TEACHING CHILDREN WITH SPECIFIC LANGUAGE IMPAIRMENT TO PLAN AND
REVISE COMPARE-CONTRAST TEXTS

By

Mei Shen

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Special Education – Doctor of Philosophy

2015

ABSTRACT

TEACHING CHILDREN WITH SPECIFIC LANGUAGE IMPAIRMENT TO PLAN AND
REVISE COMPARE-CONTRAST TEXTS

By

Mei Shen

Children with specific language impairment (SLI) experience significant difficulties with writing

due to their deficits in language, phonological processing, and working memory. This study used

a multiprobe multiple baseline single-case experimental design to investigate the efficacy of

planning and revising strategy instruction on the compare-contrast expository writing

performance of fourth to sixth graders with SLI. Strategy instruction in planning also was

compared with a sequenced intervention package of planning and revising. Maintenance probes

were administered four weeks after the writing instruction ceased. Potential generalization of the

intervention effects to writing essays of another uninstructed but related expository text structure,

explanation, as well as the impact of strategy instruction on writing self-efficacy were examined.

The results showed that all three students with SLI spent time on advanced planning and

generated quality written plans after receiving the planning instruction. The students also wrote

longer compare-contrast essays, included more text structure elements, and demonstrated better

overall writing quality. After receiving the added revising instruction, all the students

demonstrated increases in writing accuracy but decreases in planning time, quality of written

plans, length, and text structure elements. The added revising instruction didn't substantially

contribute to overall essay quality, either. The gains from the writing instruction were maintained

for at least four weeks. The positive gains from the planning and the revising instruction were

also found to generalize to writing explanation essays. Two of the students showed enhanced

writing self-efficacy after receiving the planning and revising instruction, whereas the third

student showed a decline in self-efficacy, possibly indicating that the writing instruction helped

this student develop a more realistic perceived competence for writing performance.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my advisor, Dr. Gary Troia, for providing great advice and support to me throughout my doctoral study. I learned from him how to conduct rigorous research, from recruiting participants to publishing manuscripts, how to keep passion for my work while staying calm and seeking solutions when encountering difficulties, and how to maintain high expectations of myself for conducting research and delivering instruction. All these valuable experiences have enabled me to grow as a scholar with clear goals, capability, and confidence, perform well in my teaching, and give back to the academic community through my service.

I would like to also expand my deep gratitude to my dissertation committee members, Dr. Carol Sue Englert, Dr. Troy Mariage, and Dr. Joshua Plavnick. Without their great advice and comments, I wouldn't have been able to complete this dissertation with such rigor and hence contribute to the field of writing research. I have been a teaching assistant for Dr. Englert for five years and I learned from her how to maintain a passion for literacy instruction and how to deliver high quality teaching to our undergraduate future educators. Working as a teaching and course development assistant for Dr. Mariage inspired me. Moreover, he truly cares for every doctoral student in our program and I always enjoyed sharing with him my experiences with research and teaching and asking him for advice. Dr. Plavnick, who is an expert in single-case design, provided me with great advice on my dissertation research design. He always gave great feedback to make sure my research was thoughtfully planned and executed.

I would like to thank Dr. Cindy Okolo, who taught me how to become a good instructor to help our online graduate students teach struggling students with technology; I would like to

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE
INTRODUCTION

Writing is a critical literacy skill that has been playing an increasingly important role in everyday life (Graham & Perin, 2007). Children need to demonstrate sufficient writing abilities to meet the school curriculum requirements for writing and to succeed in their classes. They also need to use writing as a tool to communicate with others by texting, blogging, emailing, and so forth and fully participate in social and civic activities. However, children with specific language impairment (SLI) have been found to experience difficulties with many aspects of writing (Mackie & Dockrell, 2004; Nelson, Roth, & Van Meter, 2009). Compared to peers of a comparable chronological age, children with SLI compose shorter texts (Dockrell, Lindsay, & Connelly, 2009), demonstrate a limited ability to generate and organize ideas, display many errors in grammar, spelling, and other writing conventions (Dockrell & Connelly, 2009), and show poorer overall writing quality (Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004).

Writing Strategy Instruction

Strategy instruction focused on planning and revising has been found to be effective in improving writing outcomes for struggling writers (average effect size = 0.82), specifically students with learning disabilities (LD; Graham & Perin, 2007). Explicit planning strategy instruction has been adopted to help children generate and organize content for papers across different genres such as stories and personal narratives (Saddler, 2006; Tracy, Reid, & Graham, 2009), expository papers (MacArthur & Philippakos, 2010), and persuasive essays (Monroe & Troia, 2006). The targeted population in much of the research is children in the late elementary grades (Troia & Graham, 2002) and middle school grades (De La Paz, 2001, 2005). Some studies also focus on teaching younger writers (Harris, Graham, & Mason, 2006) and adults (MacArthur & Lembo, 2009) to plan. Struggling writers who receive planning strategy

instruction have been found to spend more time planning in advance of composing text (Deatline-Buchman & Jitendra, 2006) and to write longer texts (De La Paz & Graham, 2002) which include more story elements (Saddler & Asaro, 2007) or functional essay elements (MacArthur & Lembo, 2009). Their written products also demonstrate enhanced overall text quality (Lienemann et al, 2006; Tracy, Reid, & Graham, 2009). In addition, gains from the planning strategy instruction are well maintained for 4 to 6 weeks after the instruction ends (Graham, Harris, & Mason, 2005). The positive effects of strategy instruction also generalize to student's writing in some uninstructed genres (Graham, Harris, & Mason, 2005; Harris, Graham, & Mason, 2006).

Revising is challenging in that poor writers tend to revise their papers more at a superficial level, i.e., focusing on writing convention errors such as spelling, punctuation, and capitalization, rather than at a substantial level, i.e., the content, organization, and rhetorical goals. Thus, their revising efforts tend to have a very limited impact on text quality (MacArthur, Schwartz, & Graham, 1991). Different revising strategies such as Compare, Diagnose, Operate (CDO; De La Paz, Swanson, & Graham, 1998; Scardamalia & Bereiter, 1983), peer revising (Stoddard & MacArthur, 1993), and setting revising goals (Midgette, Haria, & MacArthur, 2008) have been taught to struggling writers (mostly students with learning disabilities) ranging in genres such as personal narrative (Graham, MacArthur, & Schwartz, 1995), expository (Graham & MacArthur, 1988), and persuasive (Midgette, Haria, & MacArthur, 2008). The results from most of these studies have shown that revising strategy instruction contributes to more substantial revisions at both local (i.e., mechanical) and global (i.e., content and organization) levels. Students' overall writing quality also has been improved.

Rationale of the Study

Given the documented efficacy of strategy instruction for planning and revising (Midgette, Haria, & MacArthur, 2008; Tracy, Reid, & Graham, 2009; Troia & Graham, 2002), this study will add to the growing body of literature on writing strategy interventions and inform teacher practice in this area. Moreover, this study addresses a critical gap in the extant research because a) relatively few studies have examined strategies for expository writing, b) only a few studies have endeavored to teach students to write compare-contrast essays (e.g., Englert, Raphael, Anderson, Anthony, & Stevens, 1991; MacArthur & Philippakos, 2010; Wong, 1997), a less common form of exposition that could help with content area learning, and c) so few studies (e.g., De La Paz, 2001) have focused on students with SLI.

It is worth mentioning that although the writing difficulties of students with SLI have been well documented, students who comprise the second largest group of students with disabilities in schools (after children with LD), this population has been largely ignored in the writing intervention research. As a matter of fact, SLI and LD are closely related in that many children with SLI in early childhood or primary grades go on to be identified as LD or SLI/LD later (Nelson, Roth, & Van Meter, 2009). They also share many characteristics with LD students in terms of writing problems: (a) having difficulties with generating and organizing ideas, (b) composing shorter texts, (c) exhibiting large numbers of mechanical errors, and (d) lacking self-regulation skills (possibly due to deficits in executive functioning) (Campbell & Skarakis-Doyle, 2007). Therefore, it is believed that the potential for leveraging the body of research targeting LD students to design writing interventions for children with SLI is strong and appropriate. The efficacy of the planning instruction will be directly investigated, and will also be compared with a combined strategies intervention package of planning and revising for children with SLI.

Research Questions

This study aims to investigate the efficacy of planning and revising strategy instruction on the compare-contrast expository writing of fourth- to sixth-graders with SLI. Instruction in planning will be compared with a combined strategies intervention package consisting of sequential planning and revising. The Self-Regulated Strategy Development (SRSD) model, as an effective instructional framework (Jacobson & Reid, 2010; Mason & Graham, 2008; Saddler & Asaro, 2007; Troia & Graham, 2002), will be adopted to facilitate teaching of writing strategies and self-regulation skills in this study. The students will also be asked to complete explanation writing prompts to examine the potential generalization effects of the writing instruction. A motivation rating scale and a satisfaction survey will be given to examine the impact of the writing instruction on the students' writing self-efficacy beliefs and their perception of the strategy instruction, respectively.

The research questions are:

1) What is the efficacy of planning strategy instruction on the compare-contrast writing performance of students with SLI (in terms of length, accuracy, text structure elements, and quality)?

2) What is the efficacy of sequential planning and revising strategy instruction on the compare-contrast writing performance of students with SLI (in terms of length, accuracy, text structure elements, and quality) and are any positive effects maintained four weeks after the instruction ceases?

3) Which kind of strategy instruction (planning or sequential planning and revising) is more efficacious for improving the writing performance of students with SLI (in terms of length, accuracy, text structure elements, and quality)?

4) Are any intervention effects generalized to writing explanation essays?

5) Do the students demonstrate enhanced self-efficacy for writing expository essays in general and compare-contrast essays in particular?

6) Do the students view the planning and revising strategy instruction as socially valid?

Educational Significance

Previously documented evidence suggests that children with SLI experience significant difficulties with many aspects of writing (Dockrell, Lindsay, & Connelly, 2009; Nelson, Roth, & Van Meter, 2009). However, few strategy instructional intervention studies have been conducted to improve the writing performance in this population, who comprises the second largest group of students with disabilities in schools. While explicit strategy instruction has been found to yield significant intervention effects on writing outcomes for struggling writers (Graham & Perin, 2007), the participants involved were mostly students with LD. It is assumed that children with SLI will also benefit from explicit writing strategy instruction.

This study has implications for both researchers and practitioners. To date, there is no study that has directly investigated the efficacy of planning versus sequential planning and revising strategy instruction for elementary children with SLI. Only a few studies have provided planning and revising strategy instruction for combined groups of typically developing students and those with special needs (Limpo, Alves, & Fidalgo, 2014) or students with learning disabilities (Deatline-Buchman & Jitendra, 2006; MacArthur, Graham, Schwartz, & Schafer, 1995; MacArthur & Philippakos, 2010). This study will add to the limited research base of writing instruction for children with SLI.

This study may help teachers better understand the importance of each of the two strategies (as well as the combination), and consider supporting students with appropriate writing

strategy instruction based on individual writing needs. In addition, this study may also help teachers think about how to use writing as an effective tool to deepen understanding of content area information. Expository writing provides students with opportunities to work actively with their own knowledge and learn to transform their knowledge rather than simply telling their knowledge (Bereiter & Scardamalia, 1987). When writing compare-contrast papers in particular, students not only need to have clear and accurate thoughts about the topics to be compared and contrasted in mind, but also should be able to rely on their knowledge of writing processes, writing strategies, writing conventions, and self-regulation skills so as to share their thoughts on the key traits for comparisons/contrasts with supporting details. As emphasized in the Common Core State Standards, students need to develop the requisite skills necessary to use writing to analyze, interpret, and build knowledge for subject-matter topics and reading materials. Therefore, it is critical that teachers help improve students' writing in content areas such as science and history and promote writing-to-learn for each student. Compare-contrast writing could potentially contribute to content area writing expertise as students integrate and deepen their knowledge of subject matter content through the examination of similarities and differences in important qualities or features.

CHAPTER TWO
LITERATURE REVIEW

Specific language impairment (SLI) refers to a condition in which children experience language difficulties that cannot be explained by other cognitive, neurological, or physical deficits (Bishop, 1992; Leonard, 1998). In other words, children with SLI demonstrate linguistic difficulties in the absence of hearing difficulties, low nonverbal cognitive ability, neurological impairment, and behavior or emotional problems (Fletcher, 1999). It also has been found that this language difficulty persists through later childhood, adolescence, and adulthood (Leonard, 1998).

Specific Language Impairment: Definition and Characteristics

The discrepancy definition of SLI requires that children experience language difficulties in the presence of normal nonverbal cognitive abilities (Catts, Fey, Tomblin, & Zhang, 2002). In addition, both exclusionary and inclusionary criteria are used to define children with SLI (Gillam & Kamhi, 2010). Specifically, children who experience mental, hearing, emotional, or neurological difficulties as well as severe speech sound production difficulties are typically excluded. The inclusionary criteria for SLI requires nonverbal cognitive abilities within the normal range, meaning that children should demonstrate nonverbal IQ scores within one standard deviation of the mean (i.e., nonverbal IQ typically above 85 on intelligence batteries) and composite scores lower than 1.25 standard deviations below the mean on standardized oral language tests (e.g., Tombline, Records, Buckwalter, & Zhang, 1996; Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004).

Children with SLI have been found to experience difficulties with many subcomponents of the language system (Leonard, 1998). They exhibit problems with oral language acquisition and processing (Dockrell, Lindsay, Connelly, & Mackie, 2007), demonstrate poor performance

on non-word repetition tasks (Bishop et al., 1996; Ellis Weismer et al., 2000; Gathercole & Baddeley, 1990) that are strong indicators of language abilities (Baddeley, Gathercole, & Papagno, 1998; Gathercole, Hitch, Service, & Martin, 1997), possess limited vocabulary knowledge (Dockrell, Lindsay, Connelly et al., 2007; Dockrell, Lindsay, Palikara, & Cullen, 2007), and experience difficulties with morphology and syntax skills (Leonard, Eyer, Bedore, & Grela, 1997; Scott & Windsor, 2000; van der Lely & Ullman, 2001), particularly the use of inflectional morphemes (Leonard, McGregor, & Allen, 1992; Ullman & Gopnik, 1999).

Beside difficulties with the language system, children with SLI have also been found to show weaknesses in auditory processing (Miller, 2011). They exhibit difficulties when responding to brief or rapid auditory stimuli (of both speech and non-speech types), compared to their age-matched normally developing peers (Stark & Heinz, 1996; Tallal & Piercy, 1973, 1974; Tallal, Stark, Kallman, & Mellits, 1981). Troia (2004) suggested that children with SLI demonstrated more errors compared to their typically developing peers on tasks that required identification, discrimination, and serial ordering of speech stimuli that relied on temporarily cued information. Actually, more recent studies suggest that even if the inter-stimulus intervals (ISIs) for nonspeech stimuli are prolonged or verbal stimuli are slowed, the deficit still exists (Bradlow et al, 1999; Waber et al., 2001). However, when it comes to the question of whether the deficit in auditory processing leads to language problems in SLI, it seems that the causal relationship between the two is not clear (Miller, 2011). Rosen (2003) reviewed previously documented studies and indicated that the auditory deficits seemed only associated with, instead of causing, the language difficulties in children with SLI. As argued by Bishop, Carlyon, Deeks, and Bishop (1999) who found no evidence that auditory processing was a sufficient cause of language impairment, some children with SLI might demonstrate normal auditory processing,

while children with normal language abilities could still exhibit difficulties with auditory processing.

Children with SLI also experience difficulties in the working memory system (Ellis Weismer, Evans, & Hesketh, 1999; Montgomery, 2000). Baddeley's (2000) working memory model suggests a central executive component supporting the processing of complex memory span tasks as well as two separate systems dedicating to the short-term storage of visuo-spatial and verbal information, termed the "visuo-spatial sketchpad" and the "phonological loop," respectively. The phonological loop consists of two portions: a short-term store that maintains phonological representations and is subject to time-based decay, and an articulatory rehearsal process which serves to refresh, and therefore to help maintain verbal material in the phonological store. Previous studies have documented children with SLI exhibit deficits in phonological memory in that they consistently demonstrate poor performance on tasks that tap phonological processing, such as non-word repetition, phonological discrimination, and phonological awareness (Briscoe, Bishop & Norbury, 2001; Gathercole & Baddeley, 1990, 1993). This deficit in the phonological system could pose difficulties for morpho-syntactic comprehension and word learning (Gathercole & Baddeley, 1993) and may negatively affect language acquisition and literacy development (Bishop & Clarkson, 2003; Gathercole, 2006).

In short, research evidence has shown that children with SLI not only experience difficulties with the language system, but also auditory processing and working memory (in particular, phonological memory), which in turn seem to have a negative impact on language development. These difficulties could further lead to higher risk of having problems with developing sufficient reading and writing skills in subsequent years (Catts, 1993; Dockrell & Connelly, 2009; Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004).

Children with SLI Experience Difficulties with Writing

Children need to demonstrate sufficient writing abilities to meet school curriculum demands for writing and to succeed in classes (especially those which use writing as a major tool for assessing achievement). Students need to be able to use writing as an effective tool to learn different content area subjects and deepen understanding of themselves and the world (Graham & Perin, 2007; Shanahan, 2009). When entering the job market, there are a number of occasions that require them to engage in writing for employment and promotion (e.g. writing an impressive resume, demonstrating good presentation skills, composing a persuasive recommendation letter, etc.; National Commission on Writing for America's Families, Schools, and Colleges, 2004). However, writing is a complex task that requires children to not only have the cognitive resources for producing varied texts such as topic, genre, and linguistic knowledge and specific writing skills and techniques, but also to have adequate meta-cognitive abilities to monitor their writing-related thoughts, behaviors, and feelings, and to maintain positive attitude towards writing (De La Paz & Graham, 2002; Harris, Graham, & Mason, 2003; Troia, 2006).

Children with SLI have been found to experience difficulties in many aspects of writing (Dockrell, Lindsay, & Connelly, 2009; Nelson, Roth, & Van Meter, 2009). For example, Mackie and Dockrell (2004) found that children with SLI tended to experience more difficulties when generating texts compared to their chronological age-matched peers. The written texts generated by these children were shorter and characterized by poor sentence structure containing many errors that inhibit clarity or fluency (Dockrell, Lindsay, & Connelly, 2009). Children with SLI seldom engage in effective planning, with their writing showing little evidence of elaborated ideas and adequate organization (Dockrell & Connelly, 2009). Their texts are also frequently marred with many mechanical errors such as grammar, spelling, and punctuation mistakes

(Dockrell & Connelly, 2009; Dockrell, Lindsay, Connelly, & Mackie, 2007; Puranik, Lombardino, & Altman, 2007). The poor overall quality of their papers has been documented in a number of research studies (Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004; Lewis, O'Donnell, Freebairn, & Taylor, 1998).

The difficulties that children with SLI experience with writing are highly associated with their deficits in the areas of language, phonological processing, and working memory (Dockrell & Connelly, 2009). As oral language skills have been viewed as the prerequisite of text generation (Graham, Berninger, Abbott, Abbott, & Whitaker, 1997), the oral language problems typically associated with children with SLI limit the number and diversity of words (i.e., fluency) and clauses (i.e., micro-organization) produced in their written texts and negatively impacts their overall writing quality (Berninger & Fuller, 1992). Vocabulary, which is viewed as a strong predictor of text productivity (Dockrell, Lindsay, & Connelly, 2009) and quality (Dockrell, Lindsay, Palikara et al., 2007), is closely associated with phonological memory skills (Gathercole, Service, Hitch, Adams, & Martin, 1999). Therefore, very limited vocabulary knowledge in children with SLI constrained by their deficits in phonological memory leads to reduced lexical diversity (Fey et al., 2004; Scott & Windsor, 2000) and content generation (Dockrell, Lindsay, Connelly et al., 2007). This population's limited grammatical skills are also associated with frequent grammar errors in their written texts (Gillam & Johnston, 1992). For example, children with SLI find it difficult to use correct past tense and regular plural forms (Windsor, Scott, & Street, 2000). Instead, they have been found to use the conjunctive *and* repetitively in an inappropriate manner, omit whole words (e.g., auxiliary verbs, prepositions, and nouns), and omit morphological inflections, specifically inflectional suffixes (Mackie & Dockrell, 2004). Additionally, difficulties with understanding grammatical distinctions also pose

difficulties in text production and the ability to construct complex sentences using diverse sentence structure frames (Dockrell, Lindsay, Connelly et al., 2007). Phonological difficulties have been found to exert a negative impact on spelling, which is evidenced by the fact that the written texts composed by children with SLI contain many spelling errors that follow phonological patterns (Lewis & Freebairn, 1992; Mackie & Dockrell, 2004). Bishop (1997) suggested that children with SLI might experience difficulties analyzing spoken language into phonological segments, hence posing an adverse impact on spelling. Bishop and Clarkson (2003) supported this argument by presenting two common findings: first, more spelling errors in the written texts are of a phonological nature (e.g., "hceces" instead of *checks*); second, writing performance is closely related to children's ability to repeat non-words. Of course, poor spelling, together with slow handwriting, contribute to difficulties in text transcription (Dockrell, Lindsay, & Connelly, 2009). Working memory deficits that arise from phonological difficulties, as reviewed by Rosen (2003), could pose negative influences on writing by delaying the learning of grammatical structures. The high cognitive demands during writing may also overload the limited working memory capacity of children with SLI, thus leading to shorter texts and higher frequencies of errors compared to their age- and language-matched typically developing peers (Dockrell & Connelly, 2009).

To address the writing difficulties that children with SLI experience with generating and organizing ideas, composing texts, and text production accuracy and help improve their overall writing performance (i.e., quality), explicit strategy instruction might be able to facilitate better writing (Graham & Perin, 2007). The effectiveness of planning and revising strategy instruction on the writing performance of struggling writers is reviewed in the following sections.

Planning Strategy Instruction

Planning refers to developing appropriate goals and sub-goals and generating and organizing ideas based on task demands, writing purposes, and perceived audience needs (Troia, 2002). Planning is a critical process during writing in that it requires children to identify background knowledge, set goals for specific writing tasks, and generate and organize ideas using text structure demands (Hayes & Flower, 1986). Good writers allocate plenty of time to planning when composing texts (Starllard, 1974; Van Weijen, 2009a), whereas struggling writers have been found to devote minimal efforts to planning (De La Paz, 1997b; Graham, MacArthur, Schwartz, & Page-Voth, 1992; Lienemann, Graham, Leader-Janssen, & Reid, 2006; Troia, Graham, & Harris, 1999). De La Paz and Graham (2002) found that 80% of the middle school participants in their study did not generate any written plans before writing. In addition, students with LD were found to not engage in planning during writing, even when prompted to do so (MacArthur & Graham, 1987; Saddler, 2006). Students with SLI and attention deficit hyperactivity disorder (ADHD) demonstrate little evidence of planning either (De La Paz, 2001).

The good news is that planning can be taught through direct and explicit instruction. Evidence has shown that explicit teaching of planning strategies can improve writing outcomes for struggling writers (De La Paz, 2005; Graham, Harris & Mason, 2005; Saddler & Asaro, 2007; Troia & Graham, 2002). Extant studies have mostly focused on teaching planning strategies to children with LD to help improve their overall writing performance (De La Paz & Graham, 1997b; Lienemann et al., 2006; MacArthur & Philippakos, 2010; Saddler, 2006; Sawyer, Graham, & Harris, 1992; Troia & Graham, 2002).

For example, De La Paz & Graham (1997a) taught fifth to seventh graders with LD to generate and organize ideas for writing persuasive texts. In contrast, the control group was only

taught the persuasive text structure, asked to revise sample essays, then write essays and share them with peers. The results showed that the students who received planning strategy instruction wrote more complete (defined as including key functional essay elements including a premise, reasons, elaborations, and a conclusion) persuasive essays with better holistic quality than the control group. Saddler (2006) taught six second graders with LD to effectively plan and write stories. Before receiving the strategy instruction, the stories composed by the participants lacked important story elements, averaged 25 words in length, and were characterized by poor quality. In addition, none of the six students generated any written plans, and the average planning time was 5.2 seconds. After strategy instruction, the students wrote longer stories with more complete and important story elements included and the overall writing quality was significantly improved. Additionally, the average time spent on planning increased to 32.3 seconds. The students who completed the maintenance probes three and six weeks after the instruction were found to include more story elements (except one student), write longer texts, and even demonstrate better writing quality compared to their post-instruction performance.

Compared to the existing writing intervention studies for children with LD, only a few studies have been conducted to address the writing problems of children with other types of disabilities. De La Paz (2001) taught planning and composing strategies to one student with ADHD and two students with SLI. The participants showed little effort in planning before composing, generated a limited number of words and ideas, and demonstrated poor overall writing quality during baseline. After instruction, all three students generated written plans in advance of writing. They wrote longer texts, and included more functional essay elements, leading to substantially better overall writing quality. The two students who completed the maintenance test four weeks later still wrote quantitatively and qualitatively better expository

14

essays than before instruction. Reid and his colleagues provided strategy instruction to help a) three second to fifth graders with ADHD to plan and write stories (Reid & Lienemann, 2006), b) four fourth and fifth graders with ADHD to write opinion essays (Lienemann & Reid, 2008), and c) three eleventh and twelfth graders to write persuasive essays (Jacobson & Reid, 2010). The students in all these studies were found to write longer stories/essays, include more story/essay elements, and write papers with better holistic writing quality following instruction.

