inconsistent editing (a little of this, a little of that).</p>
<p>Ⓢ <i>The writer struggles with a limited vocabulary</i></p> <p>A. Words are nonspecific or distracting. B. Many of the words don't work. C. Language is used incorrectly. D. Limited vocabulary, misuse of parts of speech. E. Language is unimaginative and lifeless. F. Jargon or clichés, persistent redundancy.</p>	<p>Ⓢ <i>The reader has to practice quite a bit in order to give this paper a fair interpretive reading.</i></p> <p>A. Sentences are choppy, incomplete, rambling, or awkward. Phrasing does not sound natural. B. No "sentence sense" present. C. Sentences begin the same way. D. Endless connectives, if any present. E. Writing does not invite expressive oral reading.</p>	<p>Ⓢ <i>Errors in spelling, punctuation, capitalization, usage and grammar and/or paragraphing repeatedly distract the reader and make text difficult to read.</i></p> <p>A. Spelling errors are frequent. B. Punctuation missing or incorrect. C. Capitalization is random. D. Errors in grammar or usage are very noticeable. E. Paragraphing is missing. F. Little, if any, editing; the reader must read once to decode, then again for meaning.</p>
<p>Key Question: <i>Do the words and phrases create vivid pictures and linger in your mind?</i></p>	<p>Key Question: <i>Can you FEEL the words and phrases flow together as you read it aloud?</i></p>	<p>Key Question: <i>How much editing would have to be done to be ready to share with an outside source?</i></p> <ul style="list-style-type: none"> • A whole lot? Score in the 1-2 range. • A moderate amount? Score in the 3 range. • Very little? Score in the 4-5 range.
<p><i>*Expectations for Conventions should be based on grade level and include only those skills that have actually been taught.</i></p>		

APPENDIX N



APPENDIX O

Writing Session (Probe, Post-intervention, and Maintenance) Procedural Fidelity

Mark a + for each step completed by the instructor. Mark a - for each step not observed.

Date:																			
Strategy:																			
Condition:																			
Observer:																			
The writing topic was presented orally to each student.																			
The writing topic was presented in writing to each student.																			
The instructor told students to respond to a prompt to the best of their ability and express themselves freely.																			
Students were told to start by planning and raise their hand when ready to start drafting.																			
Students were instructed to turn in the paper immediately after finishing the essay.																			
No instructions on organization, length or inclusion of functional elements were provided.																			
No other behavioral contingencies were in effect to increase the essay.																			
The researcher provided the student with social reinforcement upon completion of the essay by saying, "Great! You completed your essay!" or "Thanks for your effort!"																			

Strategy: 1 - Expository; 2 - Persuasive

Condition: A-Baseline; B - Post strategy Instruction; C - Maintenance

APPENDIX P

Student Questionnaire

My Name: _____ Date: _____

1. It is important for me to write longer essays.

1	3	5
Not	Somewhat	Very
Important	Important	Important

2. It is important for me to write more organized essays.

1	3	5
Not	Somewhat	Very
Important	Important	Important

3. I liked this writing program.

1	3	5
I Did Not	Somewhat	I Really
Like It.	Liked	Liked It.

4. I liked graphing my scores each day.

1	3	5
I Did Not	Somewhat	I Really
Like It.	Liked	Liked It.

5. I learned to write longer essays.

1	3	5
Definitely	Somewhat	Definitely
Not		

6. I support my opinion in an essay better now.

1	3	5
Definitely	Somewhat	Definitely
Not		

Student Questionnaire

My Name: _____ Date: _____

1. It is important for me to write longer essays.

1	3	5
Not Important	Somewhat Important	Very Important

2. It is important for me to write more organized essays.

1	3	5
Not Important	Somewhat Important	Very Important

3. I liked this writing program.

1	3	5
I Did Not Like It.	Somewhat Liked	I Really Liked It.

4. I liked graphing my scores each day.

1	3	5
I Did Not Like It.	Somewhat Liked	I Really Liked It.

5. I learned to write longer essays.

1	3	5
Definitely Not	Somewhat	Definitely

6. I support my opinion in an essay better now.

1	3	5
Definitely Not	Somewhat	Definitely