Different planning strategies have been adopted in writing instruction to help struggling writers learn to effectively plan before drafting. Troia and Graham (2002) taught three planning strategies known as goal setting, brainstorming, and organizing to fourth and fifth graders with LD. Two acronyms, SPACE (Setting, Problems, Actions, Consequences, Emotions) and DARE (Develop a position statement, Add supporting arguments, Report and refute counterarguments, End with a strong conclusion) were introduced during the pre- instruction phase to help children become familiar with the structure of stories and opinion essays, respectively. Two mnemonics, STOP & LIST (i.e., Stop, Think of Purpose, and List Ideas, Sequence Them) were used to facilitate the teaching of the three planning strategies. The results showed that these students' overall quality of story writing was significantly improved. In addition, the results from the maintenance test given one month after the intervention ceased showed that the students who received planning strategy instruction not only maintained an advantage in writing quality, but also composed longer texts than their peers who received process writing instruction.

Tracy, Reid, and Graham (2009) taught 64 third graders general planning strategies represented by the mnemonic POW (Pick my idea, Organize my notes, and Write and say more). A genre-specific strategy targeting fictional story writing was introduced, which was represented by the mnemonic WWW, What = 2, How = 2 (i.e., Who are the main characters? When does the

story take place? Where does the story take place? What do the main characters want to do? What happens when the main characters try to do it? How does the story end? How do the main characters feel?) Compared to the control group who received traditional skill instruction (i.e., spelling, grammar, punctuation, capitalization, and sentence construction skills), the students in the planning strategy instruction group wrote longer stories that were of better quality. The training gains were maintained for at least two months. In addition, the strategy instruction on story writing was also found to help the students generalize to writing papers of an untaught but related genre, personal narratives.

Graham, Harris, and Mason (2005) randomly assigned 73 third-grade struggling writers to three conditions: self-regulated strategy development (SRSD) only group, SRSD plus peer support group, and the comparison group who received writer's workshop instruction. Both the SRSD only and SRSD plus peer support groups were taught POW plus WWW, What = 2, How = 2 to enhance story writing. The two groups also learned a different strategy, TREE (i.e., Tell what you believe, provide three or more Reasons, End it, and Examine) to help them with writing persuasive essays. The students who received SRSD instruction showed advantages over their counterparts in the workshop control group in terms of increased planning time, longer texts, and enhanced overall quality for both stories and persuasive papers. In addition, peer interaction was found to facilitate generalization of the taught strategies to two uninstructed genres, personal narrative and informational texts.

Three students in De La Paz's (2001) study were taught a strategy represented by the mnemonics PLAN (Pay attention to the prompt, List main ideas, Add supporting ideas, and Number your ideas) and WRITE (Work from your plan to develop your thesis statement, Remember your goals, Include transition words, Try to use different kinds of sentences, and

Exciting, interesting, $100,000 words) for planning and composing expository essays. All the written plans generated by the students were collected and analyzed using a 6-point scale ranging from 0 (no advanced planning) to 5 (accurate map or outline). Both completeness (defined as including mapping or outlines) and accuracy (defined as responding to the writing prompt and logical subordination of main ideas with supporting details) criteria were used to examine planning. Length also was determined, defined as the number of words written. An analytic scoring procedure was used to determine the number of functional essay elements (i.e., premise, reason, and conclusion). A holistic rating scale ranging from 0 (nonscorable) to 7 (outstanding) was used to evaluate overall text quality. The results showed that the students not only learned to plan before composing (compared to no or minimal planning prior to instruction), but also demonstrated better writing performance both quantitatively and qualitatively. The two students who completed the maintenance probes four weeks later still showed better writing performance compared to pretest.

Planning strategy instruction has been adopted to teach children to write across different genres such as stories and personal narratives (Lienemann et al., 2006; Saddler, 2006; Saddler, Moran, Graham, & Harris, 2004; Sawyer, Graham, & Harris, 1992; Tracy, Reid, & Graham, 2009; Troia & Graham, 2002), expository papers (Deathline-Buchman & Jitendra, 2006; De La Paz, 2001, 2005; MacArthur & Philippakos, 2010; Yeh, 1998), and persuasive essays (De La Paz, 1997b; Monroe & Troia, 2006; Troia & Graham, 2002; Wong, Butler, Ficzere, & Kuperis,1996), and evidence has shown that the planning strategies help children effectively generate and organize ideas and write texts in different genres with better overall quality.

The planning strategy instruction in the previously documented studies has been provided mostly to students in higher grades of elementary school (e.g., Sawyer, Graham, & Harris, 1992;

Troia & Graham, 2002) and middle schools (e.g., De La Paz, 2001, 2005; De La Paz & Graham, 1997a; Yeh, 1998). Some other studies have focused on teaching younger writers (Graham, Harris, & Mason, 2005; Harris, Graham, & Mason, 2006; Lienemann et al., 2006; Saddler, 2006; Saddler et al., 2004; Tracy, Reid, & Graham, 2009) and adults (MacArthur & Lembo, 2009) to plan. For example, Lienemann and colleagues (2006) taught six second-grade struggling writers to plan and compose stories using POW and WWW, What = 2, HOW = 2 under the SRSD framework. Compared to before strategy instruction, all of the participants wrote longer and more complete stories. All the students, except for one, demonstrated substantial improvement in writing quality. Harris, Graham, and Mason (2006) also found that second graders who received planning and composing strategy instruction under the SRSD framework spent more time on planning and wrote more complete stories. However, no significant differences in length or text quality were found between the SRSD-instructed group and the comparison group who received writer's workshop instruction. This result only partially replicated Graham, Harris, and Mason's (2005) study in which third graders demonstrated both significantly improved writing quantity and quality. Harris and colleagues (2006) argued that one possible explanation was that these young students needed more opportunities to practice using the taught strategy and self-regulatory skills before fully taking advantage of the strategy. Three middle-aged adults in MacArthur and Lembo's (2009) study learned to identify a topic, generate ideas, organize information on a graphic organizer, state a position and provide supporting details, write, self-evaluate, and make revisions to a four-paragraph essay (i.e., introduction, reason, rebuttal, and conclusion). All three participants showed significantly enhanced organization and better overall writing quality following intervention.

To evaluate the effectiveness of planning strategy instruction on student writing

performance, different measures such as planning time, length of written text, story or essay elements, holistic writing quality, and writing traits are used. Length refers to the number of words written in the text. Planning time is defined as the time between the end of the teacher or examiner's directions and the beginning of the child's writing on paper or keyboard (Saddler, 2006). Stories generally include the following elements: main characters, locale, time, what the main characters want to do, what they did, how they felt, and how it all ended (Lienemann et al, 2006). Essay elements typically include the following units: premise (i.e., a statement specifying a particular position on a topic), reason (i.e., explanations to either support or refute the author's position), conclusion (i.e., a closing statement), elaboration (i.e., a unit of text can be scored as an elaboration if the author provides details pertaining to the topic), and nonfunctional (i.e., information that was off the topic, repeated without discernible purpose, or not appropriate for the expository genre) (De La Paz, 1997b; 2001). Overall writing quality is generally scored using a holistic rating scale, e.g., a 7-point scale ranging from 1 (representing the lowest quality) to 7 (representing the highest quality). Before scoring, children' written texts are typed and corrected for spelling, punctuation, and capitalization to minimize potential bias in scoring and examiners read the papers to obtain an overall impression of the writing quality (Tracy, Reid, & Graham, 2009). Children' writing quality can also be assessed using an analytic scale for traits such as content, organization, sentence fluency, word choice, and writing conventions (Monroe & Troia, 2006).

In summary, previous studies have well documented that struggling writers who receive planning strategy instruction spend more time in advance planning (Deatline-Buchman & Jitendra, 2006; Harris, Graham, & Mason, 2006; Saddler, 2006; Troia & Graham, 2002). They write longer texts (De La Paz, 2001; De La Paz & Graham, 2002; MacArthur & Lembo, 2009;

MacArthur & Philippakos, 2010; Troia & Graham, 2002) which include more story elements (Lienemann et al, 2006; Saddler, 2006; Saddler & Asaro, 2007; Saddler et al, 2004; Tracy, Reid, & Graham, 2009) or functional essay elements (De La Paz, 2001; De La Paz & Graham, 1997b; MacArthur & Lembo, 2009; Harris, Graham, & Mason, 2006). Their writing products also demonstrate enhanced overall text quality (De La Paz, 2001; Graham et al, 1992; Lienemann et al, 2006; Tracy, Reid, & Graham, 2009). In addition, gains from the planning strategy instruction are well maintained for at least four weeks after the instruction ends (De La Paz & Graham, 2002; Graham, Harris, & Mason, 2005; Harris, Graham, & Mason, 2006; Saddler, 2006; Troia & Graham, 2002). The positive effects of strategy instruction also generalize to writing in some uninstructed genres for the trained students (Graham, Harris, & Mason, 2005; Harris, Graham, & Mason, 2006).

Revising Strategy Instruction

Revising, viewed as a critical part of the writing process (Scardamalia & Bereiter, 1986), refers to identifying discrepancies between intentions and the existing text, and making desired changes based on detected dissonance (Fitzgerald, 1987; Fitzgerald & Markham, 1987). Expert writers tend to make global text revisions and target more meaning-changing revisions which lead to substantial improvement in writing quality (Butterfield, Hacker, & Albertson, 1996). However, poor writers have been found to experience difficulties with revising (Graham & Harris, 2000; Zimmerman & Risemberg, 1997). They seldom revise their written texts, and most of the revisions made are more superficial, i.e., focusing on the conventions (such as spelling, punctuation, capitalization) rather than the content, and hence have a very limited impact on the text quality (MacArthur & Graham, 1987; MacArthur, Schwartz, & Graham, 1991; Stoddard & MacArthur, 1993). Troia (2009) suggested that this difficulty with revision might possibly reflect

the fact that struggling writers tend to "make inaccurate presuppositions regarding shared understandings between themselves and their audience" (p. 30) and focus on revising mechanical errors rather than content and global issues. These struggling students also demonstrate lack of sufficient skills and strategies to identify mismatches and carry out desired revisions, reluctance to revise the existing paper, and lack of the executive mental control to "manage revising along with the other cognitive, linguistic, physical, and motivational operations involved with composing text" (p. 31).

Different revising strategies have been adopted in previous studies to address the difficulties experienced by struggling writers. Scardamalia and Bereiter (1983) designed a simplified procedure to facilitate the use of the CDO (Compare, Diagnose, Operate) process, which helped children to revise by detecting mismatches between intentions and actual text, determining the cause of the mismatch, and making the desired changes. The CDO revising strategy, as argued by the researchers, reduced the cognitive load by explicitly requiring children to follow the three steps when evaluating and revising the written texts sentence by sentence.

Reynolds, Hill, Swassing, and Ward (1988) adopted the evaluation and directive phrases of the CDO procedure to improve revising at the sentence level. The COPS acronym (i.e., Capitalization, Overall appearance, Punctuation, and Spelling) was also taught to address mechanical issues. After the instruction, the participants with LD were found to revise more of their mechanical errors. However, the content of the texts was not substantially improved. Reynolds and colleagues suggested that this result might indicate that the taught strategy guided the students to improve sentence content while ignoring the overall logic and cohesiveness of the paragraphs. The researchers also pointed out that compared to the COPS strategy, which was straightforward, the CDO procedure was more difficult for children with LD as it required more

complex problem solving.

Graham (1997) replicated Scardamalia and Bereiter's (1983) study by teaching twelve fifth and sixth graders with LD using a slightly modified CDO process, for which the number of evaluative and tactical choices was reduced from 11 to 7 and from 6 to 5, respectively. This modification further decreased the cognitive demands for revising, and the participants with LD who demonstrated limited cognitive capacities were expected to benefit from the reduction in options. Following instruction in using the CDO procedures, the students were found to make more revisions at both mechanical and substantive levels, with the latter significantly increased. However, no significant improvement in text quality was found. Graham (1997) suggested that this result might indicate that the CDO strategy focused more on local rather than global problems in the written texts. In addition, 83% of the students in the Graham study indicated that the CDO procedure not only made revising easier, but also helped them write better papers.

De La Paz, Swanson, and Graham (1998) further extended Graham's (1997) investigation by modifying the executive routine by including two revising cycles: during the first cycle, the students reread their paper, used four evaluation cards to identify problems, and then selected one of the four tactical directives to carry out the specific revision; during the second cycle, students worked more at local level of the texts and selected one of the six evaluations and a tactical directive to address the problems. To reduce the students' focus on mechanical errors, the students with LD were encouraged to ignore spelling, punctuation, and capitalization issues when revising. The results showed that the students who used the CDO procedure conducted more non-surface, meaning-changing revisions than their peers in the comparison group who were simply asked to revise texts to "make it better." The CDO procedure also positively impacted text quality, with 67% of papers improved from the first to the final drafts in CDO

22

instructional condition versus 17% in the comparison group. Ninety percent of the participants believed that the CDO strategy made revising easier and helped them make desirable revisions, leading to written texts of better quality.

In conclusion, the CDO strategy has been found to help struggling writers make more non-surface revisions, leading to enhanced quality of written texts. However, due to its complexity, the CDO strategy might be more suitable for revising shorter texts before children can fully internalize the strategy (Troia, 2009).

Peer revising is another strategy that combines revising strategy instruction and peer response (e.g., MacArthur, Schwartz, & Graham, 1991; Stoddard & MacArthur, 1993). Peer response itself might not always have a positive impact on revising as struggling writers may lack sufficient evaluation criteria and appropriate strategies for revising. Therefore, combining peer interaction with strategy instruction might be more effective in that children might gain a more thorough understanding of the strategy used through interacting with peers, have more opportunities to take the role of both writer and editor, and work collaboratively with peers to improve their writing performance (Stoddard & MacArthur, 1993).

MacArthur, Schwartz, and Graham (1991) taught 29 fourth- to sixth-graders with LD to revise both content (Revise) and mechanical issues (Edit). The children worked in pairs to help each other improve their essays and took the role of the writer (i.e., the author of a paper) and the listener (i.e., the person who provided suggestions and feedback on the paper). During the Revise phase, the listener first read the paper along with the writer then told the writer what parts he or she liked best. The listener then read the paper again and was required to provide at least three suggestions for revising the paper. Finally, the writer and the listener discussed the suggestions and the writer then made revisions. During the Edit phase, the writer followed a checklist that

23

helped with correcting mechanical errors and then gave the revised paper to the listener. The listener then corrected the missed errors using the same checklist. The results showed that the students who received the peer revising strategy instruction not only made more revisions, but also demonstrated improved overall writing quality compared to the control group who only received process writing instruction.

Stoddard and MacArthur (1993) taught a peer editor strategy similar to that in MacArthur and colleagues' (1991) investigation to six seventh- and eighth-graders with LD and modified the evaluation criteria to focus revising on completeness, logic, details, and clarity. Following the intervention, all the participants were found to make more substantial revisions rather than simply correcting mechanical errors, leading to significant improvement in the writing quality of the final drafts. The gains were also maintained for at least two months.

In short, the peer revising strategy takes advantages of both the effects of strategy instruction on improving revising behaviors and the benefit of peer interaction in providing social and motivational contexts to enhance writing performance. Graham & Harris (2005) suggested that the Revise (i.e., revising at content level) portion should be taught in advance of the Edit (i.e., revising at mechanical level) portion so that children can be guided to revise at more substantive levels at the very beginning of revising. Moreover, it would be easier for children to learn one part at a time. They also suggested that the peer revising strategy might be more suitable for young writers compared to the CDO procedure, as CDO was a relatively more complex procedure that required appropriate evaluation and revising.

Setting appropriate goals for revising might also be able to guide struggling writers to revise more at substantive levels, and hence could lead to enhanced overall writing quality (e.g., Graham, MacArthur, & Schwartz, 1995; Midgette, Haria, & MacArthur, 2008). Graham,

MacArthur, and Schwartz (1995) randomly assigned 67 fourth- to sixth-graders with LD into three instructional conditions: (1) general goal (i.e., children were asked to revise their paper to "make it better"); (2) goal to add information (i.e., children were required to add at least three things to their paper); and (3) goal to add information using procedural facilitation (i.e., children were not only told to add at least three things to their paper, but also were guided to follow a procedure that helped them generate and evaluate information they were going to add to the paper). After the instruction, the students whose revising goal was to add information to their papers (the second and third groups) not only made more meaning-changing revisions, but also demonstrated better writing quality compared to their peers who were assigned a general goal to make their papers better. However, neither the students' revising behaviors nor text quality seemed to benefit from the addition of the procedural facilitator. Midgette, Haria, and MacArthur (2008) randomly assigned 181 fifth- and eighth-graders into three conditions for revising persuasive essays: (1) general goal (i.e., students were asked to revise to make the paper better; (2) goal to add content (i.e., students were required to provide more reasons to support their papers); and (3) goal to add content and perceive audience (i.e., students were told to add more reasons to the essays and also to take into consideration the potential readers who might disagree with them). The results showed that the students in both the goal-to-add-content condition and the goal-to-add-content plus audience awareness condition wrote essays that were more persuasive than those in the general goal condition. In addition, the students who were assigned to the audience awareness goal condition tended to consider opposing positions more often than those in the other two conditions that didn't require consideration of potential audiences.

Revising strategy instruction has been adapted to help children revise texts of different genres such as personal narrative (Fitzgernald & Markham, 1987; Graham, MacArthur, &

25

Schwartz, 1995; MacArthur, Schwartz, & Graham, 1991; Stoddard & MacArthur, 1993),

expository (Graham & MacArthur, 1988; MacArthur & Philippakos, 2010; Reynolds et al.,

1988), and persuasive essays (Midgette, Haria, & MacArthur, 2008; Moore & MacArthur, 2012)

and the results from these studies have shown that revising strategy instruction contributes to

both substantial revisions and better overall writing quality. It is worth noting that mixed

findings do exist in terms of quality. In spite of the fact that most studies have documented the

effectiveness of teaching revising strategies on improving struggling students' writing

performance, significant improvement of the participants' overall writing quality was not found

in Graham's (1997) and Reynolds et al.'s (1988) studies. Also, previous studies that adopted

different revising strategies focused on a limited range of grades (mostly higher grades at the

elementary level) and disability types (mostly LD). Therefore, more efforts are needed to

validate the effectiveness of revising strategy instruction for enhancing children' revising

behaviors and writing outcomes.

Self-regulated Strategy Development Framework

Self-regulated Strategy Development (SRSD) is an instructional program developed by

Harris and Graham to help children develop knowledge about writing, writing strategies, writing

self-regulation and self-monitoring skills, as well as positive attitudes toward writing (Graham &

Harris, 1993; Graham & Harris, 2003; Harris, Graham, & Mason, 2003). The purpose of the

SRSD model is to help children become independent, sufficient, and goal-oriented writers

(Graham, Harris, & Reid, 1992; Troia & Graham, 2002). The SRSD model typically includes the

following six stages: (a) the teacher helps children develop background knowledge that

facilitates the learning of writing and self-regulation strategies, (b) the teacher and children

discuss the strategies to be learned in terms of when and how to use the strategies as well as the

importance of using the strategies in relation to current writing performance, behaviors, and thoughts, (c) the teacher models using the strategies in actual writing activities; (d) children memorize the strategy mnemonics and steps for future use in writing, (e) the teacher scaffolds children's attempts at using strategies during writing, and (f) children are encouraged to and given opportunities to use the strategies independently.

Previous studies adopting either group experimental or single-case experimental design parameters consistently show that SRSD can help students gain better knowledge about writing, improve their approaches to writing, produce better writing, and boost writing self-efficacy (Graham & MacArthur, 1988; Jacobson & Reid, 2010; Lienemann & Reid, 2008; Mason & Graham, 2008; Reid & Lienemann, 2006; Saddler & Asaro, 2007; Stoddard & MacArthur, 1993; Troia & Graham, 2002). SRSD also targets the generalization and maintenance of strategy skills gained from the writing instruction (Harris, Graham, & Mason, 2006). Several meta-analyses have been conducted to examine the overall effects of writing instruction on students' writing performance (Graham, McKeown, Kiuhara, & Harris, 2012; Graham & Perin, 2007; Rogers & Graham, 2008). For example, Graham and his colleagues (2012) conducted a meta-analysis of writing interventions (adopting true and quasi-experimental designs) for students at the elementary level. The results showed that the average weighted effect size for the instruction that adopted the SRSD framework (ES = 1.17) was not only significantly greater than zero, but also significantly larger than that for non-SRSD interventions (ES = 0.59).

When taking into consideration the difficulties that children with SLI experience with writing, SRSD might be an effective framework for the planning and revising strategy instruction to help students with SLI: a) develop more initial ideas pertaining to the topic, organize information based on text structure, compose texts with fewer errors, and revise at both

27

mechanical and substantive levels, all of which will contribute to improved overall text quality; b) gain more in-depth understanding of the taught strategies (e.g., what is the strategy? when and where can the strategy be used?) through teacher's explanations, modeling, and scaffolding and students' independent practice with the strategy; c) obtain better maintenance and generalization of the strategy through instructional sessions that engage students in thoughtful discussion about how to continue strategy use in the face of obstacles and how to adapt strategies for diverse writing tasks; and d) develop self-regulation skills, set appropriate goals and sub-goals, monitor writing behaviors, and maintain positive attitudes toward writing.

Teaching Compare-contrast Text Structure

Compare-contrast is one of the five major identified expository text structures, together with collection, description, causation, and problem-solution (Meyer & Freedle, 1984). Previous studies have suggested that compare-contrast is relatively more difficult than the other expository structures (Englert & Hiebert, 1984). It is worth mentioning that given compare-contrast texts can be organized by attributes, and they can vary in the use of superordinate categories, students find it easier to write compare-contrast essays when describing similarities and differences (Meyer & Freedle, 1984; Richgels, McGee, Lomax, & Sheard, 1987) than when using superordinate categories (Englert & Hiebert, 1984; Englert & Thomas, 1987). In this study, the participants will be taught to identify superordinate attribute categories and then compare and contrast within superordinate categories for each paragraph. As the Common Core State Standards place more emphasis on expository writing as well as using writing as a tool to facilitate learning (Graham & Harris, 2013), compare-contrast writing is of potential importance in helping students better understand content area information by asking students to highlight

key information, generate categories for that information, and make comparisons of attributes within the categories (MacArthur & Philippakos, 2010).

To date, only a few studies have directly included compare-contrast texts in writing instruction (Englert, Raphael, Anderson, Anthony, & Stevens, 1991; Hammann & Stevens, 2003; MacArthur & Philippakos, 2010; Wong, Butler, Ficzere, & Kuperis, 1997). For example, Englert et al. (1991) taught fourth and fifth graders with and without LD to write explanation, compare-contrast, and problem-solution texts using the Cognitive Strategy Instruction in Writing (CSIW) program. The set of the strategies incorporated in this instructional program was referred to by the acronym "POWER," representing *plan, organize, write, edit,* and *revise.* The *plan* think-sheet helped students to identify writing purpose and audience, activate background knowledge, and brainstorm ideas. The *organize* think-sheet helped students to organize their ideas based on the specific text structure. Students then wrote their first draft on the *write* think-sheet. The *edit* and the *revise* think-sheets guided students to examine their papers for content and text organization, develop plans for revising, and make revisions accordingly. The results suggested that the students who received the writing instruction wrote compare-contrast and explanation texts of better organization and overall quality compared to the control group who only received process writing instruction. Writing gains were found for the students with LD, low-achieving (defined as those who scored at or below the 39th percentile on the reading subtest of the *Stanford Achievement Test*), and high-achieving (defined as those who scored at or above the 56th percentile on the test) students, with reported effect sizes ranging from 0.11 to 0.37 across the three ability levels.

In MacArthur and Philippakos's (2010) study, six students ranging in age from 11 to 14 years were taught to plan, write, and revise compare-contrast essays within the SRSD framework

using a strategy that was based on this specific text structure. The students' essays were scored

for length, strategy use and planning, text structure elements (i.e., introductory statement,

superordinate topic sentence, comparisons, details, conclusion, and use of transition words), and

overall quality (using a 6-point trait rubric assessing content, organization, word choice, sentence

fluency, and conventions with emphasis on how well different things were compared). The

results showed that all the students made significant improvements on both text structure

elements and overall writing quality. Gains in compare-contrast text structure were well

maintained at four and eight weeks for four students who completed the maintenance probes, but

the quality gains were maintained for only two of those four students. The researchers argued

that due to the fact that only one essay probe was given during the maintenance test, it was not

clear whether this result indicated a decline in writing quality or variation on this single essay.

Self-efficacy for Writing

Self-efficacy, referring to an individual's assessment of his or her own competence to

perform certain tasks (Bandura, 1997), is believed to be very influential on individuals'

functioning (Bandura, 1986), and can influence students' choice of which tasks with which they

engage, how much effort they exert on these tasks, and to what extent they persist with difficult

tasks (Bandura, 1997; Pintrich & Schunk, 2002). Self-efficacy beliefs include both outcome

expectations (i.e., beliefs that certain actions will lead to certain outcomes) and efficacy

expectations (i.e., beliefs that one has the capabilities to perform certain actions leading to

desired goals) (Eccles & Wigfield, 2002). The two kinds of efficacy beliefs are different in that

one might believe a certain action will lead to desired outcomes (e.g., using a revising strategy

will help improve writing quality), but not necessarily believe s/he can perform that action.

Previous research studies have consistently shown that self-efficacy is a strong predictor of

student writing performance (Shell, Colvin, & Bruning, 1995; Shell, Murphy, & Bruning, 1989; Pajares & Valiante, 1999; Troia, Harbaugh, Shankland, Wolbers, & Lawrence, 2010).

Several studies have found that writing instruction within the SRSD framework can increase student's self-efficacy for writing (Graham & Harris, 1989a, 1989b; MacArthur & Philippakos, 2010). For example, Graham and Harris (1989a) assessed the impact of their writing instruction on the self-efficacy of three LD students. The students were asked to rate on a scale ranging from 10 to 100 in ten-unit intervals their perceived abilities to write an essay with key functional elements, detect errors in the text, and carry out revisions to improve their text. All three students showed increased self-efficacy for writing after instruction (increases were 4 points, 18 points, and 12 points, respectively). MacArthur and Philippakos (2010) adopted an 11-item self-efficacy scale to examine the effects of their compare-contrast writing instruction on students' self-efficacy for writing. These items tapped specific writing processes (e.g., generating and organizing ideas, evaluating essays) and complete written products (e.g., essays that included strong conclusions). The researchers indicated that all the items addressed the students' perceived writing competence on expository writing in general, except for one item that asked students to rate themselves on compare-contrast writing specifically, which was directly related to the taught text structure in their study. The results showed that all six students made gains in writing self-efficacy scores.

Given the documented efficacy of strategy instruction on the writing performance of struggling students as well as the fact that few studies have focused on students with SLI, this study aimed to examine the efficacy of planning and revising strategy instruction within the SRSD framework on the compare-contrast expository writing of fourth- to sixth-graders with SLI. The efficacy of the planning instruction alone is compared with sequential planning and

revising instruction, and the intervention effects are expected to be maintained for at least four weeks after the instruction ceased. It is expected that the training effects will generalize to writing in another uninstructed but related genre, explanation essays. The writing instruction is also expected to exert positive effects on student's writing self-efficacy beliefs and their perceptions of the planning and revising instruction.

CHAPTER THREE
METHOD

Participant Screening

Participants with SLI in fourth- to sixth- grade were recruited from communities in the Great Lakes region. Each participant met the following stepwise criteria: 1) Identification by a speech-language pathologist as having language impairment and having an IEP with expressive language goals; 2) A nonverbal intelligence score at or above 90 on the *Test of Nonverbal Intelligence-Third Edition* (*TONI-3*) to represent normal nonverbal ability; 3) Scores on either of the two subtests (*Listening Comprehension* or *Oral Expression*) of the *Oral and Written Language Scales-Second Edition* (*OWLS-II*) that fall at least 1.25 standard deviations below of mean to represent oral language impairment; 4) Absence of hearing difficulties, frank neurological impairment, and emotional or behavioral problems. The students who met these criteria also were given the *Written Expression* subtest of the *OWLS-II* as a standardized assessment of writing performance prior to the strategy intervention. All screening for participation was conducted by the instructor.

Nonverbal Intelligence. To screen for the participants' nonverbal intelligence, the *TONI-3* was administered individually to each participant. The examiner administered all the training items by showing the students how to respond with finger-point (i.e., nonverbal way) and encouraged students to join the pointing process until the training items were completed and the students seemed to understand the task. Once the testing started, the examiner pointed to the empty square in the stimulus pattern and the students were asked to respond by pointing to one (of four) choice below to match the pattern. The internal consistency reliability estimates for the *TONI-3* are high (.89 < α < .92) for participants aged 9 to 11.

Listening Comprehension. To assess the participants' listening comprehension, the

Listening Comprehension subtest from the *OWLS-II* that targeted syntactic, lexical/semantic, and supralinguistic skills was administered. Students were asked to respond by either pointing to or saying the number of the one (of four) picture that matched the sentence spoken by the examiner (e.g., "In which picture do the fishbowls have an unequal amount of water?"). The internal consistency reliability estimates for the *Listening Comprehension* subtest are high ($.89 < \alpha < .92$) for this study sample's ages.

    Oral Expression. To assess the participants' oral expression, the *Oral Expression* subtest from the *OWLS-II* that targeted syntactic, lexical/semantic, supralinguistic, and pragmatic skills was administered. The students were asked to orally complete the sentence spoken by the examiner based on the picture shown (e.g., "When Dad came into the kitchen, he looked at the juice bottle and asked…"), or describe a series of given pictures (e.g., "These pictures tell a story. Tell what is happening as you point to each picture, starting here"), or respond to a prompt (e.g., "There is a new boy at school. Tell me two things that you could say to make him feel welcome. Say them to me exactly as you would say them to him"), or correct a sentence (e.g., "Correct how Molly talks when she says 'I throwed the ball'") said by the examiner. The internal consistency reliability estimates for the *Oral Expression* subtest are high ($.95 < \alpha < .96$) for ages 9-11.

    Written Expression. To examine the participants' writing performance, the *Written Expression* subtest from the *OWLS-II* that targeted conventions, syntactic, and lexical/semantic skills was administered. Tasks used to measure writing performance included the following: (a) fill in the blank based on a given sentence (e.g., "Here is a sentence with some words left out. Fill in the blanks in this sentence: 'Yesterday, the ____ boy ____lunch'") or picture (e.g., "The girl is saying whose ball she has. Fill in the blanks to finish her sentence. Remember, write just

one word on each line. The first word starts with the letter T. Be sure not to use any names"); (b) describe given pictures (e.g., "In this picture (point to the dog sleeping), the dog is sleeping. Write what is happening in this picture (point to the dog and cat sleeping) in one complete sentence"); (c) combine two given sentences after examiner modeling (e.g., "Listening to these two sentences: 'The girl runs. The girl plays'. If asked to put them together into one sentence, you could write, 'The girl runs and plays'. Now you put these two sentences together into one sentence. 'The girl eats breakfast.' 'The boy eats breakfast'. Write your new sentence here"); (d) add punctuation and capitalization to given sentences; (e) write a story in their own words based on a story read aloud by the examiner; (f) write down the answer to a question asked by the examiner (e.g., "Would you rather have a dog or a cat? Write one or two sentences telling which one you would rather have and why"); and (g) write a sentence dictated by the examiner. The internal consistency reliability estimate for the *Written Expression* subtest was .96 for ages 9-11.

Selected Participants

A total of three students, one fourth grader (girl), one fifth grader (girl), and one sixth grader (boy), were identified as having SLI to be included in this study. The average age (in months) for the three students was 127.33. All three students were referred to the study for experiencing difficulties with oral language and writing performance. Sarah, the fourth-grade girl, received writing strategy instruction first. She was diagnosed as having attention deficit hyperactivity disorder (ADHD) and received special education services during the time of the study. As reported by her parent, she also experienced some memory problems due to anoxic brain injury. Ethan, the sixth-grade boy, was the second student to receive writing instruction. He was diagnosed as having ADHD with major emphasis on attention deficit. Kayla, the fifth grade girl, was the last student to receive writing instruction. She was in the process for having

language learning difficulties and special education needs assessed. More detailed participant information is presented in Table 1.

All screening measures were first scored independently by a graduate student who was not familiar with the purpose and design of the study. They were rescored by the researcher and interrater reliability was .90. The scores assigned by the graduate student were ultimately used in the study. According to the results from the screening assessments, Sarah showed a discrepancy of 25 points (1.67SD) between her nonverbal intelligence and listening comprehension performance; Ethan showed a discrepancy of 19 points (1.27SD) between his nonverbal intelligence and oral expression performance; and Kayla demonstrated a discrepancy of 19 points (1.27SD) between her nonverbal intelligence and listening comprehension performance. Therefore, all the students met the discrepancy criterion of demonstrating at least a 1.25 standard deviation difference between nonverbal intelligence and oral language (either receptive or expressive). In addition, Sarah, Ethan, and Kayla all obtained standard scores of 40 on the *Written Expression* subtest of the *OWLS-II*, which is below the 0.1 percentile rank (see Table 1). Therefore, all three students demonstrated profound difficulties in writing prior to receiving the writing instruction.

Writing Prompts

The compare-contrast writing prompts were provided during baseline, instruction, posttest, and maintenance phases of the study. All the writing prompts used the same format: "write a paper comparing and contrasting ___ and ___" as used in MacArthur and Philippakos' (2010) study. An explanation expository writing prompt was also given at baseline, posttest, and maintenance to examine generalization effects of the compare-contrast writing instruction to writing explanation essays, an uninstructed expository text structure. Three fourth- to sixth-

grade teachers were asked to rate prompts based on familiarity, interest, and difficulty level. The prompts that were rated as too difficult were eliminated. Additionally, each participant was asked to rate their familiarity for each prompt to ensure they knew enough to be able to write an essay about the things being compared and contrasted. A few prompts were eliminated due to the fact that the participants were not familiar enough with the topic (e.g., comparing and contrasting two zoos/museums; comparing and contrasting learning English and Chinese/Spanish/Latin). Each participant was provided with a topic prompt and was asked to compose an essay about the given prompt. To control for potential order effects, the following steps were taken. First, the topics were randomly selected from a larger pool of 40 compare-contrast essay topics. Second, all the essays written at a given time were on the same topic (e.g., three posttest essay prompts for student 1 and the final three baseline essay prompts for student 2 were the same). Similar procedures applied to the selection of the explanation prompts and the topics were randomly selected from a finalized pool of ten explanation essay topics.

Measures

The following measures were included to provide a comprehensive understanding of the students' writing performance before and after writing strategy instruction.

Writing Process Measures

Planning. Planning time refers to the interval between the instructor prompt to begin and the student starting to write. Planning time was recorded using a stopwatch to investigate how much time students spent planning before composing. *Written plans* produced by the participants were collected and scored on a 5-point scale ranging from 1 (no advanced planning) to 5 (fully developed planning) based on to what extent their generated plans contained writing goals, key traits for comparisons, and ideas that are organized to support elaboration on each trait. A

student's plans received the highest rating if s/he wrote down quantitative and qualitative goals, generated major traits for reporting similarities and differences, and included supporting details (in phrases or short sentences) corresponding to the writing prompt. The planning measures were recorded and scored during baseline, posttest, and maintenance.

Revising. The instructor observed and took notes on any revising behaviors in which the students engaged during the baseline, posttests, and maintenance phases. Revising may occur at a substantial level (defined as revising that changes meaning or text organization to meet the quality and quantity goals) and/or superficial level (defined as revising that addresses capitalization, punctuation, and spelling errors). The instructor then tallied the number and type of revisions in each phase of the study.

Writing Product Measures

Total words written. Total words written (TWW) is an index of writing productivity. It is viewed as a reliable and valid measure for assessing students' writing outcomes, especially students at the elementary level (Deno, Marston, & Mirkin, 1982; Deno, Mirkin, & Marston, 1980). In particular, Deno and colleagues (1980, 1982) found that TWW is significantly correlated with written language criterion measures such as the *Test of Written Language* (Hammill & Larsen, 1978; r = .69 to .82) and the *Stanford Achievement Test* (Madden, Gardner, Rudman, Karlsen, & Merwin, 1978; r = .41 to .88). Marston and Deno's (1981) investigation also provided strong evidence for the reliability of the TWW as a measure of written production. TWW for each paper was scored at pretest, posttest, and maintenance.

Percentage of Correct Writing Sequences (%CWS). Percentage of Correct Writing Sequences (%CWS) is an index of students' writing accuracy (Jewell & Malecki, 2005). Correct writing sequences refers to "two adjacent correctly spelled words that are acceptable within the

context of the phrase to a native speaker of the English language" (p. 11; Videen, Deno, & Marston, 1982). Therefore, %CWS is obtained by the number of correct writing sequences divided by total number of writing sequences in the written text multiplied by 100. This measure is strongly correlated to teachers' holistic ratings of writing quality (r = .75; Tindal & Parker, 1989). Jewell and Malecki (2005) suggested that using only production-dependent indices (e.g., TWW or words spelled correctly) was not enough to assess writing performance when students are in higher elementary grades or middle school. Therefore, %CWS, together with TWW, provide valid measures to assess both the quantity and accuracy of students' writing performance. Percent CWS was scored for papers produced during pretest, posttest, and maintenance.

Text structure elements. Compare-contrast text structure elements were scored using the scoring procedures adapted from MacArthur and Philippakos (2010). Elements included introduction, hook, comparisons, traits, supporting details, summary of all the traits, conclusion of what the reader should learn, and use of transition words. No credit was awarded if (a) sentences simply replicated earlier statements or (b) information provided was not relevant to the comparisons. Text structure elements were scored during pretest, posttest, and maintenance. Each text structure element was awarded points based on whether the element was included, with 0 representing "not included", 1 representing "partially included", and 2 representing "fully presented". Some elements may have occurred more than once and thus obtained additional points (comparisons, traits, and details). See Appendix A Text Structure Elements for Scoring Compare/Contrast Essay for further details.

Writing quality. Each student's essay quality was evaluated using a 6-point rubric developed by Education Northwest for four key traits: ideas, organization, word choice, and

sentence fluency; these trait scores were summed to create a total writing quality score out of 24 points possible. Prior to scoring, the students' papers were typed and identifying information was removed, with any grammar or mechanical errors being corrected. The raters first read the students' essays to gain a general impression, and then rated the writing quality for each of the four traits. Writing quality was scored during pretest, posttest, and maintenance.

Self-efficacy for writing. A writing self-efficacy scale adapted from the items used by Troia et al. (unpublished data) was administered during baseline and posttest. These items measured the students' perceived competence in writing processes such as planning, drafting, and revising a paper in general (e.g., "I believe I could write an informative article that would help others learn about my topic", "I would be able to come up with great ideas and include lots of details for this article") and writing a compare-contrast essay in particular (e.g., "I can write a good compare-contrast essay"). The students were asked to rate how well they agreed or disagreed with the statements on a 7-point Likert-type scale (0 = Totally Disagree, 1 = Mostly Disagree, 2 = Disagree A Little, 3 = Don't Agree or Disagree, 4 = Agree A Little, 5 = Mostly Agree, and 6 = Totally Agree). See Appendix B Writing Self-Efficacy Rating Scale for items. Self-efficacy for writing was evaluated at pretest and posttest following revising instruction.

A graduate student who majored in special education with experiences in literacy (particular writing) teaching and was unfamiliar with the study's research design independently scored all the written plans and essays (for TWW, %CWS, text structure elements, and text quality) for compare-contrast and explanation. To establish the interrater reliability, the instructor also scored all the written plans and essays. Before independently scoring the students' writing products, the graduate student was trained to use the rubrics first and then scored 3 written plans and 3 essays together with the instructor to attain at least 80% agreement. Interrater

reliabilities for written plans, %CWS, text structure elements (for compare-contrast essays only), and overall writing quality were .89, .86, .84, and .90, respectively.

Treatment Integrity

A treatment integrity checklist that described every detailed instructional step was developed to ensure that intervention procedures were implemented as intended. The instructor checked off each step as it was completed. All the instructional lessons were audiotaped, and the graduate student who scored all the written plans and essays listened to half of the taped lessons selected at random and checked off the steps on the checklist. At the end of the study, the examination of the checklist showed that the instructor completed 94% of the planning instruction lessons steps and 96% of the revising instruction lessons steps.

Experimental Design

A multiple probes, multiple baseline across participants during baseline, posttest, and maintenance was adopted for experimental control. The three students received baseline probes, the strategy instruction, posttest probes, and a maintenance probe, with planning strategy instruction preceding revising strategy instruction and each followed by a posttest phase.

Baseline. During the baseline phase, each participant was asked to compose a compare-contrast text based on a given writing probe in 40 minutes. Lined paper and a pencil were provided. The instructor didn't provide any help for writing mechanics or feedback on the text quality. Once a stable baseline was established (i.e., given at least three probes, each student demonstrated consistent performance on the measure of text structure elements in terms of level and trend), the planning strategy instruction was introduced to the student. Additionally, planning time was recorded and any written plans generated were evaluated. Essays were also scored for TWW, %CWS, text structure elements, and overall quality. Sarah, Ethan, and Kayla

41

completed 3, 5, and 6 compare-contrast baseline essays, respectively. Each student also wrote one explanation essay and completed the writing self-efficacy scale during the baseline phase.

Instruction. Two instructional conditions (i.e., planning and revising strategy instruction) were included in the intervention. During the instructional phase, each student received a 40-minute individual instructional session three times a week. The planning and revising strategy instruction both included the six stages of SRSD described previously. It is worth noting that some stages took more than one session to complete. The instruction continued until the student demonstrated mastery of the strategy, defined as 100% correct on oral questions regarding key instructional elements for each session. For example, the students needed to correctly answer questions such as, "What are the words representing the four parts of a compare-contrast essay as well as how to write a good compare-contrast essay using the words as a reminder for brainstorming ideas, setting goals, organizing information, and checking possible errors? What does each letter represent? What are the steps of the strategy?" If the student was unable to meet the session criterion for mastery, additional instructional sessions were added to help strengthen understanding and use of the strategy. Only when the first student demonstrated improvement and the second student maintained a stable baseline did the instruction for the second student begin, and so on for the third student. For planning strategy instruction, Sarah took 14 sessions, Ethan took 10 sessions, and Kayla took 11 sessions. For revising strategy instruction, Sarah took 10 sessions, Ethan took 6 sessions, and Kayla took 9 sessions.

Posttest. Sarah, Ethan, and Kayla completed 3 compare-contrast probes for posttest 1 immediately after the planning instruction and 3 compare-contrast probes for posttest 2 immediately after the revising instruction to examine the efficacy of the planning instruction alone and the sequential effects of planning and revising instruction, respectively. The posttest

writing probes were administered in the same manner as the baseline probes. Each student also wrote one explanation essay during posttest 1 after planning instruction and during posttest 2 after the revising instruction to examine possible generalization effects. They also completed the writing self-efficacy scale and attitudes survey during posttest 2.

Maintenance. Sarah, Ethan, and Kayla completed 2 maintenance compare-contrast essays four weeks following the revising instruction to investigate to what extent the strategy training gains were maintained. The compare-contrast maintenance probes were administered in the same manner as during baseline. Each student also completed an explanation essay to examine the potential maintenance of the generalization effects.

Instructional Procedures

Both the planning and revising strategy instruction were implemented using the SRSD framework, including the following six steps. First, the instructor helped the student develop background knowledge related to the taught strategy and self-regulation skills. For example, prior to teaching TREE BRANCH to facilitate planning and writing compare-contrast essays, the instructor discussed with students what compare-contrast essays accomplish. The instructor also discussed with students what self-talk is and why self-talk is needed during writing. Second, the instructor discussed with the student the strategy in detail. For example, the instructor briefly introduced the strategy, prompted the student to think about why they needed the strategy to help write good compare-contrast essays, and explained how the strategy can help with making comparisons and contrasts used in daily decision-making situations. Third, the instructor modeled the strategy use step-by-step. Fourth, the instructor gradually ceded control for strategy implementation to the student with feedback and coaching. Fifth, the student was required to memorize the acronyms for the strategy steps and what each strategy step entailed. Sixth, the

student was asked to independently write on a given prompt using the taught strategy and provided feedback (see Appendix C Lessons Plans for the planning and revising lesson scripts).

Planning Strategy Instruction. The participants were provided with a strategy reminder card and a planning sheet (see Appendix D Planning Sheet). The strategy mnemonic developed by Troia (2013), TREE BRANCH (TREE = Tell What You Are Comparing and Why, Report Important Similarities and Differences, Elaborate on Each Point, End with What the Reader Should Learn; BRANCH = Brainstorm Idea Words, Recite Self-Talk, Ask if Ideas Will Meet Goals, Now Write with Good Organization, Powerful Words, and Accurate Information, Challenge Myself to Come Up with More Ideas, Have A Look for Mistakes), was used to help students not only plan and write compare-contrast papers, but also engage in self-regulation of cognitive processes like goal setting, self-evaluation, and self-encouragement that are highlighted by the SRSD model of strategy instruction. The planning instruction lesson plans were adapted from MacArthur and Philippakos (2010).

Lesson 1: Activating background knowledge. The instructor introduced compare-contrast expository writing and the TREE BRANCH planning strategy and discussed with the student the importance of learning the planning strategy to help with writing good compare-contrast essays (e.g., connecting compare-contrast writing to both school learning and everyday decision-making situations). The instructor then showed two good examples of compare-contrast essays representing two different ways to organize similarities and differences, one at a time, and discussed with the student how each of the TREE parts was well presented in the essays. Throughout the discussion of the good examples, the instructor asked the student to highlight the trait of each paragraph as well as the transition words throughout the essay. A negative example was then shown to the student as a contrast and the student was asked to think about how this

essay missed key TREE parts that prevented it from being a good compare-contrast paper. When finishing the discussion of all the essay examples, the instructor first modeled to track the number of the TREE parts and traits (included in the essay examples) using a progress-tracking chart. The student was then given one of his/her compare-contrast essays produced during the baseline phase, and learned to record the TREE parts and traits for his/her baseline performance on the progress-tracking chart with the help of the instructor.

Lesson 2: Modeling. The instructor reviewed the previous lesson and the student needed to correctly answer all the questions (regarding their understanding of what a compare-contrast essay is and its importance to schooling and decision-making in daily life) so as to continue the lesson. The instructor then modeled using TREE BRANCH step-by-step, from completing the planning sheet by establishing quality and quantity goals, brainstorming and organizing ideas based on the text structure, and writing down self-talk statements, to composing a compare-contrast essay on a given topic. After modeling, the instructor modeled recording the number of TREE parts and traits included in this compare-contrast essay on the progress-tracking chart. At the end of this lesson, the instructor discussed with the student the improvement in writing performance by comparing the paper the instructor just wrote using TREE BRANCH to the student's own pretest paper. The student was also asked to think of other tasks to which s/he could apply TREE BRANCH to promote generalization of the taught strategy.

Lesson 3: Guided practice. The instructor first reviewed the TREE BRANCH mnemonic with the student. During this lesson, the instructor practiced using TREE BRANCH to plan and compose a compare-contrast essay collaboratively with the student. The instructor and the student then evaluated this essay together by recording the number of TREE parts and traits included on the progress-tracking chart. At the end of this lesson, the instructor discussed with

the student the improvement in writing after using TREE BRANCH and promoted generalization of the strategy to other tasks.

Lesson 4: Memorization. The instructor told the student that s/he needed to memorize the TREE BRANCH mnemonic aid and the planning sheet so as to use them for writing compare-contrast essays in the future. The instructor encouraged the student to memorize the mnemonic aid and planning sheet using his/her own way. At the end of the lesson, the instructor rehearsed TREE BRANCH with the student and checked the student's drawing of the planning sheet on a blank paper to make sure s/he memorized to criterion (defined as writing down TREE BRANCH, including the quality goal and quantity goal, and drawing the graphic organizer that reflected the compare-contrast text structure).

Lesson 5: Independent practice with mnemonic chart. The student was asked to independently use the TREE BRANCH mnemonic aid and the planning sheet to plan and compose a compare-contrast essay on a given topic. The student was also asked to evaluate this essay by recording the TREE parts and traits included on the progress-tracking chart. The instructor provided help and feedback as needed. At the end of this lesson, the instructor discussed with the student the improvement in writing after using TREE BRANCH and promoted generalization of the strategy to other tasks.

Lesson 6. Independent practice without mnemonic chart. The instructor first reviewed the TREE BRANCH mnemonic aid with the student and told the student that this lesson focused on weaning off the mnemonic aid and the planning sheet. The student was given a blank paper and asked to individually plan and compose a compare-contrast essay on a given topic without using the mnemonic aid and the planning sheet. The student was encouraged to write down the TREE BRANCH on top of the blank paper, and then write down goals and self-talk verbiage, and draw

the graphic organizer for use during the writing process. The instructional phase was ended when the student independently planned and wrote a compare-contrast essay including all four parts of TREE, following all steps of BRANCH, and including at least three important traits with supporting details for similarities and differences.

Revising Strategy Instruction. The students were taught two cycles of revising using the SEARCH checklist (Set goals, Examine paper to see if it makes sense, Ask if you said what you meant, Reveal picky errors, Copy over neatly, and Have a last look at errors) (Ellis & Friend, 1991) to address both content and writing mechanics. In cycle 1, after the instructor modeled how to use the SEARCH checklist to revise essays, the student was first given the checklist and asked to practice revising his/her essay using the checklist together with the instructor. In cycle 2, the student was asked to practice revising essays using the SEARCH checklist individually.

Lesson 1: Activating background knowledge. The instructor introduced the lesson and discussed the purpose for learning the revising strategy. The instructor asked the student to think about why and when people need to revise papers, as well as shared any previous revising experiences s/he had. The instructor then provided comments on the student's response and pointed out that key purpose of the revising was to substantially improve the writing quality, at both content and mechanics levels. The instructor then showed the student the SEARCH checklist and explained each step of SEARCH to the student. Self-talk statements to facilitate the use of the revising strategy were discussed, and the student was reminded to use his/her self-talk consistently to encourage, instruct, and praise him or herself throughout the revising process. The instructor then presented a compare-contrast essay quality scoring sheet (see Appendix E Evaluation for Compare-Contrast Essay Quality), explained the rubric in details and modeled scoring the quality of the example compare-contrast essays used in the planning instruction (one

good example vs. one poor example).

Lesson 2: Modeling. The instructor reviewed the previous lesson and asked the student to explain the purpose and the importance of using the revising strategy. The instructor then presented the student with the first compare-contrast essay s/he wrote during the posttest immediately after planning instruction, and modeled using the compare-contrast essay quality scoring sheet to evaluate the quality of this essay. The instructor then modeled using the SEARCH checklist step-by-step to locate problems and revise accordingly. When finished revising, the instructor used the same essay quality scoring sheet to evaluate the essay a second time and discussed the improvement due to the use of the revising strategy. At the end of this lesson, the student was also asked to think about other tasks for which s/he could use this strategy.

Lesson 3: Guided practice. The instructor reviewed the SEARCH checklist with the student at the beginning of the lesson. The student was then given the second paper s/he wrote during the posttest immediately following planning instruction, and was asked to help the instructor to revise using the SEARCH checklist. The instructor guided the whole revising process, but the student was asked to engage actively by responding to the instructor's prompting questions when going through each step of the SEARCH checklist and providing suggestions for revising accordingly.

Lesson 4: Memorization. The instructor told the student that s/he needed to memorize the SEARCH checklist so as to use it for effectively revising his/her essays in the future. The instructor encouraged the student to memorize the SEARCH checklist using his/her own way. At the end of the lesson, the instructor rehearsed the SEARCH checklist with the student and made sure s/he memorized all the steps to criterion (defined as reciting the acronym and all associated

steps for SEARCH with 100% accuracy).

Lesson 5: Independent practice with mnemonic chart. The student was given the third compare-contrast essay that s/he wrote during posttest immediately after planning instruction and was asked to individually use the SEARCH checklist to revise this paper. The student also used the quality scoring sheet to evaluate and compare the essay before and after applying the revising strategy. The instructor provided help and feedback as needed. At the end of this lesson, the instructor discussed with the student the improvement in writing quality after using the SEARCH checklist and promoted generalization of the revising strategy to other tasks.

Lesson 6: Independent practice without mnemonic chart. The instructor first reviewed the SEARCH checklist with the student and told the student that this lesson focused on weaning off the checklist. The student was given a blank paper and encouraged to write down the SEARCH mnemonic on top of the blank paper, together with all the key steps. The student then revised one of the compare-contrast essays that s/he wrote during baseline and also used the quality scoring sheet to evaluate and compare the essay quality before and after applying the revising strategy. The instructional phase was ended when the student could independently revise an essay following all the steps of SEARCH.

Effect Size

Because the current study adopts a single-subject experimental design, effect sizes were calculated using the percentage of non-overlapping data (PND) points; the proportion of data points in the planning and revising strategy instructional conditions that exceed the highest value in the baseline phase. As recommended by Scruggs and Mastropieri (2001), PND scores above 90% indicate a very effective treatment while scores between 70% and 90% represent an effective treatment. PND for compare-contrast essay text structure elements and compare-

contrast essay quality are reported in the results section below.

Social Validity

       A student satisfaction survey was given after the intervention package (sequential planning and revising instruction) to determine how well participants believed each kind of strategy instruction worked. The students were asked to respond to these items: 1) whether s/he liked the writing instruction; 2) whether s/he thought s/he benefited from this intervention; 3) whether s/he wanted to keep using the TREE BRANCH strategy to help plan and write in the future; and 4) whether s/he wanted to keep using the SEARCH checklist to help revise papers in the future. When responding to the survey, the students were asked to read each statement and indicate their agreement or disagreement on a 7-point scale Likert-type scale (0 = Totally Disagree, 1 = Mostly Disagree, 2 = Disagree A Little, 3 = Don't Agree or Disagree, 4 = Agree A Little, 5 = Mostly Agree, and 6 = Totally Agree) (See Appendix F Student Satisfaction Survey).

Table 1 Participant Information

Name (Pseudonym)	Age (in months)	Grade	Gender	Ethnicity	TONI-3	OWLS-LC	OWLS-OE	OWLS-WE
Sarah	115	4	Female	Caucasian	115	103	90	40
Ethan	138	6	Male	Caucasian	105	86	91	40
Kayla	129	5	Female	African-American	92	73	81	40

Note. TONI-3 = Test of Nonverbal Intelligence-Third Edition; OWLS-LC = Oral and Written Language Scales-Second Edition, Listening Comprehension subtest; OWLS-OE = Oral and Written Language Scales-Second Edition, Oral Expression subtest; OWLS-WE = Oral and Written Language Scales-Second Edition, Written Expression subtest; all scores are standard scores with a mean of 100 and SD of 15.

CHAPTER FOUR
RESULTS

The results are reported for the writing process measures (i.e., planning time, written plans, and revising behaviors) and writing product measures (i.e., length, accuracy, text structure elements, and overall writing quality) for compare-contrast essays across the baseline, posttest 1 (immediately after planning instruction), posttest 2 (immediately after revising instruction), and maintenance four weeks later. The writing self-efficacy scores are reported for baseline and posttest 2 to evaluate effects of the writing instruction on the students' perceived competence for writing expository essays in general and compare-contrast essays in particular. The students' writing performance on the uninstructed explanation writing genre across all phases of the study are then reported to examine generalization effects of the planning and revising instruction. Finally, the results for the social validity questionnaire are reported to investigate the students' attitudes towards the writing instruction.

Compare-Contrast Writing Process Measures

Planning Time

None of the three students were found to spend time on planning during the baseline phase of the study. All three students were found to engage in advanced planning across posttest 1, posttest 2, and maintenance compared to no planning during baseline. After learning TREE BRANCH to help with planning and composing compare-contrast essays, all three students were found to plan prior to writing during posttest 1, with average planning time of 12.67 minutes, 12.67 minutes, and 8.33 minutes for Sarah, Ethan, and Kayla, respectively. After learning the SEARCH checklist to help with revising, all three students were found to spend relatively less time planning during

52

posttest 2, with average planning time of 3.67 minutes, 4.33 minutes, and 7.67 minutes for Sarah, Ethan, and Kayla, respectively. During maintenance probes given four weeks after the writing instruction ceased, all three students were still found to engage in planning, with average planning time of 8 minutes, 3 minutes, and 8.5 minutes for Sarah, Ethan, and Kayla, respectively. Sarah, Ethan, and Kayla showed a consistent pattern of significant increase in planning time from the baseline to posttest 1, and then some decrease from posttest 1 to posttest 2. Sarah and Kayla showed increased planning time from posttest 2 to maintenance, whereas Ethan was found to spend less time on planning during the maintenance compared to posttest 2 (see Table 2).

Written Plans

None of students were found to generate any written plans during baseline. All three students were found to generate acceptable to good written plans across posttest 1, posttest 2, and maintenance. After receiving planning strategy instruction, all three students were found to generate good written plans prior to writing during posttest 1, with average scores for written plans of 4.33, 4.67, and 4.00 for Sarah, Ethan, and Kayla, respectively. After receiving revising instruction, all three students were found to generate written plans with average scores of 3.33, 2.33, and 4.00 for Sarah, Ethan, and Kayla, respectively during posttest 2. During maintenance, all three students were found to generate written plans with average scores of 3.50, 2.00, and 4.00 for Sarah, Ethan, and Kayla, respectively. Sarah, Ethan, and Kayla showed a consistent pattern of significant increase in quality of written plans from baseline to posttest1. From posttest 1 to posttest 2, Sarah and Ethan showed slightly decreased quality of written plans, whereas Kayla's written plans maintained the same quality. From posttest 2 to maintenance, the average

53

scores of Sarah's written plans showed a slight increase; the average scores of Ethan's written plans showed a slight decrease; and the average score of Kayla's written plans maintained the same (see Table 2).

Descriptively, during posttest 1, Sarah, Ethan, and Kayla wrote down the quality goal (i.e., including four parts of the TREE) and quantity goal (i.e., including at least three important traits), drew the graphic organizer that reflected the compare-contrast text structure, and generated three traits and appropriate supporting details for reporting similarities and differences. During both posttest 2 and maintenance, Kayla's written plans included the same key elements as in posttest 1. Sarah generated acceptable written plans that included the compare-contrast graphic organizer, three traits and supporting details, but no specific quality or quantity goals were written down. Ethan included three key traits with some supporting details in the written plans, but didn't draw the compare-contrast graphic organizer or include any writing goals.

Revising Behaviors

None of the students were found to engage in any revising during either baseline or posttest 1. After learning the SEARCH checklist, the three students were all found to purposefully allot time at the end of the writing lesson for revising their essays during both posttest 2 and maintenance. However, all the revisions made by the students focused mostly on mechanical errors (e.g., spelling, capitalization, punctuation), except that Sarah corrected a few errors that altered meaning for one essay during posttest 2 and one essay during maintenance.

Compare-Contrasting Writing Product Measures

Total Words Written (TWW)

TWW represented the length of the students' compare-contrast essays. During baseline, the average length of the essays written by Sarah, Ethan, and Kayla were 23, 54, and 106 words, respectively. During posttest 1, the average length of the essays written by Sarah, Ethan, and Kayla were 155, 149, and 282 words, respectively. Therefore, the average length increases for Sarah, Ethan, and Kayla from baseline to posttest 1 were about 574%, 176%, and 166%, respectively. During posttest 2, the average length of essays written by Sarah, Ethan, and Kayla were 104, 120, and 192 words, respectively. Though all three students' essays demonstrated a decline in text length from posttest 1 to posttest 2, the average length of their papers written during posttest 2 were still about 352%, 122%, and 81% greater than those written in baseline for Sarah, Ethan, and Kayla, respectively. During maintenance, the average length of the essays that Sarah, Ethan, and Kayla wrote were 227, 86, and 213 words, respectively. Comparing to posttest 2, Sarah and Kayla showed an increase in text length at maintenance, whereas Ethan demonstrated a decrease. However, they were still substantially longer than those written in baseline: 887%, 59%, and 101% for Sarah, Ethan, and Kayla, respectively (see Table 2).

Percentage of Correct Writing Sequences (%CWS)

Percentage CWS represented the accuracy of the compare-contrast essays. During baseline, the average %CWS of the essays written by Sarah, Ethan, and Kayla were 46.9%, 54.5%, and 71.8%, respectively. During posttest 1, the average %CWS of the essays written by Sarah, Ethan, and Kayla were 69.9%, 74.9%, and 67.3%. Therefore, Sarah and Ethan showed average increases in %CWS of 23% and 20.4%, respectively,

from baseline to posttest 1, while Kayla showed a decrease in %CWS of 4.5%. During posttest 2, the average %CWS of the essays that Sarah, Ethan, and Kayla wrote were 68.8%, 91.3%, and 81.5%, respectively. Sarah demonstrated a slight decrease in %CWS from posttest 1 to posttest 2, whereas Ethan and Kayla both showed some increase. The average increases in %CWS during posttest 2 for Sarah, Ethan, and Kayla were 21.9%, 36.8%, and 9.7%, respectively, compared to baseline. During maintenance, the average %CWS of the essays that Sarah, Ethan, and Kayla wrote were 74.9%, 81.1%, and 77.0%, respectively. Comparing to posttest 2, Sarah showed an increase in %CWS for maintenance, whereas Ethan and Kayla demonstrated some decrease in %CWS. However, the average increases in %CWS during maintenance for Sarah, Ethan, and Kayla were 28.0%, 26.6%, and 5.2%, respectively, compared to baseline (see Table 2).

Text Structure Elements

During baseline, Sarah, Ethan, and Kayla established a stable baseline with mean scores of 4.3, 7.0, and 11.2, respectively, for the compare-contrast text structure elements. During posttest 1, all three students' essay structure scores were higher than baseline, with average scores of 20.7, 22.7, and 26.7 for Sarah, Ethan, and Kayla, respectively. Therefore, the average gains for Sarah, Ethan, and Kayla were 16.4, 15.7, and 15.5, respectively, and the percentage of non-over-lapping data (PND) for each was 100%. During posttest 2, all three students showed some decrements in text structure elements, with Sarah, Ethan, and Kayla obtaining mean scores of 13.0, 17.3, and 24.7, respectively. Therefore, Sarah, Ethan, and Kayla demonstrated average decreases in text structure element scores of 7.7, 5.4, and 2.0, respectively, from posttest 1 to posttest 2. Therefore, the PND for each was 0% for posttest 2, compared to posttest 1. However, the mean

scores for all three students were still higher than their baseline performance. During maintenance, the mean scores that Sarah, Ethan, and Kayla obtained were 14.0, 16.0 and 26.0, respectively. Therefore, Sarah and Kayla demonstrated increased performance from posttest 2 to maintenance (average increase of 1 for Sarah and 2.7 for Kayla), whereas Ethan showed decreased performance (average decrease of 1.3). However, the mean scores for all three students during maintenance were higher than their baseline performance and the PND for each was 100% for maintenance, compared to the baseline (see Table 2 and Figure 1).

Further components analysis was conducted to examine how the writing instruction affected each of the compare-contrast text structure elements as well as maintenance of the gains. The results showed that after receiving the planning instruction, Sarah obtained most gains in comparisons, traits, details, and conclusion (mean score increases of 7.0, 6.7, 1.67, and 1, respectively); Ethan showed most increases in comparisons, traits, summary, and use of transition words (mean score increases of 4.5, 2.7, 2,0, and 2.0, respectively); and Kayla gained most in traits, supporting details, and hook (mean score increases of 5.3, 4.8, and 2.0, respectively). After receiving the revising instruction, Sarah showed major decreases in comparisons and traits, although both elements still scored higher than baseline (mean score increases of 4.3 and 1.3, respectively). Ethan demonstrated major decreases in comparisons, and scored slightly lower than baseline performance (mean score decrease of 0.5), followed by decreases in traits and summary, which were still scored higher compared to baseline (mean score increases of 1.67 and 0.7, respectively). However, Ethan showed a significant increase in the number of supporting details after receiving the revising instruction, with mean score

increase of 3.3 compared to baseline. Kayla showed major decreases in traits and details, which were also scored higher than baseline performance (mean score increases of 3.3 and 3.1, respectively). The gains for all the elements were well maintained for all three students (see Table 3), except that Sarah's scores on traits fell back to her baseline level as well as Kayla's scores on the number of comparisons (mean score decreases of 1.2 compared to the baseline).

Writing Quality

During baseline, Sarah, Ethan, and Kayla established a stable baseline with mean scores of 9.0, 10.4, and 10.6, respectively, out of maximum 24 for overall writing quality. During posttest 1, all three students wrote better quality papers than in baseline, with average scores of 17.0, 18.3, and 18.3 for Sarah, Ethan, and Kayla, respectively. Therefore, the average gains in quality were 8.0, 7.9, and 7.7 for Sarah, Ethan, and Kayla, and the percentage of non-over-lapping data (PND) was 100%. During posttest 2, all three students showed slightly decreased performance in overall writing quality compared to posttest 1, with Sarah, Ethan, and Kayla obtaining mean scores of 16.0, 17.7, and 18.0, respectively. Therefore, the PND for each was 0% for posttest 2, compared to posttest 1. However, the mean scores for all three students during posttest 2 were still higher than their baseline writing quality, During maintenance, the mean quality scores that Sarah, Ethan, and Kayla obtained were 16.0, 16.0 and 18.5, respectively. Therefore, Sarah's performance in posttest 2 was maintained; Ethan's performance showed a slight decrease from posttest 2 (with average decrease of 1.7), whereas Kayla's performance demonstrated a slight increase (with average increase of 0.5). However, the mean scores for all three students during maintenance were higher than their baseline performance,

and the PND for each was 100% for maintenance, compared to the baseline (see Table 2 and Figure 2).

Explanation Writing Process Measures

Planning

None of the students were found to engage in any planning during baseline performance. During posttest 1, Sarah still didn't engage in any planning, whereas Ethan and Kayla were found to spend 7 minutes and 6 minutes, respectively, for planning prior to writing their explanation essays. During posttest 2, Sarah, Ethan, and Kayla spent 4 minutes, 4 minutes, and 7 minutes, respectively on planning. And during the maintenance probes four weeks later, Sarah, Ethan, and Kayla spent 5 minutes, 2 minutes, and 4 minutes on planning prior to composing the explanation essays (see Table 4).

Revising

None of the students were found to engage in any revising during either baseline or posttest 1. The three students were all found to spend about five minutes on average at the end of the writing lesson to revise their explanation essays during both posttest 2 and maintenance. However, all the revisions (8 revisions per essay on average) made by the three students focused on mechanical errors, except that Sarah corrected two errors that changed meaning for one explanation essay during posttest 2.

Explanation Writing Product Measures

Total Words Written (TWW)

During baseline, the length of the explanation essays that Sarah, Ethan, and Kayla wrote were 20, 26, and 88 words, respectively. During posttest 1, the length of the explanation essays written by Sarah, Ethan, and Kayla were 134, 68, and 309 words.

Therefore, the average length increases for Sarah, Ethan, and Kayla from baseline to posttest 1 were about 570%, 162%, and 215%, respectively. During posttest 2, the length of the explanation essays that Sarah, Ethan, and Kayla wrote were 143, 78, and 164 words, respectively. Sarah and Ethan were found to show increased essay length from posttest 1 to posttest 2, whereas Kayla showed some decrease in length. However, all the essays written in the second posttest were still longer than in baseline, with increases of about 615%, 200%, and 86%, respectively, for Sarah, Ethan, and Kayla. During maintenance, the length of the explanation essays that Sarah, Ethan, and Kayla wrote were 107, 60, and 107 words, respectively. Comparing to posttest 2, all three students showed a decrease in essay length during maintenance. However, the length of all maintenance essays were still higher than those written in baseline, with increases being 435%, 131%, and 21.6%, respectively (see Table 4).

Percentage of Correct Writing Sequences (%CWS)

During baseline, the %CWS of the explanation essays written by Sarah, Ethan, and Kayla were 81.0%, 41.4%, and 70.4%, respectively. During posttest 1, the %CWS of the explanation essays written by Sarah, Ethan, and Kayla were 66.7%, 82.7%, and 77.4%. Therefore, Ethan and Kayla showed increases in %CWS of 41.3% and 7.0%, respectively, from baseline to posttest 1, whereas Sarah showed a decrease in %CWS of 14.3%. During posttest 2, the %CWS of the explanation essays that Sarah, Ethan, and Kayla wrote were 75.6%, 84.5%, and 84.1%, respectively. All three students demonstrated increases in %CWS from posttest 1 to posttest 2. Compared to baseline, the increases in %CWS for Ethan and Kayla were 43.1% and 13.7%, respectively, while the decrease in %CWS for Sarah was 5.4%. During maintenance, the %CWS of the

explanation essays that Sarah, Ethan, and Kayla wrote were 76.6%, 96.8%, and 75.4%, respectively. However, the increases in %CWS during maintenance for Ethan and Kayla were 55.4% and 5.0%, respectively, compared to baseline. Whereas Sarah showed a decrease in maintenance of 4.4 (see Table 4).

Writing Quality

During baseline, Sarah, Ethan, and Kayla established a stable baseline with scores of 9, 11, and 11, respectively, out of maximum 24 for overall writing quality. During posttest 1, all three students wrote qualitatively better explanation essays than in baseline, with the score of 14, 16, and 16 for Sarah, Ethan, and Kayla, respectively. Therefore, Sarah, Ethan, and Kayla each made gains in quality of 5 points from baseline to posttest 1.

During posttest 2, all three students showed further enhanced performance in overall writing quality compared to posttest 1, with Sarah, Ethan, and Kayla obtaining scores of 17, 18, and 18, respectively. The gains of scores in quality for all three students were 8, 7, and 7, respectively, compared to their baseline performance. During maintenance, the scores that Sarah, Ethan, and Kayla obtained were 14, 17 and 16, respectively. Therefore, all three students demonstrated decreases in writing quality for their explanation papers from posttest 2 to maintenance, but compared to baseline, the gains in quality for Sarah, Ethan, and Kayla were 5, 6, and 5 (see Table 4).

Self-efficacy for Writing

All the students were asked to complete the writing self-efficacy scale prior to writing instruction (i.e., baseline) and after the completion of all writing instruction (i.e. posttest 2). During baseline, Sarah, Ethan, and Kayla obtained self-efficacy scores of 28,

22, and 51, respectively, out of 54 possible. After receiving the sequential planning and revising instruction, Sarah, Ethan, and Kayla obtained self-efficacy scores of 34, 26, and 48, respectively. Therefore, Sarah and Ethan made gains in self-efficacy scores of 6 and 4 points, respectively, whereas Kayla showed a decrease in her self-efficacy of 3 points.

Social Validity

Sarah, Ethan, and Kayla obtained scores of 14, 18, and 23 (out of 24), respectively on the student satisfaction survey after receiving the sequential planning and the revising instruction. In responding to the questions on the survey, both Ethan and Kayla indicated that they liked the writing instruction very much. Sarah held a neutral attitude towards the writing instruction. All three students believed they benefited from the writing instruction. Kayla indicated she would like to keep using the TREE BRANCH strategy to help with planning and writing in the future. Sarah and Ethan said they were not sure whether they would like to keep using the TREE BRANCH strategy as they couldn't remember all about this strategy at the point of completing the survey, but they both believed TREE BRANCH was very helpful. All three students also indicated willingness to keep using the SEARCH checklist to help revise papers in the future.

Table 2 Results for Compare-Contrast Essays: Writing Process and Product Measures

Student (number of compositions)	Average Planning Time (in minutes)	Written Plans (max. 5)	TWW	%CWS	Text Structure Elements	Quality (max. 24)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Sarah						
Baseline (3)	0.00 (0.00)	0.00 (0.00)	23 (3.05)	46.9 (7.17)	4.3 (2.08)	9.0 (1.73)
Posttest 1 (3)	12.67 (4.62)	4.33 (0.58)	155 (37.02)	69.9 (3.29)	20.7 (3.06)	17.0 (2.00)
Posttest 2 (3)	3.67 (1.53)	3.33 (0.58)	104 (13.61)	68.8 (7.55)	13.0 (2.00)	16.0 (1.00)
Maintenance (2)	8.00 (0.00)	3.50 (0.71)	227 (59.40)	74.9 (7.85)	14.0 (4.24)	16.0 (1.41)
Ethan						
Baseline (5)	0.00 (0.00)	0.00 (0.00)	54 (13.43)	54.5 (15.33)	7.0 (1.87)	10.4 (0.55)
Posttest 1(3)	12.67 (2.52)	4.67 (0.58)	149 (33.47)	74.9 (2.53)	22.7 (1.15)	18.3 (1.15)
Posttest 2 (3)	4.33 (0.58)	2.33 (0.58)	120 (14.47)	91.3 (7.40)	17.3 (1.53)	17.7 (0.58)
Maintenance (2)	3.00 (1.41)	2.00 (0.00)	86 (26.87)	81.1 (11.24)	16.0 (5.66)	16.0 (1.41)
Kayla						
Baseline (6)	0.00 (0.00)	0.00 (0.00)	106 (17.70)	71.8 (4.39)	11.2 (1.47)	10.6 (0.52)
Posttest 1 (3)	8.33 (2.08)	4.00 (0.00)	282 (26.50)	67.3 (8.35)	26.7 (0.58)	18.3 (0.58)
Posttest 2 (3)	7.67 (2.08)	4.00 (1.00)	192 (19.66)	81.5 (7.79)	24.7 (2.31)	18.0 (1.00)
Maintenance (2)	8.50 (2.12)	4.00 (0.00)	213 (11.31)	77.0 (9.19)	26.0 (1.41)	18.5 (0.71)

Note. Posttest 1: Immediate posttest after planning instruction; Posttest 2: Immediate posttest after revising instruction; Maintenance: Maintenance test four weeks after revising instruction.

Table 3 Results for Compare-Contrast Essays: Component Analysis for Text Structure Elements

Student (number of compositions)	Introduction M (SD)	Hook M (SD)	Comparisons M (SD)	Traits M (SD)	Details M (SD)	Summary M (SD)	Conclusion M (SD)	Transition Words M (SD)
Sarah								
Baseline (3)	0.0 (0.00)	0.3 (0.58)	3.0 (2.65)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	0.0 (0.00)	1.0 (0.00)
Posttest 1 (3)	1.0 (1.00)	0.7 (0.58)	10.0 (2.00)	4.7 (1.15)	1.67 (1.53)	0.0 (0.00)	1.0 (1.00)	1.7 (0.58)
Posttest 2 (3)	1.0 (1.00)	0.3 (0.58)	7.3 (3.06)	1.3 (1.16)	0.67 (1.16)	0.0 (0.00)	1.3 (0.58)	1.7 (0.58)
Maintenance (2)	0.5 (0.71)	1.5 (0.71)	7.0 (4.24)	0.0 (0.00)	2.0 (0.0)	0.0 (0.00)	2.0 (0.00)	1.0 (0.00)
Ethan								
Baseline (5)	0.0 (0.00)	0.0 (0.00)	6.2 (1.64)	0.0 (0.00)	0.4 (0.55)	0.0 (0.00)	0.0 (0.00)	0.6 (0.55)
Posttest 1(3)	1.7 (0.58)	1.0 (0.00)	10.7 (1.15)	2.7 (0.58)	1.3 (1.53)	2.0 (0.00)	1.3 (0.58)	2.0 (0.00)
Posttest 2 (3)	1.3 (0.58)	1.0 (0.00)	5.7 (2.52)	1.7 (1.53)	3.7 (2.08)	0.7 (1.15)	1.3 (0.58)	2.0 (0.00)
Maintenance (2)	2.0 (0.00)	1.0 (0.00)	7.0 (1.41)	1.5 (2.12)	1.5 (0.71)	1.0 (1.41)	1.0 (0.00)	1.0 (0.00)
Kayla								
Baseline (6)	0.8 (0.41)	0.0 (0.00)	8.7 (1.63)	0.0 (0.00)	0.2 (0.41)	0.0 (0.00)	0.7 (0.52)	0.8 (0.41)
Posttest 1 (3)	1.7 (0.58)	2.0 (0.00)	8.3 (1.53)	5.3 (1.15)	5.0 (1.73)	1.3 (1.15)	1.0 (1.00)	2.0 (0.00)
Posttest 2 (3)	1.7 (0.58)	2.0 (0.00)	9.0 (2.65)	3.3 (1.53)	3.3 (1.15)	2.0 (0.00)	1.3 (0.58)	2.0 (0.00)
Maintenance (2)	1.0 (0.00)	1.0 (0.00)	7.5 (3.54)	6.0 (0.00)	5.0 (1.41)	2.0 (0.00)	1.5 (0.71)	2.0 (0.00)

Note. Posttest 1: Immediate posttest after planning instruction; Posttest 2: Immediate posttest after revising instruction; Maintenance: Maintenance test four weeks after revising instruction.

Table 4 Results for Explanation Essays: Writing Process and Product Measures

Student (number of compositions)	Average Planning Time (in minutes)	TWW	%CWS	Quality
Sarah				
Baseline (1)	0	20	81.0	9
Posttest 1 (1)	0	134	66.7	14
Posttest 2 (1)	4	143	75.6	17
Maintenance (1)	5	107	76.6	14
Ethan				
Baseline (1)	0	26	41.4	11
Posttest 1(1)	7	68	82.7	16
Posttest 2 (1)	4	78	84.5	18
Maintenance (1)	2	60	96.8	17
Kayla				
Baseline (1)	0	88	70.4	11
Posttest 1 (1)	6	309	77.4	16
Posttest 2 (1)	7	164	84.1	18
Maintenance (1)	4	107	75.4	16

Note. Posttest 1: Immediate posttest after planning instruction; Posttest 2: Immediate posttest after revising instruction; Maintenance: Maintenance test four weeks after revising instruction.
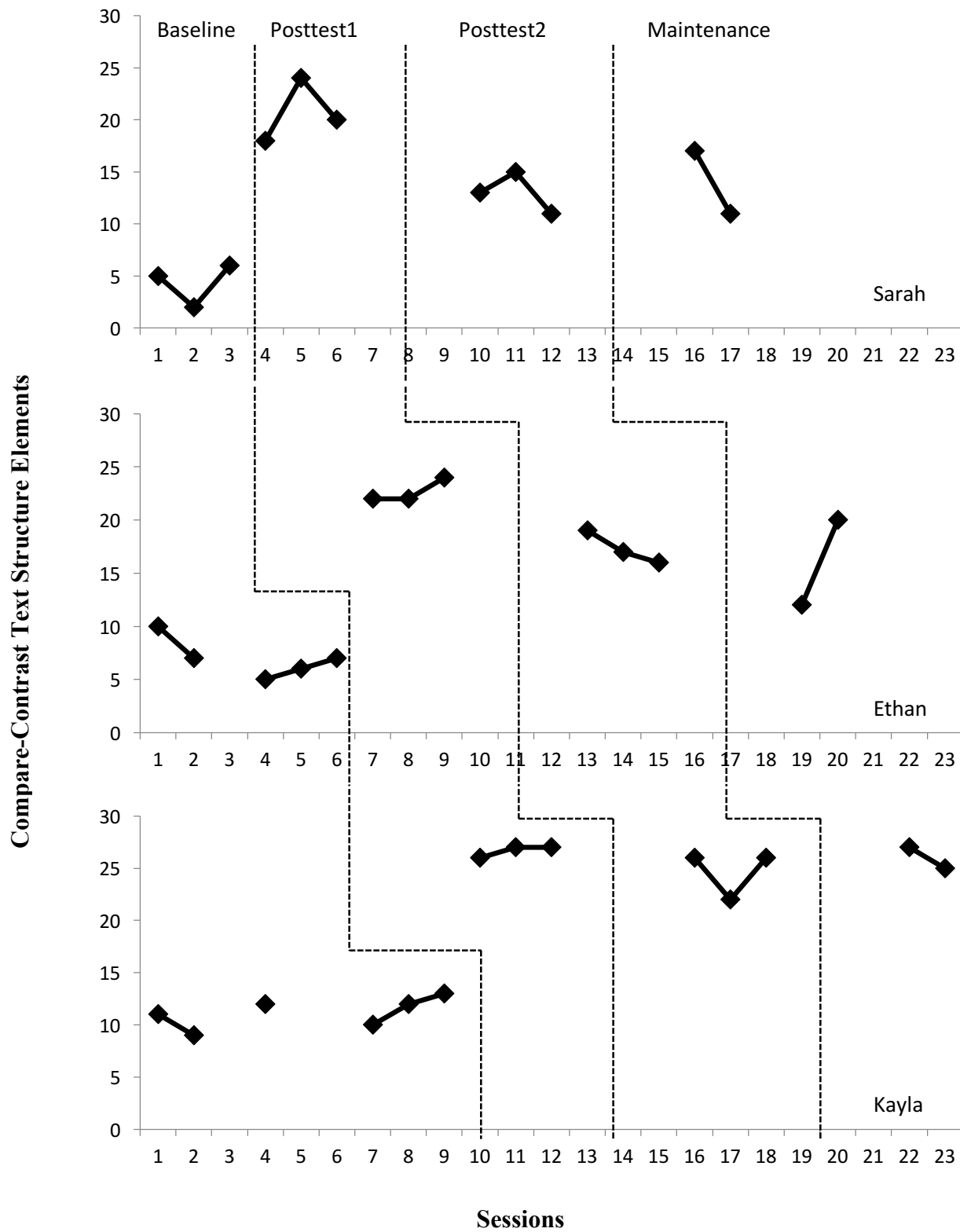
Figure 1 Compare-Contrast Text Structure Elements

66
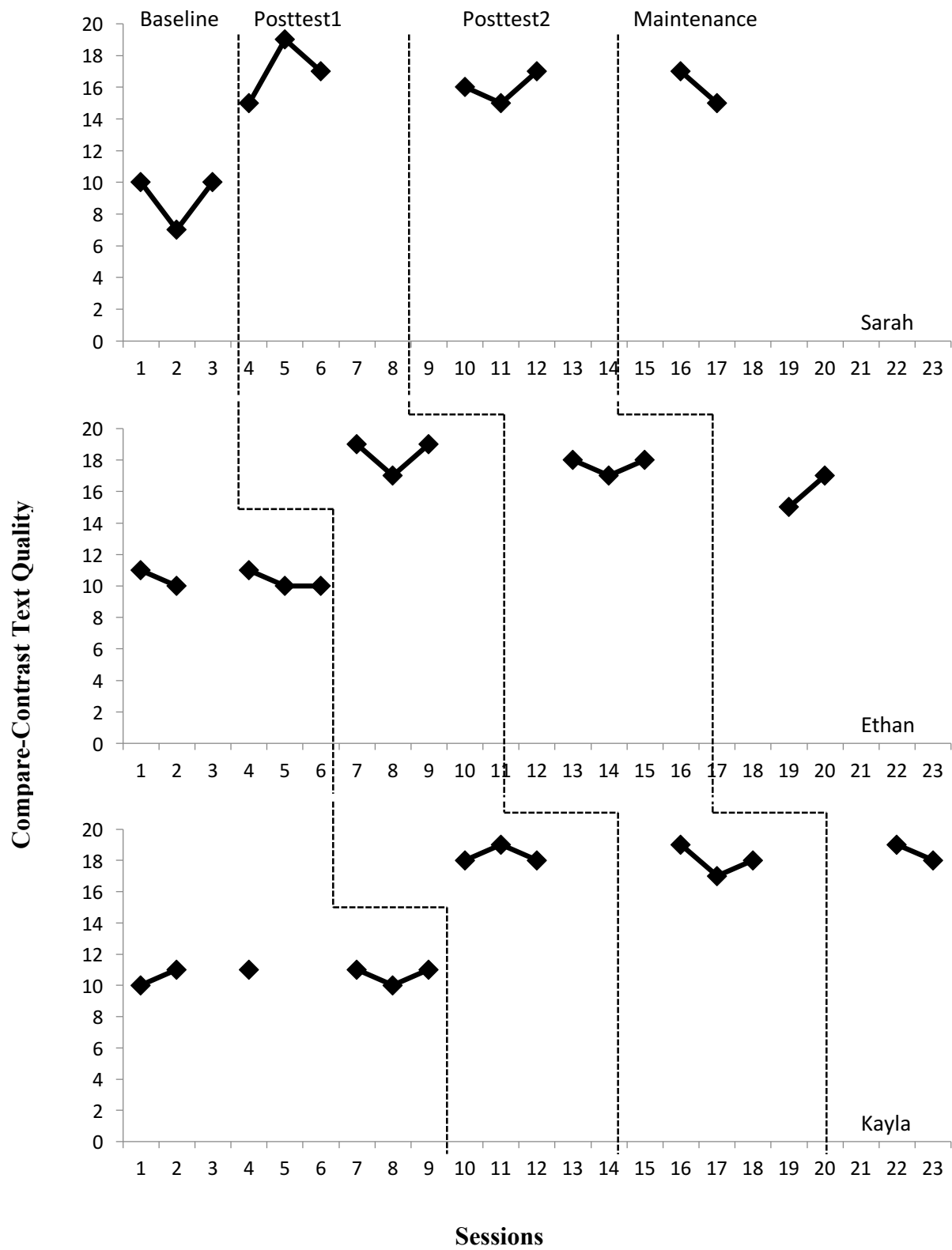
Figure 2 Compare-Contrast Text Quality

CHAPTER FIVE
DISCUSSION

Effects on Writing Performance: Planning Instruction within SRSD Framework

The planning instruction implemented within the SRSD framework included explicit teaching of the TREE BRANCH strategy to facilitate compare-contrast essay planning and writing and the procedures for regulating the taught strategy and the writing process (i.e., goal-setting, self-monitoring, self-instruction, and self-reinforcement). After receiving the planning instruction, all the students demonstrated significant increases in writing performance, including all the writing process and product measures. The three students were found to spend more time with planning prior to composing after receiving the planning instruction (average planning time across the three students increased from 0 minutes to over 12 minutes). Compared to no written plans generated in the baseline phase, all three students wrote down written plans for all their posttest 1 essays, which included a graphic organizer that reflected the compare-contrast text structure and at least three traits with appropriate supporting details for reporting similarities and differences. Two of the three students also included a quality goal (i.e., including four parts of TREE) and a quantity goal (i.e., including at least three important traits) in their written plans. The average scores for written plans across the three students increased from 0 (i.e., no written plans) to over 4 (i.e., good written plans that included graphic organizer, three traits, and supporting details). The students were also found to write much longer texts after receiving the planning instruction compared to baseline, with the average gains in length of at least 305%. Two of the three students showed increased writing accuracy measured by percent correct word sequences. All students included substantially more compare-contrast text structure elements (introduction, hook, comparisons, three important traits, supporting details, summary of the traits at the end, conclusion, and transition words) following planning instruction. The average scores

for text structure elements across the three students increased by nearly 16 points, from a baseline mean of 7.5 to a mean of 23.4 at posttest 1. All the students were also found to demonstrate better overall writing quality based on the four traits evaluated (i.e., ideas, organization, word choice, and sentence fluency). Out of 24 points, the average posttest compare-contrast essay increased by nearly 8 points, from a baseline mean of 10 to an immediate posttest mean of 17.9.

These findings are consistent with prior studies showing that planning instruction within the SRSD framework can help improve the writing behaviors and performance of struggling writers in terms of increased planning time (Saddler, 2006) and better written plans (De La Paz, 2001), longer (De La Paz & Graham, 2002) and more accurately written (Schnee, 2010) essays, and papers that include more text structure elements (MacArthur & Philippakos, 2010) with better overall text quality (Reid & Lienemann, 2006; Saddler & Asaro, 2007; Troia & Graham, 2002). What is most notable is that these gains were observed in children with language impairments, a population that has received little attention in writing strategy intervention scholarship; thus, SRSD is a viable instructional model for teaching such students to write and TREE BRANCH is a potentially useful strategy for teaching them how to compose compare-contrast essays.

The positive effects of the planning instruction within the SRSD framework on planning behaviors were expected as the instruction emphasized the importance of planning prior to composing texts. The SRSD framework employed here used the sequence of instructor modeling, guided practice with feedback, and independent practice with feedback for enabling students to use a planning organizer with accompanying quality and quantity goals, generate and organize relevant ideas for their papers, and select and practice self-talk to compensate for poor

strategic behavior and low motivation. Moreover, planning instruction was criterion-based, and consequently students had to be able to generate plans including these elements prior to moving forward with the next steps in instruction. Therefore, after receiving the planning instruction, the students were expected to spend more time planning ahead of writing because they worked to generate their written plans that included all or at least most of the elements for effective plans.

The significant length increases for all the students were expected as the TREE BRANCH strategy included goal-setting to include at least three important traits and appropriate supporting details for reporting similarities and differences, brainstorming ideas to compare and contrast each thing presented, goal setting and evaluation, and the admonishment to continue planning if more ideas were needed. The focus on content generation during planning and writing naturally led to longer papers. However, longer papers can introduce the possibility of more errors in writing mechanics, and few studies have evaluated the impact of planning instruction on writing accuracy (measured here with %CWS, which has typically been used to evaluate the impact of revising instruction). Schnee (2010) compared the effects of planning instruction alone and sequential planning and revising instruction on four 3rd and 4th graders with writing difficulties and found that planning instruction didn't generate consistent/positive effects on the students' writing accuracy as assessed by %CWS, but the sequential planning and revising instruction did have a positive impact on the students' writing accuracy. In the present study, planning instruction had a salutary effect on writing accuracy for two of the three students, with the average accuracy increased from 50.7% to 72.4%. As argued by Schnee (2010), this may suggest that planning instruction should not be expected to consistently or substantively impact writing accuracy as would be expected for revising instruction in which error correction is the focus.

Because the TREE BRANCH planning strategy explicitly emphasized compare-contrast text structure elements, including an introduction to what things were being compared, the hook explaining why, at least three traits to serve as topic sentences for body paragraphs in the essay, appropriate comparisons and details for reporting similarities and differences around specific traits, a summary of all the traits presented in the essay, a conclusion that informed readers what they should have learned about the topic, and appropriate transition words to enhance cohesion, it was not unexpected that all three students made strong gains in the number of elements included in their papers following planning instruction. Further components analysis showed that all three students obtained the greatest gains in key traits and the number of comparisons after receiving the planning instruction. Representative baseline and posttest 1 compare-contrast essays written by Sarah are shown below (spelling errors corrected). Sarah's first baseline essay compared and contrasted two restaurants, Wendy's and McDonald's. She seemed to understand the purpose of compare-contrast writing, but her essay lacked organization and only a few comparisons were provided for reporting similarities and differences.

> Wendy's has frosty and McDonald's does not.
> And McDonald's has a play place, but Wendy's
> doesn't. But they both have yummy food!

Sarah's second posttest 1 essay compared and contrasted cats and dogs. Her essay included a brief introductory statement, three important traits (i.e., good things, responsibility, and bad things), more comparisons to support similarities and differences around each trait, and a conclusion. Although she didn't summarize the three traits at the end, and it seemed that her description of "problems with cats and dogs" in her family aligned better with the third trait rather than conclusion, the overall improvement of her essay was clear compared to the baseline.

71

Today I'm comparing and contrasting cats and dogs as pets. Because they both are in my blood like my family, and my friends have both or one of the other pet. So now I'm going to tell you some good things about them. So they both play, are cute, funny, and playful. But did you know that cats are really good climbers but dogs not so much? And dogs can catch balls with their mouths. Now I'm going to tell you about responsibility. You have to feed both of them. On the other hand, with dogs you have to go outside a lot either to let the dog play outside in the fresh air or scoop some of their poop, but with cats they have a scoop and a litter box. Now here's the last one and it's about some bad things. So you can be allergic to both. So in conclusion, here are some problems with cats and dogs in my family. My brother Caleb is scared of dogs but not cats, and my dad is allergic to cats but not dogs. So I would love both.

Likewise, all the students were found to demonstrate significant improvement in writing quality after receiving the planning instruction. There was more or less a consistent match between the parts of the strategy and the traits assessed for quality: (a) TREE BRANCH helped students develop at least three key traits and appropriate supporting details focusing on comparing and contrasting the two things/concepts presented in the prompt, which contributed to the improvement in ideas; (b) TREE BRANCH facilitated the organization of generated ideas to fit the compare-contrast text structure, which impacted the organization of their essays; (c) TREE BRANCH encouraged students to use powerful words and phrases in their papers to hook the reader's attention, which contributed to enhanced word choice; and (d) the use of transition words throughout a paper to create a better flow of sentences was emphasized, affecting sentence fluency.

Effects on Writing Performance: Sequential Planning and Revising Instruction within SRSD Framework

After receiving the supplemental revising instruction, the students demonstrated increases in writing accuracy (average scores for %CWS across two of three students increased from

71.1% to 86.4%) and decreases in planning time (average planning time across the three students decreased from 11.22 minutes to 5.22 minutes), quality of written plans (average scores for written plans across the three students decreased from 4.33 to 3.22), text length (average decreases across the three students were 29%), and text structure elements (average scores for text structure elements across the three students decreased from 23.4 to 18.3) compared to receiving the planning instruction alone. The added revising instruction also didn't seem to affect overall essay quality (average scores for writing quality across the three students decreased very slightly from 17.9 to 17.2). The increase in writing accuracy for all three students in this study was expected given that the students learned to address mechanical errors from the revising instruction. This finding confirmed those obtained by Schnee (2010), possibly because revising seemed to increase awareness of writing conventions. The finding of decreased text length after further receiving the revising instruction was consistent with prior studies (De La Paz, Swanson, & Graham, 1998; Graham, 1997), suggesting that revising seems to have minimal effects on text production. Schnee (2010) also found that planning instruction had a greater impact on text length compared to the combined planning and revising instruction. Although few studies have differentiated the effects of the planning instruction alone and the sequential effects of planning and revising instruction on the planning time and the quality of written plans, the decreased performance on these two process measures suggests that the supplemental revising instruction didn't contribute to longer planning time or better written plans. Rather, due to the fact that the students were asked to use TREE BRANCH to help with planning and composing as well as the SEARCH checklist to revise their compare-contrast essays within 40 minutes after the revising instruction, the instructor noticed that all the students actually allocated time for different writing processes on purpose: they spent less time on planning and only wrote down the most helpful

information in their plans so as to save time for revising at the end. For example, Sarah had slightly decreased scores in her written plans after receiving the revising instruction, but her written plans still included key traits and supporting details (though not goals). Ethan showed slightly decreased scores in his written plans, which included all three traits with some supporting details. Kayla maintained the same quality for written plans that included quality and quantity goals, three traits, and accompanying details. All three students were found to spend some time engaging in revising behaviors after receiving revising instruction. This finding was expected as the SEARCH checklist targeted revising and editing at meaning-changing, organization, wring conventions, and goal evaluating. However, the fact that the revisions conducted by the three students focused on writing conventions might indicate that they hadn't internalized the revising instruction and could only perform revising at a mechanical rather than meaning-changing level.

All three students showed decreased scores in compare-contrast text structure elements after the sequential planning and revising instruction. No prior studies have compared the effects of planning instruction alone and the sequential effects of planning and revising instruction on compare-contrast text structure in struggling writers (including those with SLI). Schnee (2010) found that additive revising instruction seemed to help students reach criterion of including seven story elements compared to receiving planning instruction alone on story writing. However, whether the planning instruction alone or the combined planning and revising instruction had a greater impact on the number of story elements was not clear in that study. One possible explanation for the decreases in text structure elements for the current study might be that with decreased text generation, possibly due to the fact that the students had to save some time at the end for revising, the overall amount of information/ideas included in their essays

actually decreased. This was supported by the results from the component analysis showing that after receiving the revising instruction, all three students demonstrated major decreases in the number of traits, comparisons, and supporting details, which were all idea-related. The supplemental revising instruction didn't seem to contribute to the overall quality for the three students, whose compare-contrast essays showed almost the same quality as after receiving the planning instruction alone. This result was contrary to Schnee's (2010) finding showing that planning plus revising instruction had a larger impact on the quality of the story writing. One possible explanation might be that the three students in this study haven't internalized the taught revising strategy to enable sufficient use of SEARCH to revise and edit during posttest 2, although each student did meet the criteria of being able to apply the SEARCH checklist for revising independently during instruction. When required to plan, compose, and revise a compare-contrast essay within only 40 minutes, all three students with SLI felt overwhelmed and it turned out that the most revisions executed by the three students focused on mechanical errors. Therefore, the overall quality of their essays didn't seem to benefit from the added revising instruction.

Maintenance of the Intervention Effects on Compare-Contrast Writing

All three students received the maintenance test four weeks after the revising instruction ceased. Gains were found to be well maintained for all the compare-contrast process and product measures for the three students. This finding was consistent with previous research studies showing that gains from the writing instruction with the SRSD framework can be well maintained for at least four weeks (Graham, Harris, & Mason, 2005; Harris, Graham, & Mason, 2006; Saddler, 2006; Tracy, Reid, and Graham, 2009; Troia & Graham, 2002). All three students were found to spend some time on planning (average planning time across the three students

increased from 0 minutes to 6.5 minutes compared to the baseline). Kayla generated written plans that included the quality and quantity goals, graphic organizer filled with three key traits and supporting details for reporting similarities and differences; Sarah included graphic organizer with key traits and supporting details, but without writing goals; Ethan included three traits and some supporting details, but without writing goals and the graphic organizer. The average scores for the written plans across all three students increased from 0 during baseline to 3.17 during maintenance. Compared to the baseline, all the students maintained gains in writing length (average increases for writing length across the three students were about 187%), accuracy (average scores for writing accuracy across the three students increased from 57.7% to 77.7%), text structure elements (average scores for text structure elements across the three students increased from 7.5 to 18.7), and overall quality (average scores for text quality across the three students increased from 10 to 16.8) four weeks after the writing instruction ceased. The good maintenance of the gains was expected as the planning and revising instruction within the SRSD framework both targeted the maintenance of the taught strategy skills and the students were constantly reminded to keep using the strategies in the future.

Effects on Writing Self-efficacy

All three students completed the writing self-efficacy scale that examined their self perceived competence in planning, composing and revising an essay in general as well as writing a compare-contrast essay in particular. The total possible score for the scale was 54. The average gains in the writing self-efficacy scores for two of the three students were 5 points from the baseline to the posttest 2. This result confirms previous studies showing that writing instruction within the SRSD framework contribute to enhanced writing self-efficacy (Graham & Harris, 1989a, 1989b; MacArthur & Philippakos, 2010), although some other studies found that

struggling students' writing self-efficacy was not enhanced by the SRSD instruction, in spite of gains in structure elements and quality (e.g., Graham, Harris, & Mason, 2005). The writing instruction might have affected the students' writing self-efficacy through the following two ways. First, when learning the TREE BRANCH strategy during the planning instruction, the students learned to track their progress (in terms of the number of the TREE parts and the number of the traits) in the progress-tracking chart at the end of each lesson. Therefore, the students were able to examine their improvement throughout planning instruction as well as how they could better meet their quality and quantity goals, which possibly contributed to their confidence in writing compare-contrast essays in particular as well as writing expository essays in general. Second, when learning the SEARCH checklist during the revising instruction, the students learned to evaluate and compare the quality of essays prior to and after applying the revising strategy. Therefore, the students potentially understood how the revising instruction could contribute to enhanced essay quality as well as how their own efforts contributed to improved text quality throughout revising instruction.

The third student showed a decrease in writing self-efficacy scores from baseline to posttest 2. This decrease was expected in that this student's baseline self-efficacy score (51 out of 54 points possible) didn't actually match her real writing abilities (as assessed by the Written Expression subtest of *OWLS-II*), indicating possibly an inflated self-perceived competence on writing performance prior to the writing instruction. This mismatch between actual performance and self-perceived writing competence has been documented in prior studies for older primary-grade students with learning disabilities (Graham & Harris, 1989b; Graham, MacArthur, Schwartz, & Page-Voth, 1992; Sawyer, Graham, & Harris, 1992). For example, Graham, MacArthur, Schwartz, Page-Voth (1992) found that two of four fifth-graders overestimated their

abilities on completing writing tasks prior to writing instruction. Their writing self-efficacy

scores showed slight decreases after receiving the instruction, indicating that they were

developing more realistic estimates of their competence in executing writing processes. The

decrease in writing self-efficacy scores for the third student in the current study confirmed prior

findings and suggested that the planning and the revising instruction implemented within the

SRSD framework in this study helped this student develop more realistic self-perceived writing

competence.

Generalization of the Intervention Effects to Explanation Writing

Generalization of Planning Intervention Effects. Positive planning intervention effects

have been found to generalize to writing another uninstructed but related expository text

structure, i.e., explanation essays. Compared to no planning in the baseline, two of the three

students spent time in planning (the average planning time increased from 0 minutes to 6.5

minutes) and generated written plans that included the key ideas to be reported in their

explanation essays prior to composing during posttest 1. The positive effects were also

generalized to essay length (the average length increase across all three students was about

281%), accuracy (the average accuracy across two of the three students increased from 55.9% to

80.1%) and overall quality (the average scores for text quality across all three students increased

from 10.3 in baseline to 15.33 at posttest 1). All three students wrote significantly longer

explanation essays with better quality. These findings were consistent with prior research studies

showing that writing instruction with the SRSD framework could promote generalization to

writing papers of other uninstructed genres (Graham, Harris, & Mason, 2005; Harris, Graham, &

Mason, 2006; Tracy, Reid, & Graham, 2009). For example, Tracy, Reid, and Graham (2009)

taught POW WWW sixty-four third graders the mnemonic POW plus WWW, What = 2, How =

2 to help with planning and writing stories. The students were found to write longer stories with better overall quality. The training effects were also generalized to writing essays of an uninstructed but related genre, personal narratives. In Graham, Harris, and Mason's (2005) study, seventy-three third-grade struggling writers learned the POW plus WWW, What = 2, How = 2 to facilitate story writing as well as POW plus TREE to facilitate persuasive writing within the SRSD framework. The results showed that the students who received SRSD instruction wrote longer stories and persuasive papers with better quality. The intervention effects were also generalized to two other uninstructed genres, personal narrative and informational texts. The finding that the positive gains from the planning instruction generalized to explanation writing is expected in that the planning instruction within the SRSD framework targeted the generalization of the taught strategies, and the instructor and each student engaged in in-depth discussion about when, where, and how to apply the strategies in other tasks. In particular, the explanation and compare-contrast essays have some similarities in that for explanation writing students need to explain certain things in details following a logical order, whereas for compare-contrast writing they need to be able to understand two things/concepts well, identify superordinate categories or traits, and explain similarities and differences in the traits between the two following a logical order. Therefore, it might be relatively easier for the students to generalize the taught strategies for compare-contrast writing to explanation writing. Specifically, when writing explanation essays, what the students might have picked up from the compare-contrast planning strategy instruction could be the following: a) understanding the importance of advance planning; b) listing key ideas and some supporting details on written plans; c) goal setting to write essays with good quality and including a certain number of key ideas with supporting details; and d) writing steps including brainstorming ideas, using self-talk to regulate the writing processes, evaluating

whether ideas meet goals, writing the essay with good organization and powerful vocabulary, challenging themselves to come up with more information, and examining any possible errors. All these aspects that the students learned from the planning instruction on compare-contrast essays could have contributed to writing longer explanation essays with better quality.

Generalization of Sequential Planning and Revising Intervention Effects. Although few studies have examined the potential generalization effects of the sequence of planning then revising instruction to a different genre, the results from this study showed that after further receiving the revising instruction, all three students spent some time in advanced planning (the average planning time across the three students was 5 minutes), wrote longer texts (the average length increase across two of the three students was about 9.4%), with increased accuracy (the average accuracy across all three students increased from 75.6% to 81.4%) and better quality (the average scores of text quality across all three students increased from 15.3 in posttest 1 to 17.7 in posttest 2) compared to after receiving planning instruction alone. One possible explanation for this expected generalization effects is that although the students learned the SEARCH checklist to help revise their compare-contrast essays during the revising instruction, SEARCH is a general strategy that can be applied to revise and edit a wider range of papers across different genres. When revising and editing the uninstructed explanation essays, the students might have applied SEARCH to address the content, organization, and mechanics errors in their papers. Besides, the SRSD framework also enabled further generalization of the revising strategy to other tasks.

Maintenance of the Generalization Effects. The generalization effects to explanation writing were found to be well maintained for at least four weeks after the revising instruction ceased. The average planning time across all three students was 3.67 minutes during

maintenance compared to no planning during the baseline. The average increase in writing length across the three students was about 118% compared to the baseline. The average writing accuracy across two of the three students increased from 55.9% during baseline to 86.1% during maintenance. The average score for writing quality across all three students increased from 10.3 during baseline to 15.7 during maintenance. These results are expected in that the emphasis on maintenance of the taught planning and revising strategies for compare-contrast writing might positively impact the potential maintenance of the generalization effects to writing explanation essays.

CHAPTER SIX
LIMITATIONS AND IMPLICATIONS

As with any study, this study had several limitations. First, each student with SLI was asked to use TREE BRANCH to plan and compose and the SEARCH checklist to revise a compare-contrast essay within 40 minutes during posttest 2. It was expected that with the supplemental revising instruction, the students' performance would demonstrate further increases compared to after receiving just planning instruction. However, given the fact that SEARCH is a long checklist that takes time to implement to address errors in content, organization, and convention as well as that the students were asked to work through the planning, composing, and revising processes within a limited time period, the students purposefully allocated little time at the end of writing tasks for revising. In future studies, researchers may consider allotting more time for probing to give students ample time to complete all steps of the writing process. In addition, although each student reached the criterion for being able to independently revise using the SEARCH checklist, they still focused their revision efforts mostly on superficial features associated with writing conventions. Future studies may consider giving students with SLI: 1) more substantial time to internalize the taught strategies; 2) more opportunities to practice the taught strategies across different writing tasks; and 3) longer time to plan, compose, and revise compare-contrast essays.

Second, following the SRSD instructional framework, this study included key stages such as activating background knowledge, teacher modeling, and guided practice and independent practice with feedback. However, collaborative practice was not included due to the fact that only three students received the instruction in a one-to-one manner. Previous studies have included peer support in writing instruction (e.g., MacArthur & Philipakkos, 2010) and found that peer support played an important role in facilitating learning of taught writing strategies (e.g,

Harris, Graham, & Mason, 2006). Therefore, future studies may consider incorporating peers into the instruction to further promote students' learning TREE BRANCH to help plan and compose compare-contrast essays as well as using the SEARCH checklist to revise their papers.

Third, the current study included only three students (acceptable for a multiple probes, multiple baseline across participants experimental design) to explore the efficacy of using TREE BRANCH alone and with the addition of the SEARCH revising and editing checklist for students with SLI. Future research should include replication of these findings with group experimental designs to bolster the generalizability of the outcomes reported here. In addition, future research could employ different planning and revising strategies to examine differentiated intervention effects of planning versus revising instruction on the writing performance of students with writing difficulties.

Fourth, in this study the participants were first taught TREE BRANCH to help with planning and composing compare-contrast essays, followed by SEARCH to facilitate revising and editing of papers. The nature of the multiple probes, multiple baseline across participants design enabled an examination of the relative impact of planning instruction versus sequential planning and revising instruction, but not a direct comparison between planning versus revising instruction. Future studies may consider adopting a different research design that makes it possible to directly compare the independent and combined effects of planning and revising instruction, given the consideration that some students might benefit more from one or both areas of instruction.

Fifth, the generalization effects of the planning and revising instruction was only examined for explanation essays, a related expository text structure. Future research might consider investigating to what extent writing strategies instruction using TREE BRANCH and

SEARCH impacts performance in other less related expository genres (e.g., problem-solution, cause-effect).

Compare-contrast writing has been playing an important role in students' schooling. The results from the current study suggested that TREE BRANCH can help students with SLI to effective plan and compose compare-contrast essays and SEARCH checklist also seemed to contribute to more revisions. Therefore, teachers may consider integrating into their lessons the planning and revising instruction described here on a regular basis and make sure that the instruction is tailored to meet the unique needs of each struggling writer. For example, for students with receptive and/or expressive language disorders, it is important that the writing instruction language is easy to understand and complex, abstract, and/or low frequency words be avoided or pre-taught. These students likely need to be given substantial time to learn to the mastery criteria established for instruction as well as more time to practice the taught strategies across different tasks and settings. For those who experience difficulties with planning, teachers may focus majorly on teaching students to brainstorm and organize ideas prior to composing; for those who experience difficulties in revising at content and/or organizational levels, teachers may consider focusing more on the steps of the SEARCH checklist that target macrostructural elements that will alter meaning; for those who experience difficulties particularly in writing conventions, teachers may use the SEARCH checklist to help them learn to address the spelling, punctuation, and capitalization errors. In addition, to further boost the writing motivation for struggling students, teachers may consider selecting writing topics that are of personal interest to the students to better engage them in the writing instruction.

It's worth noting that writing instruction also likely placed heavy demands on the students' language abilities. The students had to generate superordinate categories when

comparing and contrasting two subjects/concepts. This, as documented by prior studies (e.g., Englert & Thomas, 1987; Meyer & Freedle, 1984) is relatively more difficult compared to describing only similarities and differences and could be particularly challenging for students with SLI who experience substantial difficulties with many aspects of language. The writing instruction in the current study also encouraged the students to use powerful (i.e., precise and impactful) vocabulary and transition words in their essays, which often is challenging for students with SLI. Therefore, when teaching students with SLI to plan and compose using strategy instruction, teachers should consider incorporating vocabulary instruction and support at the same time to reduce conceptual demands for these students. Such instruction and support might include repeated exposure to complicated/new words (Fukkink, Blok, & de Glopper, 2001). For example, when teaching the transition phrase "in contrast," it is recommended that this phrase be presented to students with SLI multiple times in varied contexts. Support might include scaffolds such as picture cues and visual organizers (Steele & Mills, 2011). For instance, teachers could present pictures showing a dinosaur versus a bird to demonstrate the contrasting feature of size between the two and thus help with understanding of the meaning of "in contrast." Finally, providing student-friendly definitions of key words and generating examples and non-examples to promote in-depth understanding of the words may help bridge the language difficulties students with SLI experience during writing strategy instruction (Stahl & Nagy, 2006). For example, teachers might read and discuss with students expository texts that effectively and not so effectively use key vocabulary.

APPENDICES

Appendix A. Text Structure Elements for Scoring Compare/Contrast Essay

Scoring Text Structure Elements for Compare-Contrast Essays

This scoring procedure awards points to each relevant text structure element based on whether the element is included:

0 – not included; 1 – partially included; 2 – fully presented

_____ Introduction: Simple but clear statement that X and Y are being compared.
_____ Hook: Simple attempt to interest the reader in the paper; Tell the reader why X and Y are compared.
_____ Comparison: Relevant comparison between X and Y. It is not sufficient to simply state a fact about X or Y. The comparison can be made in several ways:
   (a) Direct statement that X and Y are the same or different on something (e.g., Bats and birds both fly.)
   (b) Contrasting statements about X and Y that are adjacent (e.g., Bats are mammals. Birds are birds.) or in a clear parallel structure (adjacent paragraphs with contrasting statements in the same order).
   (c) Subordinated to a superordinate category/trait (e.g., Sharks and dolphins both live in the ocean. They have fins. They are streamlined. They eat fish. [Three comparisons]).
_____Trait: Trait around which X and Y are compared or contrasted. Trait refers to the superordinate category (e.g., Bats and birds are different types of animals.) Each trait is awarded points based on its presence.
_____ Detail: Information that provides relevant detail to elaborate on a scored comparison. Each detail is awarded points based on its presence.
_____ Summary: Summarize all the traits presented in the paper.
_____ Conclusion: Simple statement that the reader should learn about similarities and differences for X and Y at the end.
_____ Transitions: Transition words serve specifically to connect ideas and show their relationship (e.g., first, second, finally, in addition, on the other hand, however, another).
(0 point) – No transition words are used in the paper.
(1 points) – Uses some transition words but does not meet the criteria for 2 points.
(2 points) – Uses transition words systematically for most of the paper, considering all topic sentences or comparison statements and the conclusion.

(Adapted from MacArthur & Philippakos, 2010)

Appendix B. Writing Self-Efficacy Rating Scale

Writing Self-Efficacy Rating Scale

Your Name: _____   Your Grade: _____

Your Teacher's Name: _____   Your School: _____

Circle Your Gender: Male   Female

Circle Your Race/Ethnicity: Black   Asian   White   Native American   Hispanic   Other

Please respond to each statement under each writing assignment that is described by circling the number that matches how well you agree or disagree with the statement. There are no right or wrong answers and it is important to **be as honest as possible**. *Your teacher will not use your answers to grade you. If you need help reading an item, just ask your teacher.* **Please respond to every statement**.

Your teacher asks you to write a feature article about something at which you are an expert, like a sport, hobby, person, or place, although you will need to do some additional research for your article. Your article will be published in a class newspaper to be circulated throughout the school. You will want to write an informative article that will help others learn about your topic. Now, respond to the statements below about this assignment…

1. My article would be well organized—the ideas would be in order and go together.

0	1	2	3	4	5	6
Totally	Mostly	Disagree	Don't Agree	Agree	Mostly	Totally
Disagree	Disagree	A Little	or Disagree	A Little	Agree	Agree

2. I would not be able to find mistakes and confusing or weak spots in my article and change them to improve my work.

0	1	2	3	4	5	6
Totally	Mostly	Disagree	Don't Agree	Agree	Mostly	Totally
Disagree	Disagree	A Little	or Disagree	A Little	Agree	Agree

3. I would be able to come up with great ideas and include lots of details for this article.

0	1	2	3	4	5	6
Totally	Mostly	Disagree	Don't Agree	Agree	Mostly	Totally
Disagree	Disagree	A Little	or Disagree	A Little	Agree	Agree

4. I believe I could write an informative article that would help others learn about my topic...

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

5. I would not be able to include precise and interesting vocabulary words in my article.

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

6. I would be able to use correct spelling, punctuation, and capitalization in my article.

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

7. My sentences in this article would show I can express my ideas clearly and use language in a variety of ways.

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

8. I can write a good compare-contrast essay.

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

9. I can write a good informative article.

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

(Adapted from Troia et al., unpublished data)

Appendix C. Lesson Plans (Planning & Revising Strategy Instruction)

Planning Strategy Instruction Lesson Plan # 1

Objectives: 1. Introduction to Compare Contrast Writing and The Strategy

Materials: 1. Mnemonic aids (TREE, BRANCH)
          2. Sample compare-contrast essays
          3. Transition word list
          4. Papers and pencils
          5. Audio-recorder

---

1. Background information

____"In the next couple of weeks, I'm going to teach you a strategy for writing better compare-contrast essays. The first step is to learn what a compare-contrast essay is. Do you know what a compare-contrast is?"

____The teacher waits for student's responses, discusses the answers and continues: "A compare-contrast essay explains how two things are the same and different. Compare means to tell how two things are the same, and contrast means to tell how two things are different. Therefore, a compare-contrast paper is a paper, which tells how two things are the same and different."

2. Purpose of learning the strategy

____"Let's talk about why it is important to learn how to write compare-contrast essays. Why do people write compare-contrast papers? When might you write a compare-contrast paper?" If needed, probe with additional questions: Did you ever write a compare-contrast paper? Can you think of times you might compare things?

____The teacher listens to her student's responses and comments on them. The key purposes of compare-contrast to be drawn out of the discussion and highlighted in the teacher' own examples are: (a) to learn about two things by comparing them; (b) to help us make good decisions such as what to buy, which class to take, where to go for a trip, etc. based on comparisons.

____"Compare-contrast papers are used in school to help students learn about things by comparing them. For example, when you read a book, the teacher might ask you to write a compare-contrast paper comparing two of the book's characters. By writing this essay, you will think about the two characters – their personality, behavior, and so forth. And it will help you understand the characters better and why they did what they did.

In science class you might be asked to compare and contrast two groups of animals, for example, mammals and reptiles. By comparing and contrasting them, you will learn what makes

each kind of animal special. For example, mammals are warm-blooded and reptiles are cold blooded.

In Social Studies you might be asked to compare how life conditions are today and how they were in the time of pilgrims. This will help you understand and remember better how the Pilgrims lived and what they were like."

____"So one reason to compare and contrast is to understand things by understanding how they are the same and different."

3. Connecting the purpose with everyday situations

____"As you see knowing this compare-contrast strategy will be useful for you at school. However, if you think of it we might use this compare-contrast strategy in everyday situations."

____"Let me give you an example: I would like to buy a new storybook. There were two books that I was considering to choose between. In order to decide which book to buy, I compared and contrasted them and try to find out how they are the same and different. I will compare them on a lot of different categories. What are some categories that you might use to compare two books?"

Listen to students' responses and fill in more as needed. "Right, we might compare them on appeal of illustrations, review or summaries, price...." Comparing and contrasting them helped us to make a decision of which storybook to get. If we haven't done that, I might not have gotten the storybook that I wanted!"

____"Do you think of similar experiences, where you or someone could use compare and Contrast in everyday situations?"

The teacher waits for student responses and concludes by pointing out the utility of Compare and Contrast knowledge in everyday life. Other examples if the students can't think of any: comparing and contrasting two people running for class president; comparing and contrasting two places you might go for vacation.

____"Comparing and contrasting things can help us to learn more about the things we compare. Sometimes we can use what we learn to make decisions. You can see that learning about comparing and contrasting is important."

____"How do we write a good compare-contrast essay in general? It's just like how we compare and contrast two things in our daily life. The key is to come up with important characteristics or traits on which similarities and differences for the two things can be compared and contrasted. "Compare" means to find similarities, and "contrast" means to tell differences. Remember that we will always want to figure out key characteristics or traits and report important similarities and differences. And these will be important parts of a compare-contrast essay."

4. Compare-contrast structure: Example of good essay

____ "Next we are going to learn how to organize a compare-contrast paper. When you compare and contrast things, it is very important to be organized so you can see exactly how two things are the same and different. And when we write a paper, it has to be organized so other people can understand what we are saying. We are going to look at a compare-contrast paper that is very well organized. It will be a good example to see how to organize a paper."

____ "A compare-contrast paper has an introduction, several body paragraphs that report similarities and differences with details, and a conclusion."

____ "These parts are listed on this chart and spell the word TREE; if you think of this word and what each letter represents, you will be able to remember the parts of a good compare-contrast essay."

Tell What You Are Comparing and Why

____ "A compare-contrast paper has an introduction, which tells the topic of the paper. The introduction should tell what is being compared to what and why, and at the same time it should "hook" my reader, grab his/her attention. So, the introduction needs to do these things: 1. Hook the reader and keep him/her engaged and interested and 2. Tell what is being compared to what and why."

____ "I'm going to read the introduction to this paper. Listen to see if it hooks the reader and tells what two things are being compared and the reason for the comparison." The teacher reads the title and introduction of the "Dinosaurs/Birds" paper.

____ "Does the introduction tell what two things are being compared?" [Yes]

____ "Does it hook the reader? How?" [Yes, it says "they ruled the earth", and raises an interesting question.]

____ "Why did the author write this paper?" [To understand how dinosaurs and birds are similar to see if it makes sense that birds evolved from dinosaurs.]

Report Important Similarities and Differences

____ "After the introduction, a compare-contrast paper has one or more body paragraphs. Each body paragraph tells one important trait. Therefore, we need to come up with several key traits so that we can further talk about either similarities or differences around these traits for the two things we are comparing and contrasting."

____ "What traits did he come up with? He reported three traits. Let's look at the first trait. He reported that birds and dinosaurs are similar in how they raise their young. What's the second trait? He reported that birds and dinosaurs are different in how they look like."

____"Remember, we need to always come up with important traits about the two things we compare and contrast so we can talk more by adding details."

Elaborate on Each Point

____"Now we have reported the key traits for birds and dinosaurs, we need to provide relevant details to elaborate on similarities and differences for each trait."

____"Let's see how he elaborated on the first trait of "raise their young" by talking about similarities of birds and dinosaurs on this trait. He said that both birds and dinosaurs lay eggs in nests. He said that both care for their young by bringing them food when they hatch. He also added that both birds and dinosaurs protect their young from other animals that might eat them."

____"We can see that he elaborated on the first trait and the elaborated details let us better understand how birds and dinosaurs are similar for raising their young."

____"Now let's move to the next paragraph." The teacher reads the paragraph to the students.

____Repeat for the remaining body paragraphs.

End with What the Reader Should Learn

____"The last paragraph is the conclusion. In the conclusion, the writer summarizes the ideas in the paper to help the reader remember what was most important."

____"Let's read the conclusion to see if it mentions the important points of what the readers should know, and if it has transition words." Teacher reads the conclusion.

____"Did the author use transition words?" [yes] "What do those words, 'in conclusion' tell the reader?" [That the paper is done and a summary is coming.]

____"Do you think that the writer ended his paper successfully? Did he mention the most important things without repeating everything?" [Student response. Note: Students may point out that none of the actual differences or similarities are mentioned. But she did summarize the purpose of the paper.] "Yes, he did a good job, as he did not write a lot, he just restated in a way what he had said in his introduction and he also used a key word to show to the reader that he had reached the end of the paper."

5. Compare-contrast structure: Bad example

____"Now, let's read a compare-contrast paper which is not as well organized." The teacher or the student reads the whole paper aloud.

____"His paper is on Restaurants. He was asked to choose two restaurants that he knows and compare and contrast them. Let's see whether he tells what he was comparing and why. What are the questions about this part?" [Student answers.]

_____Teacher and student evaluate the Introduction.

"So, he does say that he will compare two restaurants the Peace of Pizza and the Grotto's. He says that they both sell pizza, but they make different kinds of pizza. So, the student does say what is being compared.

Does this part "hook" the reader and make him interested in reading the rest of the paper? No, he does not."

_____"How do you think that he could have begun his paper to make the reader interested?" Discuss student answers.

_____"Let's see how he reported the similarities and differences and whether he elaborated on each point. Let's start with the first trait." The teacher reads the first body paragraph. "What are the questions about this part? [Student answers.]

_____"Does the topic sentence tell an important characteristics or trait on which the two things are the same or different? [No] No, he does not; instead he talks about one of the restaurants."

_____"Does he have interesting and relevant details? [Student answers.] He does have details. However, they don't compare the two restaurants.

_____Repeat for next paragraph.

_____"What about his conclusion? Does he end with what readers should learn from this topic? No, he does not. What he does is stating his opinion. However, this was not an opinion essay, but rather a compare-contrast essay."

_____"What do you think that this student should improve on his next writing?" Main point is that the paragraphs don't come up with important traits and don't report similarities and differences either.

6. Evaluating baseline performance

_____The teacher gives each student a compare-contrast essay he/she wrote during the baseline. The teacher asks him/her to read the essay aloud and see which parts his/her essay contains and which parts are missing based on the four key parts of a good compare-contrast essay as represented by TREE.

_____The teacher also asks the student to record on the progress-tracking sheet how many traits he or she included in the essays they wrote during baseline.

Planning Strategy Instruction Lesson Plan # 2

Objectives: 1. Model use of TREE BRANCH strategy (use #1 planning sheet)

Materials: 1. Mnemonic aids (TREE, BRANCH)
          2. Compare-contrast essay prompt
          3. Transition word list
          4. Papers and pencils
          5. Audio-recorder

---

1. Review of the previous lesson

____"Do you remember what we discussed in our last lesson?"

____"We learned what a compare-contrast paper is and how it is organized. We also practiced evaluating compare-contrast papers. What is a compare-contrast paper? [SA]

____"What do you remember about how it is organized?" [SA] "Good, we'll go over all the parts again today."

____"Is it important to learn how to write compare-contrast papers? Why do you think that such a knowledge might be helpful in school and in your life?" [Student responds]
[The student's responses to the three questions should include the key points so as to continue this lesson]

"Compare-contrast papers are used in school to help students learn about things by comparing them. For example, when you read a book, the teacher might ask you to write a paper comparing two of the book's characters. By writing this essay, you will think about the two characters – their personality, behavior, and so forth. And it will help you understand the characters better and why they did what they did.

In science class you might be asked to compare and contrast two groups of animals, for example, mammals and reptiles. By comparing and contrasting them, you will learn what makes each kind of animal special. For example, mammals are warm-blooded and reptiles are cold blooded.

There are occasions you might be asked to compare and contrast two of your best friends. You will think of how they are similar in some ways, for example, they both are so nice; and different in other ways, for example, Julie likes to read poems and Katie likes to play video games.

Another example is, you might be asked to compare and contrast Monday and Friday. You may think of that they are similar in the fact that they are both school days. So you go to school on both Mondays and Fridays. They are also different and you may have different feelings for Monday and Friday. You might feel that Monday means the start of a whole week whereas Friday means the start of weekend break."

____"So one reason to compare and contrast is to understand things by understanding the key traits so we can talk about how things are the same or different on these traits."

____"Moreover, comparing and contrasting things can help us to learn more about the things we compare. Sometimes we can use what we learn to make decisions. Remember last time we talked about how compare and contrast could help us decide which storybook to buy, which place to go for a fun trip? You can see that learning about comparing and contrasting is important, and it can help us make a good decision in daily life."

2. Introducing Mnemonic Aid & Model Using TREE BRANCH to Plan and Write

____"Today we will learn about a strategy for planning and writing compare contrast papers."

____"There are two ways to organize your ideas for your compare-contrast papers using the TREE BRANCH. I'll show you how to use the #1 planning sheet that will report all similarities followed by the differences for the comparing and contrasting for this lesson. Then we'll learn to use the #2 planning sheet that will report similarities and differences around each trait during the next lesson."

____"To show you the strategy, I will 'think aloud.' That means that I'll say what I am thinking. By thinking aloud I can show you how I am using this strategy."

____"This strategy has six steps, listed on this chart and spell the word BRANCH; if you think of this word and what each letter represents, you will be able to plan and write good compare-contrast essays." The teacher shows student the chart of the "BRANCH = Brainstorm Idea Words, Recite Self-Talk, Ask if Ideas Will Meet Goals, Now Write with Good Organization, Powerful Words, and Accurate Information, Challenge Myself to Come Up with More Ideas, Have A Look for Mistakes."

____"We will start with **Brainstorming Idea Words** before writing. What we do is to write down everything we know on our topic. It is a storm of thoughts and knowledge happening in our brain: that is why we call it brainstorm."

____"So, I am a student and my teacher asked me to write a compare-contrast paper on XXX and XXX." [The specific topic will be determined together with the student.]

____"Let's see, how am I supposed to start? First, I have to brainstorm. That means I need to think and write everything I know on this topic." While brainstorming the teacher will write everything she and the student know about the topic.

____The teacher also models how to generate traits. The teacher reminds that at least three traits need to be generated.

____The teacher writes down on the planning sheet the traits and the details that supports the trait, for both similarities and differences.

_____"Do you notice how I recorded my ideas on the planning sheet? Did I write a lot on this sheet?" [Student Responds.] "Yes, I only wrote single words or short phrases to record my ideas here. I'd like to use these ideas as reminders only."

_____"Next, we **Recite Self-Talk** on the planning sheet. So, what is self-talk? Self-talk is what we talk to ourselves during writing. Why do we need self-talk when writing? Because sometimes we may find some parts of writing very tough, and self-talk can help us get through these tough parts."

_____"For example, when I find some parts of writing really difficult and I do not feel like I can do this, I can ask myself: Am I trying best to keep working hard? By talking to ourselves, we are encouraging ourselves to keep working hard and getting through the difficult parts of the writing."

_____"For example, I am looking at my compare-contrast essay and I can ask myself: OK. Are these the most important things to be comparing? These are things that good writers tell themselves while writing to keep them coming up with important traits to report similarities and differences."

_____"I can also complement myself by saying "Great job!!" when I have finished my writing and I am happy with my work. These are self-statements that I used to encourage myself."

_____"What self-statements you can think of that you will use while writing?" The teacher writes down self-statements on the planning sheet. "Remember, you will want to use them while writing, because this will help you be focused and also help you express your feelings about a situation you are in. By doing that you will be able to find a way to a solution."

_____"Also, you will practice saying your self-talk aloud when writing and I will be listening for you. I will show you how to do this in a few minutes, so make sure you pay attention to how I talk to myself during writing."

_____"After we have developed self-talk that works for us, we look at the ideas we came up with and set our goals. Let's set our writing goals by asking two questions: What is my quality goal for this compare-contrast essay? I need to set my quality goal as including all the parts of TREE to write a good compare-contrast essay. What is my quantity goal for this essay? I need to set my quantity goal as including at least three important traits around which we do the comparisons. And I will write one body paragraph for each trait." The teacher writes down quality and quantity goals on the planning sheet.

_____"Next, since I have generated some ideas about XXX and XXX, I will examine these ideas carefully and **Ask if Ideas Will Meet Goals."** The teacher models setting the quality goal to be "including four parts of the TREE" and the quantity goal to be "including at least three important traits" and writes them down on the planning sheet.

_____"Do I have enough ideas to make sure I will report at least three important traits about the XXX and XXX? Do I need to generate more ideas so that I also will have enough details for each of these traits? Will these ideas possibly help me write a good compare-contrast essay?"

_____"Next step, **Now Write with Good Organization, Powerful Words,** and **Accurate Information**. I will have to place these ideas of mine from the planning sheet to the lined paper. This will help me organize my ideas and have clear comparisons. I will use **TREE** to make sure I include all the important parts of a good compare-contrast essay."

_____The teacher models using TREE to help write an organized paper. "First, **Tell What You Are Comparing and Why.** So I will tell that I am comparing XXX and XXX and explain why I would like to compare them. I will make this as my first paragraph."

_____"Then, I will **Report Important Similarities and Differences**. I will start using the information I brainstormed and wrote down on the planning sheet." The teacher points out each trait should be explicitly stated as the topic sentence for each body paragraph. The organization of the paper reflects the fact that all similarities are reported followed by all the differences.

_____The teacher also models using the self-talk. "Can I think of anything else? Not really. So I can use the self-talk I wrote on my planning sheet and ask myself: Am I trying best to keep working hard? Well, I think I will try harder to come up with a few more ideas. So maybe you can help me a bit. On what else do you think that I can compare XXX and XXX?"

_____"What do I have to do next? I will need to **Elaborate on Each Point.** Now I need to put details to each of the similarities and differences. It's good to have at least 3 body paragraphs that focus on at least three key traits for comparisons."

_____"Now when I am writing, I will make sure to use powerful words and provide accurate information in my essay."

_____"If I don't have enough ideas that I could use to develop similarities and differences or to provide details for each comparison category, I will need to **Challenge Myself to Come Up with More Ideas**. I will ask myself: what ideas can I add? What other aspects that I find XXX and XXX are similar? Different? I will try best to come up with more ideas so I can meet my quality and quantity goals.

_____The teacher models coming up with a couple of more traits and supporting details for reporting similarities and differences.

_____"So, finally, I need to **End with What the Reader Should Learn.** So I need to write my conclusion. Let's see the conclusion should be a summary that tells about the three traits we reported in the texts above and also tell what readers should learn about this topic." The teacher writes down.

_____"Now I have a draft that looks pretty good. Am I done with this paper? Not yet. Let's **Have A Look for Mistakes** and try to see whether there are some mistakes in the essay we can correct

to make it look better. Do I have an introduction paragraph that tells what was compared and why? Do I have three body paragraphs on similarities and differences around traits? Do I have enough details for each comparison category? Do I have any spelling, punctuation, capitalization, and grammar errors? I will make sure to address these problems if there is any."

____The teacher shows the list of key transition words, explains the importance of these words on contributing to the fluency of the paper, and models using appropriate transition words throughout the paper.

3. Evaluating current performance

____The teacher asks the student to read this compare-contrast essay carefully.

____The teacher asks the student to record on the progress-tracking chart how many traits he or she included in this current essay they wrote during baseline.

4. Discussing improvement & Generalizing

____The teacher asks the student to compare the current essay and the baseline essay he or she wrote and evaluated earlier on the compare-contrast essay parts he or she included as well we number of traits he or she identified.

____"Now looking at the essay you wrote earlier and the essay I just wrote using the TREE BRANCH, do you think the strategy can help us write a better compare-contrast essay? Why?"

____"Do you think TREE BRANCH help meeting your quality goal and quantity goal?"

____"If I hadn't used the TREE BRANCH strategy, would I have written as good a compare-contrast essay as you did? Why or why not?"

____"Tell me some other tasks for which you could use this strategy?"

Planning Strategy Instruction Lesson Plan # 3

Objectives: 1. Model use of TREE BRANCH strategy (use #2 planning sheet)

Materials: 1. Mnemonic aids (TREE, BRANCH)
　　　　　2. Compare-contrast essay prompt
　　　　　3. Transition word list
　　　　　4. Papers and pencils
　　　　　5. Audio-recorder

---

1. Review of the previous lesson

____"Do you remember what we discussed in our last lesson?"

____"We learned what a compare-contrast paper is and how it is organized. We also practiced evaluating compare contrast papers. What is a compare-contrast paper? [SA]

____"What do you remember about how it is organized?" [SA] "Good, we'll go over all the parts again today."

____"Is it important to learn how to write compare-contrast papers? Why do you think that such a knowledge might be helpful in school and in your life?" [Student responds.]
[The student's responses to the three questions should include the key points so as to continue this lesson]

2. Introducing Mnemonic Aid & Model Using BRANCH to Plan and Write

____"As we know there are two ways to organize your ideas for your compare-contrast papers using the TREE BRANCH. During the last lesson, I've shown you how to use the #1 planning sheet that will report all similarities followed by the differences for the comparing and contrasting for this lesson. So today we'll learn to use the #2 planning sheet that will report similarities and differences around each trait during the next lesson."

____"To show you the strategy, I will 'think aloud.' That means that I'll say what I am thinking. By thinking aloud I can show you how I am using this strategy."

____"This strategy has six steps, listed on this chart and spell the word BRANCH; if you think of this word and what each letter represents, you will be able to plan and write good compare-contrast essays." The teacher shows students the chart of the "BRANCH = Brainstorm Idea Words, Recite Self-Talk, Ask if Ideas Will Meet Goals, Now Write with Good Organization, Powerful Words, and Accurate Information, Challenge Myself to Come Up with More Ideas, Have A Look for Mistakes".

____"We will start with **Brainstorming Idea Words** before writing. What we do is to write down everything we know on our topic. It is a storm of thoughts and knowledge happening in our brain: that is why we call it brainstorm.**"**

____"So, I am a student and my teacher asked me to write a compare-contrast paper on XXX and XXX." [The specific topic will be determined together with the student.]

____"Let's see, how am I supposed to start? First, I have to brainstorm. That means I need to think and write everything I know on this topic." While brainstorming the teacher will write everything she and the student know about the topic.

____The teacher also models how to generate traits. The teacher reminds that at least three traits need to be generated.

____The teacher wrote down on the planning sheet the traits and the details that supports the trait, for both similarities and differences.

____"Do you notice how I recorded my ideas on the planning sheet? Did I write a lot on this sheet?" [Student Responds] "Yes, I only wrote single words or short phrases to record my ideas here. I'd like to use these ideas as reminders only."

____"Next, we **Recite Self-Talk** on the planning sheet. So, what is self-talk? Self-talk is what we talk to ourselves during writing. Why do we need self-talk when writing? Because sometimes we may find some parts of writing very tough, and self-talk can help us get through these tough parts."

____"For example, when I find some parts of writing really difficult and I do not feel like I can do this, I can ask myself: Am I trying best to keep working hard? By talking to ourselves, we are encouraging ourselves to keep working hard and getting through the difficult parts of the writing."

____"For example, I am looking at my compare-contrast essay and I can ask myself: OK. Are these the most important things to be comparing? These are things that good writers tell themselves while writing to keep them coming up with important traits to report similarities and differences."

____"I can also complement myself by saying "Great job!!" when I have finished my writing and I am happy with my work. These are self-statements that I used to encourage myself."

____"What self-statements you can think of that you will use while writing?" The teacher writes down self-statements on the planning sheet. "Remember you will want to use them while writing, because this will help you be focused and also help you express your feelings about a situation you are in. By doing that you will be able to find a way to a solution."

____"Also, you will practice saying your self-talk aloud when writing and I will be listening for you. I will show you how to do this in a few minutes, so make sure you pay attention to how I talk to myself during writing."

____"After we have developed self-talk that works for us, we look at the ideas we came up with and set our goals. Let's set our writing goals by asking two questions: What is my quality goal for this compare-contrast essay? I need to set my quality goal as including all the parts of TREE to write a good compare-contrast essay. What is my quantity goal for this essay? I need to set my quantity goal as including at least three important traits around which we do the comparisons. And I will write one body paragraph for each trait." The teacher writes down quality and quantity goals on the planning sheet.

____"Next, since I have generated some ideas about XXX and XXX, I will examine these ideas carefully and **Ask if Ideas Will Meet Goals."** The teacher models setting the quality goal to be "including four parts of the TREE" and the quantity goal to be "including at least three important traits" and writes them down on the planning sheet.

____"Do I have enough ideas to make sure I will report at least three important traits about the XXX and XXX? Do I need to generate more ideas so that I also will have enough details for each of these traits? Will these ideas possibly help me write a good compare-contrast essay?"

____"Next step, **Now Write with Good Organization, Powerful Words,** and **Accurate Information**. I will have to place these ideas of mine from the planning sheet to the lined paper. This will help me organize my ideas and have clear comparisons. I will use **TREE** to make sure I include all the important parts of a good compare-contrast essay."

____The teacher models using TREE to help write an organized paper. "First, **Tell What You Are Comparing and Why.** So I will tell that I am comparing XXX and XXX and explain why I would like to compare them. I will make this as my first paragraph."

____"Then, I will **Report Important Similarities and Differences**. I will start using the information I brainstormed and wrote down on the planning sheet." The teacher points out each trait should be explicitly stated as the topic sentence of each body paragraph. The organization of the paper reflects the fact that the similarities and differences are reported around each trait.

____The teacher also models using the self-talk. "Can I think of anything else? Not really. So I can use the self-talk I wrote on my planning sheet and ask myself: Am I trying best to keep working hard? Well, I think I will try harder to come up with a few more ideas. So maybe you can help me a bit. On what else do you think that I can compare XXX and XXX?"

____"What do I have to do next? I will need to **Elaborate on Each Point.** Now I need to put details to each of the similarities and differences. It's good to have at least 3 body paragraphs that focus on at least three key traits for comparisons.

____So "now when I am writing, I will make sure to use powerful words and provide accurate information in my essay."

____"If I don't have enough ideas that I could use to develop similarities and differences or to provide details for each comparison category, I will need to **Challenge Myself to Come Up with More Ideas**. I will ask myself: what ideas can I add? What other aspects that I find XXX and XXX are similar? Different? I will try best to come up with more ideas so I can meet my quality and quantity goals.

____The teacher models coming up with a couple of more traits and supporting details for reporting similarities and differences.

____"So, finally, I need to **End with What the Reader Should Learn.** So I need to write my conclusion. Let's see the conclusion should be a summary that tells about the three traits we reported in the texts above and also tell what readers should learn about this topic." The teacher writes down.

____"Now I have a draft that looks pretty good. Am I done with this paper? Not yet. Let's **Have A Look for Mistakes** and try to see whether there are some mistakes in the essay we can correct to make it look better. Do I have an introduction paragraph that tells what was compared and why? Do I have three body paragraphs on similarities and differences around traits? Do I have enough details for each comparison category? Do I have any spelling, punctuation, capitalization, and grammar errors? I will make sure to address these problems if there is any."

____The teacher shows the list of key transition words, explains the importance of these words on contributing to the fluency of the paper, and models using appropriate transition words throughout the paper.

____In the end, the teacher asks whether student has any preference between the two ways of organizing the compare-contrast paper. Once the student makes a selection, the following lessons will focus on using the student's preferred planning sheet as well as writing that reflects the corresponding organization of traits and supporting ideas.

3. Evaluating current performance

____The teacher asks the student to read this compare-contrast essay carefully.

____The teacher asks the student to record on the progress-tracking chart how many traits he or she included in this current essay they wrote during baseline.

4. Discussing improvement & Generalizing

____The teacher asks the student to compare the current essay and the baseline essay he or she wrote and evaluated earlier on the compare-contrast essay parts he or she included as well as number of traits he or she identified.

____"Now looking at the essay you wrote earlier and the essay I just wrote using the TREE BRANCH, do you think the strategy can help us write a better compare-contrast essay? Why?"

_____"Do you think TREE BRANCH help meeting your quality goal and quantity goal?"

_____"If I hadn't used the TREE BRANCH strategy, would I have written as good a compare-contrast essay as you did? Why or why not?"

_____"Tell me some other tasks for which you could use this strategy?"

Planning Strategy Instruction Lesson Plan # 4

Objectives: 1. Rehearse the mnemonic aid for the strategy
               2. Provide guided practice of the strategy with the students

Materials: 1. Mnemonic aids (TREE, BRANCH)
              2. Compare-contrast essay prompt
              3. Transition word list
              4. Papers and pencils
              5. Audio-recorder

---

1. Rehearsing Mnemonic Aid
____"Do you remember last time I showed you the words representing the four parts of a compare-contrast essay as well as how to write a good compare-contrast essay using the words as a reminder for brainstorming ideas, setting goals, organizing information, and checking possible errors?"

____"If you think of these words and what each letter represents, you will be able to remember all the key parts of a compare-contrast essay as well as the things you have to plan and write a good compare-contrast essay."

____"Now tell me the words and what each letter represents. [Student needs to correctly articulate TREE (which stands for the parts for a good compare-contrast essay) and BRANCH (which stands for the process of writing good compare-contrast essay) and explain what each letter represents.]

____After the student responds, the teacher shows the TREE BRANCH chart and reviews them with the student.

2. Guided practice: Student and teacher producing a paper together
____"Last time you've seen how I used the strategy to write a good compare-contrast essay on XXX and XXX. Today, let's practice using the strategy together. Let's write an essay comparing and contrast XXX and XXX." [The topic of the essay is determined jointly by the teacher and the student.]

____The teacher leads the student through the strategy, asking the student what the next step is and how to do each step. The student comes up with all the ideas and do the writing for the planning. But the teacher can do the writing of the paper to speed up the process.

____"So, lets remember, which are the steps of our strategy? What do we do first? Excellent! We plan. And how exactly do we plan? We brainstorm our ideas. What is next? We write down the self-talk that works for us. I will use the self-talk to guide and encourage my writing. Then what do we do? We set goals and decide whether the ideas meet our goals. What about next? We write with good organization, and make sure we use powerful words and provide accurate information in our paper. What if we don't have enough ideas? We challenge ourselves and think of more

ideas that we can use. What's the last step? We look back our essay and see if there are any errors and whether they look good."

____"So, let's begin with the first step which is to Brainstorm Idea Words. Do you think that you can draw on your own this step? Yes, it is easy. What is our topic? What do we know about our topic? Let's brainstorm!" "What are you comparing to what? Which things are similar for both topics? What are your traits?" (Which things are different for both topics?)

____Student comes up with ideas (traits and details) and writes them down on their planning sheets with teacher guidance.

____"What is the next? We need to Recite Self-Talks. What do we say to ourselves when we are not sure what to do next? What do we say to encourage ourselves if this seems difficult? What do we say to ourselves when we write a good essay?" The teacher guides student to write down his or her self-talks and provide help if needed.

____"Then we Ask if Ideas Will Meet Goals. Let's set our quality goal and quantity goal for our essay first". The teacher guides the student to write down his or her goals on the planning sheet.

____"What do we do next? Now Write with Good Organization, Powerful Words, and Accurate Information. How do we do that? We write using the TREE. We also said that we should use self-talks to help us stay focus and be confident. Great! What is the first thing we should do in our TREE strategy? Tell what we are comparing and why. What shall I have here? How can I begin? What else shall I do? Write what I am comparing to what and explain why. Excellent!"

____Write Introduction. Teacher takes dictation.

____"What comes next? Report the important similarities and differences! What shall I have here? I should have an interesting topic sentence that explicitly tells about the trait. How shall I begin my sentence? We always begin with a transition word. Which one shall we use? Let's look at the transition word list. What else I should do? I should use the information in the planning sheet and write sentences with powerful words and relevant details that are accurate. Don't forget our statements!"

____Write Body Paragraphs, one at a time. The teacher emphasizes the importance to write down the trait in the topic sentence for each of the body paragraphs.

____"Now, let's see whether we have enough ideas. We need to Challenge Myself to Come Up with More Ideas. What else can I add to my essay so I can have more information for this comparison?"

____"What is last? End with What the Reader Should Learn. What should I have here? I should sum up the three traits I've talked about in my paper. I should tell the readers what they should learn from this topic. Let's see how we can do that."

____"Did we finish? What is left to do? We need to Have A Look for Mistakes. How do we do that? We examine our essay and check whether it follows a good compare-contrast structure, whether it meets our quality goal to include four parts of the TREE and quantity goal to include at least three important traits, whether it has any spelling, punctuation, capitalization, and grammar errors. Excellent! Let's have a look of our essay."

____"Also, did I use good transition words throughout paper?"

3. Evaluating current performance

____"Now, let's evaluate the essay we wrote together using the TREE BRANCH."

____The teacher asks the student to read the essay they wrote together and see which parts the essay contains and which parts are missing based on the four key parts of a good compare-contrast essay as represented by TREE.

____The teacher also asks the student to record on the progress-tracking chart how many traits he or she included in the essays.

4. Discussing improvement & Generalizing

____The teacher asks the student to compare the current essay and the baseline essay he or she wrote and evaluated earlier on the compare-contrast essay parts he or she included as well as number of traits he or she identified.

____"Now looking at the essay you wrote earlier and the essay we wrote together using the TREE BRANCH, do you think the strategy can help us write a better compare-contrast essay? Why?"

____"Do you think TREE BRANCH help meeting your quality goal and quantity goal?"

____"If you hadn't used the TREE BRANCH strategy, would you have written as good a compare-contrast essay as you did? Why or why not?"

____"Tell me some other tasks for which you could use this strategy?"

Planning Strategy Instruction Lesson Plan # 5

Objectives: 1. Rehearse the mnemonic aid for the strategy
              2. Make sure student memorizes the mnemonics, planning sheet, and transition
              words to criteria

Materials: 1. Mnemonic aids (TREE, BRANCH)
             2. Transition word list
             3. Papers and pencils
             4. Audio-recorder

---

1. Rehearsing Mnemonic Aid

_____"Do you remember last time I showed you the words representing the four parts of a compare-contrast essay as well as how to write a good compare-contrast essay using the words as a reminder for brainstorming ideas, setting goals, organizing information, and check possible errors?"

_____"If you think of these words and what each letter represents, you will be able to remember all the key parts of a compare-contrast essay as well as the things you have to plan and write a good compare-contrast essay."

_____"Now tell me the words and what each letter represents." [Student needs to correctly articulate TREE (which stands for the parts for a good compare-contrast essay) and BRANCH (which stands for the process of writing good compare-contrast essay) and explain what each letter represents.]

_____After the student responds, the teacher shows the TREE BRANCH chart and review them with the student.

_____The student was asked to fully memorize the TREE BRANCH mnemonic and the planning sheet (goals, graphic organizer, self-talk). [Note: "fully" is defined as 100% correct.] The student also needs to memorize the transition word list: at least three transition words from the "Similarities," at least three from the "Differences," and at least one from the "Conclusion."

_____At the end of the lesson, the teacher examines the student's memorization of the TREE BRANCH mnemonic and the planning sheet as well as transition word list to the criteria before starting the next lesson of the independent practice.

Planning Strategy Instruction Lesson Plan # 6

Objectives: 1. Rehearse the mnemonic aid for the strategy
             2. Independent practice of the strategy

Materials: 1. Mnemonic aids (TREE, BRANCH)
            2. Compare-Contrast Essay Prompt
            3. Transition word list
            4. Papers and pencils
            5. Audio-recorder

---

1. Rehearsing Mnemonic Aid

____"Do you remember last time I showed you the words representing the four parts of a compare-contrast essay as well as how to write a good compare-contrast essay using the words as a reminder for brainstorming ideas, setting goals, organizing information, and check possible errors?"

____"If you think of these words and what each letter represents, you will be able to remember all the key parts of a compare-contrast essay as well as the things you have to plan and write a good compare-contrast essay."

____"Now tell me the words and what each letter represents." [Student needs to correctly articulate TREE (which stands for the parts for a good compare-contrast essay) and BRANCH (which stands for the process of writing good compare-contrast essay) and explain what each letter represents.]

____After the student responds, the teacher shows the TREE BRANCH chart and review them with the student.

____"This time, let's use this strategy to write a compare-contrast essay on our own."

2. Student practicing using the strategy independently
____The student selects a compare-contrast writing prompt and uses the strategy without assistance.

____The student writes a compare-contrast essay about the prompt.

____The teacher asks the student to read his or her essay aloud.

3. *Evaluating current performance*

____"Now, let's evaluate the essay you just wrote all by yourself using the TREE BRANCH."

____The teacher asks the student to read the essay he or she wrote and see which parts the essay contains and which parts are missing based on the four key parts of a good compare-contrast essay as represented by TREE.

____The teacher also asks the student to record on the progress-tracking chart how many traits he or she included in the essay.

4. Discussing improvement & Generalizing

____The teacher asks the student to compare the current essay and the baseline essay he or she wrote and evaluated earlier on the compare-contrast essay parts he or she included as well as number of traits he or she identified.

____"Now looking at the essay you wrote earlier and the essay you wrote all by yourself using the TREE BRANCH, do you think the strategy can help us write a better compare-contrast essay? Why?"

____"Do you think TREE BRANCH help meeting your quality goal and quantity goal?"

____"If you hadn't used the TREE BRANCH strategy, would you have written as good a compare-contrast essay as you did? Why or why not?"

____"Tell me some other tasks for which you could use this strategy."

Planning Strategy Instruction Lesson Plan # 7

Objectives: 1. Independent practice of the strategy
2. Weaning the student off the mnemonic aid, the planning sheet, and the transition word list

Materials: 1. Compare-Contrast Essay Prompt
2. Papers and pencils
3. Audio-recorder

---

1. Rehearsing Mnemonic Aid

____"Do you remember last time I showed you the words representing the four parts of a compare-contrast essay as well as how to write a good compare-contrast essay using the words as a reminder for brainstorming ideas, setting goals, organizing information, and check possible errors?"

____"If you think of these words and what each letter represents, you will be able to remember all the key parts of a compare-contrast essay as well as the things you have to plan and write a good compare-contrast essay."

____"Now tell me the words and what each letter represents." [Student needs to correctly articulate TREE (which stands for the parts for a good compare-contrast essay) and BRANCH (which stands for the process of writing good compare-contrast essay) and explain what each letter represents.]

____After the student responds, the teacher shows the TREE BRANCH chart and reviews them with the student.

2. Weaning off the strategy chart and planning sheet

____The teacher explains to the student that they won't usually have a TREE BRANCH mnemonic chart, a planning sheet, and the transition word list with them when they need to write compare-contrast essays. So they can write down the mnemonic at the top of a blank sheet. The teacher reminds the student to make a space on the paper for notes for each part of TREE BRANCH.

____The teacher reminds the student to check off each step of TREE BRANCH on the sheet when he or she has completed that step.

____The teacher tells the student that he or she can develop his or her own planning sheet by writing down the quality and quantity goals, traits, supporting details, and self-talk. "You may also write down transition words that you can use in your essay."

____The student selects a topic and writes a compare-contrast paper on the topic. The student should write down TREE BRANCH on the blank paper, as well as develop the planning sheet that includes goals, traits, details for similarities and differences, and self-talk, and includes transition words in his or her paper.

3. Evaluating current performance

____"Now, let's evaluate the essay you just wrote all by yourself using the TREE BRANCH."

____The teacher asks the student to read the essay he or she wrote and see which parts the essay contains and which parts are missing based on the four key parts of a good compare-contrast essay as represented by TREE.

____The teacher also asks the student to record on the progress-tracking chart how many traits he or she included in the essay.

4. Discussing improvement & Generalizing & Wrap-up

____The teacher asks the student to compare the current essay and the baseline essay he or she wrote and evaluated earlier on the compare-contrast essay parts he or she included as well as number of traits he or she identified.

____"Now looking at the essay you wrote earlier and the essay you wrote all by yourself using the TREE BRANCH, do you think the strategy can help us write a better compare-contrast essay? Why?"

____"Do you think TREE BRANCH help meet your quality goal and quantity goal?"

____"If you hadn't used the TREE BRANCH strategy, would you have written as good a compare-contrast essay as you did? Why or why not?"

____"Tell me some other tasks for which you could use this strategy."

____"I really have enjoyed working with you these past few weeks. Your goal now is to keep using the TREE BRANCH strategy whenever it can help you do something well, like when you write, etc."

Revising Strategy Instruction Lesson Plan # 1

Objectives: 1. Introduction to revising and the strategy

Materials: 1. SEARCH Checklist
              2. Sample compare-contrast essays
              3. Compare-contrast essay evaluation scale
              4. Papers and pencils
              5. Audio-recorder

---

1. Introducing the lesson & Discussing purpose for learning the strategy

____"During the past couple of weeks, we have learned TREE BRANCH to help us plan and write a good compare-contrast essay. You have done a great job! Now, we are going to learn another strategy for revising our essay to make it look better. The first step is to think about what is revising." [Student responds] The teacher then discusses the student's answers.

____"Let's talk about why it is important to learn how to revise an essay. Why do people revise their papers? When might you revise a paper?" If needed, probe with additional questions: Did you ever revise a paper? Can you think of times you might need to revise your paper?

____The teacher listens to her student's responses and comments on them. The key purposes of revising to be drawn out of the discussion and highlighted in the teacher's own examples are the following:

- Revising leads to good writing, which can help students to earn better grades.
- A first draft will get the student's ideas down on paper, but the essay is usually not yet finished.
- Readers sometimes have a hard time understanding what is written unless writers go back to fix their ideas.
- Good writers revise their work.
- Good writers revise at substantial level. They evaluate writing goals, revise content and organization, and address any mechanical errors.

2. Describing the SEARCH strategy

____"Today, we are going to learn a strategy, or a checklist that will help you make better revising decisions. The strategy is called SEARCH."

____The teacher gives the student a SEARCH checklist.

____"SEARCH stands for *Set goals, Examine paper to see if it makes sense, Ask if you said what you meant, Reveal picky errors, Copy over neatly, and Have a last look for errors*".

____The teacher explains each step of SEARCH to the student.

3. Reviewing self-statement

____"Do you remember we developed and used self-talk to help us work through the writing? It worked pretty well, right? Let's review it now. What is self-talk and why do we need self-talk when writing?" [The teacher waits for student response and discuss the answers.]

____"We will come up with self-talks that help with our revising, too."

____"For example, when I find some parts of revising really difficult and I do not feel like I can do this, I can ask myself: Am I trying best to keep working hard? By talking to ourselves, we are encouraging ourselves to keep working hard and getting through the difficult parts of the revising."

____ "For example, I am checking and revising my essay and I can ask myself: OK. Did I follow all the strategy steps to check errors and revise accordingly? I will make sure I apply the strategy completely to help me revise my essay."

____"I can also complement myself by saying "Great job!!" when I have finished revising and I am happy with my work. These are self-talks that I used to encourage myself."

____"What self-talks you can think of that you will use while revising?" The teacher writes down self-talks on a black sheet of paper. "Remember you will want to use them while revising, because this will help you be focused and revise better."

____"Also, you will practice saying your self-talk aloud when revising and I will be listening for you. I will show you how to do this in a minute, so make sure you pay attention to how I talk to myself during revising."

3. *Evaluating sample compare-contrast essays (good & bad examples)*

____"We are going to learn how to evaluate the quality of our compare-contrast paper with a rating scale."

____The teacher gives the student a quality rating scale.

____The teacher explains each item of the rating scale and asks the student to read through each.

____The teacher models evaluating the quality of the good compare-contrast essay example using the rating scale.

____The teacher models evaluating the quality of the bad compare-contrast essay example using the rating scale.

____The teacher compares the quality of the above two compare-contrast essay examples and tells the student that he or she will use the same quality rating scale on the papers prior to as well

as after revising so as to see to what extent the revising checklist can help improve the quality of the compare-contrast essays.

Revising Strategy Instruction Lesson Plan # 2

Objectives: 1. Rehearse the SEARCH checklist
             2. Model using the strategy

Materials: 1. SEARCH Checklist
             2. Sample compare-contrast essay
             3. Compare-contrast essay evaluation scale
             4. Papers and pencils
             5. Audio-recorder

---

1. Rehearsing SEARCH Checklist

____"Do you remember last time I showed you the words representing the steps to revise our papers effectively?"

____"If you think of these words and what each letter represents, you will be able to remember all the key steps of revising an essay."

____"Now tell me the words and what each letter represents." [Student needs to correctly articulate SEARCH and explain what each letter represents.]

____"At this point, you are not required to memorize all the detailed steps under each major part. However, in the following lessons, I'll help you to memorize these detailed steps and you'll need to memorize 100% correct eventually."

____After the student responds, the teacher shows the SEARCH checklist and reviews them with the student.

2. Introducing the lesson & Discussing purpose of learning the strategy

____"Last time we talked briefly about the SEARCH strategy that can help revise our essays. Today I am going to show you how to use the strategy to revise a compare-contrast essay to make it look better."

____The teacher shows the student one of his or her posttest compare-contrast papers and models rating the quality of the paper using the evaluation scale before revising.

____The teacher models using SEARCH checklist to evaluate this essay and applies revisions accordingly.

____"The first step of the strategy is to **Set goals**. I have thought about who is the audience and the impression I want to give them. I want them to think that my compare-contrast essay is good and informative. They can learn about the two things that compare and contrast in my paper."

"What is my quality goal for this essay? We talked about this in previous weeks, right? My quality goal is to include all the parts of TREE to write a good compare-contrast essay. OK. Then what is my quantity goal for this essay? My quantity goal is to include at least three important traits around which I do the comparisons."

____ "The next step is **to Examine paper to see if it makes sense**. For this step, I will make sure I have done the following: I've read my paper out loud; I think each sentence and the whole paper make sense; No words have been omitted; I've combined sentences that are too short and broken up ones that are too long. OK, let's see. Let me read my paper out loud." [Teacher models reading aloud the whole essay.] "I think each sentence and the whole paper does make sense here. Oh, I missed a word in the second paragraph. It's great that I caught this error! Now I need to add this word to the line. Then do I have sentences that are too long or too short? Yes, there are a few sentences I need to combine to make it longer." The teacher models applying this step to the paper and revises accordingly.

____ "The third letter in SEARCH is A, meaning *Ask if you said what you meant*: did I say what I meant? Did I express my ideas in a clear way? Are my ideas all related to the topic? Is the order of my ideas logical? Well, this is difficult. I am not sure I can do this. So I can use the self-talk I wrote on the paper and ask myself: Am I trying best to keep working hard? Well, I think I will try harder to figure out this step. OK, I can do this. After reading through my essay, I think my ideas are clear. Good! It seems that there is one idea in the third paragraph that is not directly related to the topic. I should replace that with some relevant idea. Are my ideas logically presented? Yes, I have told my readers what I am comparing and contrasting and why, then I reported three traits with enough details for each trait. I think I am all good for this step."

____ "The fourth step is to **Reveal picky errors**. During this step, I will read through my essay carefully and see whether I have any spelling, capitalization, and punctuation errors. I will make sure to correct all these errors in my paper. Then, I will need someone else to help double-check my work. Now I will need you to help me with this part. Do you find any errors that I have in this essay?" [Wait for student response and discuss the errors that student has located] "Thank you for your help! I have you double-checked my work and I don't have errors in my essay now. I can move to the next step!"

____ "The fifth step is to **Copy over neatly**. We have done a good job revising our essay so far. We have made our ideas and organization of the essay much better. And I don't have any spelling, punctuation, and capitalization errors. I can now copy over this essay neatly". The teacher models copying over the essay.

____ "The last letter in SEARCH is H, meaning **Have a last look for errors**. At this point, we haven't done with the revising yet. Does my final copy have any new or remaining errors in it? Let me examine it carefully!" "Oops! I misspelled a word in the last paragraph! I need to correct it. Oh, I am glad that I look at my essay again and catch this error. Good job! Then I need to have someone else to check my work one last time. I will need your help again to help look for any errors in the essay." [Wait for student response and discuss the errors that student has located.] "Great! I have you check my work again and I don't have any errors. The last thing I need to

check is, did I meet my goals? Let me see. Did I meet my quality goal? No. I didn't include an ending. I need to add an interesting ending and tell readers what they should know from my essay. Then I will include all the four key parts of a good compare-contrast essay. Next, did I meet my quantity goal? Oops, I only reported two traits! I will try best to come up with one more trait and elaborate with more information for this trait."

____The teacher reminds the use of self-talks during applying the SEARCH checklist to the paper.

3. Evaluating the current compare-contrast essay

____The teacher gives the student the quality rating scale.

____The teacher asks the student to read the current essay aloud and models using the evaluation scale to rate the essay quality.

4. Discussing improvement & Generalizing

____The teacher compares the quality scores of the student's essay prior to and after revising and prompts the student to think about to what extent the SEARCH checklist helps improve the quality of the compare-contrast essay.

____"Now looking at the essay you wrote earlier and the same essay I revised using the SEARCH strategy, do you think the strategy can help us write a better essay? Why?"

____"Do you think SEARCH strategy help meeting your quality goal and quantity goal?"

____"If you hadn't used the SEARCH strategy, would you have written as good an essay as you did? Why or why not?"

____"Tell me some other tasks for which you could use this strategy?"

Revising Strategy Instruction Lesson Plan # 3

Objectives: 1. Rehearse the mnemonic aid for the strategy
            2. Provide guided practice of the strategy with the student

Materials: 1. SEARCH Checklist
           2. Sample compare-contrast essay
           3. Compare-contrast essay evaluation scale
           4. Papers and pencils
           5. Audio-recorder

1. Rehearsing SEARCH Checklist

____"Do you remember last time I showed you the words representing the steps to revise our papers effectively?"

____"If you think of these words and what each letter represents, you will be able to remember all the key steps of revising an essay."

____"Now tell me the words and what each letter represents." [Student needs to correctly articulate SEARCH and explain what each letter represents.

____After the student responds, the teacher shows the SEARCH checklist and reviews them with the student.

2. Guided practice: Student and teacher revising a paper together

____"Last time you've seen how I used the strategy to revise an essay, let's practice using the strategy together today on another essay."

____The teacher shows the student one of the his or her posttest compare-contrast papers and rates the quality of the paper using the evaluation scale together with the student.
____ The teacher leads the student through the strategy, asking the student what the next step is and how to do each step.

____"So, let's remember, which are the steps of our strategy? What do we do first? Excellent! We **set goals**. Have I thought about who is the audience and the impression I want to give them? What is my quality goal? What is my quantity goal? OK, does my essay meet my goals?"

____Student comes up with answers to each of the questions. The teacher guides the student to revise the essay accordingly based on the answers to the questions.

____"What is the next? We **examine paper to see if it makes sense**. Have I read my paper out loud? Do each sentence and the whole paper make sense? Any words have been omitted? Have I combined sentences that are too short and broken up ones that are too long?" The teacher guides the student to answer each of the questions and carry out revisions accordingly.

_____"What will we do next? We need to ask **ask if you said what you meant**: did I say what I meant? Do I express my ideas in a clear way? Are my ideas all related to the topic? Is the order of my ideas logical?" The teacher guides the student to revise the essay accordingly based on the answers to the questions.

_____"Then we need to **reveal picky errors**. Let's read the essay carefully. Do I have any spelling, capitalization, and punctuation errors?" The teacher guides the student to answer each of the questions and make revisions accordingly.

_____"What do we do next? Now **we copy over neatly**." The teacher guides the students copy the essay. "Excellent!"

_____"What is very last step? I need to **have a last look for errors**. Does my final copy have any new or remaining errors in it? Did I have someone else to check my work one last time? Did I meet my goals?" The teacher guides the student to answer each of the questions and make revisions accordingly.

_____The teacher reminds the use of self-talks during revising.

3. *Evaluating the current compare-contrast essay*

_____The teacher gives the student the quality rating scale.

_____The teacher asks the student to read the current essay aloud and rates the quality of the essay using the evaluation scale together with the student.

4. Discussing improvement & Generalizing

_____The teacher compares the quality scores of the student's essay prior to and after revising and prompts the student to think about to what extent the SEARCH checklist helps improve the quality of the compare-contrast essay.

_____"Now looking at the essay you wrote earlier and the same essay we revised together using the SEARCH strategy, do you think the strategy can help us write a better essay? Why?"

_____"Do you think SEARCH strategy help meeting your quality goal and quantity goal?"

_____"If you hadn't used the SEARCH strategy, would you have written as good an essay as you did? Why or why not?"

_____"Tell me some other tasks for which you could use this strategy?"

Revising Strategy Instruction Lesson Plan # 4

Objectives: 1. Memorize the mnemonic aid for the strategy

Materials: 1. SEARCH Checklist
          2. Student's compare-contrast essay
          3. Compare-contrast essay evaluation scale
          4. Papers and pencils
          5. Audio-recorder

1. Rehearsing SEARCH Checklist

____"Do you remember last time I showed you the words representing the steps to revise our papers effectively?"

____"If you think of these words and what each letter represents, you will be able to remember all the key steps of revising an essay."

____"Now tell me the words and what each letter represents." [Student needs to correctly articulate SEARCH and explain what each letter represents.

____After the student responds, the teacher shows the SEARCH checklist and reviews them with the student.

2. Providing Memorization Practice

____"At this point, you will need to memorize the SEARCH checklist, including all the detailed steps under each major part 100% correct."

____Student practices memorizing the SEARCH checklist.

____The teacher examines the student to make sure he or she memorizes the SEARCH checklist to the criteria.

Revising Strategy Instruction Lesson Plan # 5

Objectives: 1. Rehearse the mnemonic aid for the strategy
  2. Independent practice of the strategy

Materials: 1. SEARCH Checklist
  2. Student's compare-contrast essay
  3. Compare-contrast essay evaluation scale
  4. Papers and pencils
  5. Audio-recorder

1. Rehearsing SEARCH Checklist

____"Do you remember last time I showed you the words representing the steps to revise our papers effectively?"

____"If you think of these words and what each letter represents, you will be able to remember all the key steps of revising an essay."

____"Now tell me the words and what each letter represents." [Student needs to correctly articulate SEARCH and explain what each letter represents.] "You need to also tell me each step within each of the major parts for the revising."

____After the student responds, the teacher shows the SEARCH checklist and reviews them with the student.

____"This time, let's use this strategy to revise an essay you wrote earlier on your own."

2. Student practicing using the strategy independently

____The teacher shows the student one of the his or her posttest compare-contrast papers and asks the student to rate the quality of the paper using the evaluation scale.

____The student uses SEARCH checklist to revise his or her essay.

3. Evaluating the current compare-contrast essay

____The teacher gives the student the quality rating scale.

____The teacher asks the student to read the current essay aloud and asks the student to rate the quality of the essay using the evaluation scale.

4. Discussing improvement & Generalizing

____The teacher compares the quality scores of the student's essay prior to and after revising and prompts the student to think about to what extent the SEARCH checklist helps improve the quality of the compare-contrast essay.

____"Now looking at the essay you wrote earlier and the same essay you just revised all by yourself using the SEARCH strategy, do you think the strategy can help us write a better essay? Why?"

____"Do you think SEARCH strategy help meeting your quality goal and quantity goal?"

____"If you hadn't used the SEARCH strategy, would you have written as good an essay as you did? Why or why not?"

____"Tell me some other tasks for which you could use this strategy?"

Revising Strategy Instruction Lesson Plan # 6

Objectives: 1. Independent practice of the strategy
            2. Wean the student off the mnemonic aid and the planning sheet

Materials: 1. Student's compare-contrast essay
          2. Compare-contrast essay evaluation scale
          3. Papers and pencils
          4. Audio-recorder

1. Rehearsing SEARCH Checklist

_____"Do you remember last time I showed you the words representing the steps to revise our papers effectively?"

_____"If you think of these words and what each letter represents, you will be able to remember all the key steps of revising an essay."

_____"Now tell me the words and what each letter represents." [Student needs to correctly articulate SEARCH and explain what each letter represents.] "You need to also tell me each step within each of the major parts for the revising."

_____After the student responds, the teacher shows the SEARCH checklist and reviews them with the student.

_____"This time, you will use this strategy to revise an essay you wrote earlier on your own. But you won't have the SEARCH checklist with you. So you will use the strategy out of your mind."

2. Weaning off the strategy chart and planning sheet

_____The teacher explains to the student that they won't usually have a SEARCH checklist with them when they need to revise essays. So they can write down the mnemonic and self-talks at the top of a blank sheet. Remind the students to make a space on the paper for notes for each step of SEARCH.

_____The teacher reminds the student to check off each step of SEARCH on the sheet when he or she has completed that step.

_____The teacher reminds the student to write down his or her self-talks on the blank sheet of paper and make sure to use them during revising.

_____The teacher shows the student one of the his or her posttest compare-contrast papers and asks the student to rate the quality of the paper using the evaluation scale.

_____The student revises his or her essay following the SEARCH steps (but without the mnemonic aid).

3. Evaluating the current compare-contrast essay

____The teacher gives the student the quality rating scale.

____The teacher asks the student to read the current essay aloud and rates the quality of the essay using the evaluation scale.

4. Discussing improvement & Generalizing & Wrap-up

____The teacher compares the quality scores of the two essays prior to and after revising and prompts the student to think about to what extent the SEARCH checklist helps improve the quality of the compare-contrast essay.

____"Now looking at the essay you wrote earlier and the same essay you just revised all by yourself using the SEARCH strategy, do you think the strategy can help us write a better essay? Why?"

  "Do you think SEARCH strategy help meeting your quality goal and quantity goal?"

____"If you hadn't used the SEARCH strategy, would you have written as good an essay as you did? Why or why not?"

____"Tell me some other tasks for which you could use this strategy?"

____"I really have enjoyed working with you these past few weeks. Your goal now is to keep using the SEARCH strategy whenever it can help you revise your essay."

Appendix D. Planning Sheet (Reflecting Two Ways to Organize Ideas)

TREE BRANCH
Compare-Contrast Essay Planning Sheet (1)

Author: _____   Date: _____

My quality goal for this essay is: _____

My quantity goal for this essay is: _____

Generate idea words for: _____ to _____

On What?

Same

_____

_____

_____

On What?

Different	

_____

_____

_____

Self-talk statements: _____

_____

_____

TREE BRANCH
Compare-Contrast Essay Planning Sheet (2)

Author: _____   Date: _____

My quality goal for this essay is: _____

My quantity goal for this essay is: _____

Generate idea words for: _____ to _____

On What?	Same	Different
_____		
_____		
_____		

Self-talk statements: _____

_____

_____

TREE BRANCH
Evaluation for Compare-Contrast Essay Quality

Author: _____   Partner: _____

Points

1 = Needs a lot more work
2 = Could be a little better
3 = Pretty good the way it is
4 = Terrific, other kids should see this

Questions for Your Partner

After reading and marking the author's essay, answer the following:
1. Does the writer include all four parts of the TREE?
      1   2   3   4
2. Does the writer include three important traits that are related to the topic?
      1   2   3   4
3. Does the paper include accurate supporting details for each trait?
      1   2   3   4
4. Does the paper make sense?
      1   2   3   4
5. Does the paper use sentences that are neither too long nor too short?
      1   2   3   4
6. Is the paper free of errors (such as in spelling, punctuation, and capitalization)?
      1   2   3   4

Author Goals

My total points this time was _____
My score ❏ did ❏ did not go up from last time
The scoring goal for my next essay is _____ points
Next time I will try to improve my score most for question number 1   2   3   4   5   6

If I didn't meet my quality goal, I also set a quality goal for my next essay

_____

If I didn't meet my quality goal, I also set a quality goal for my next essay

_____

(Adapted from Troia et al., unpublished data)

Student Satisfaction Survey

Please read each of the following statement below and check the box to show how well you agree or disagree with the statement.

1. I like this writing instruction.

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

2. I benefited from this writing instruction.

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

3. I would like to keep using the TREE BRANCH strategy to help me plan and write in the future.

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

4. I would like to keep using the SEARCH strategy to help me revise papers in the future.

0	1	2	3	4	5	6
Totally Disagree	Mostly Disagree	Disagree A Little	Don't Agree or Disagree	Agree A Little	Mostly Agree	Totally Agree

BIBLIOGRAPHY

BIBLIOGRAPHY

Baddeley, A. D., Gathercole, S. E., & Papagno, C. (1998). The phonological loop as a language learning device. *Psychological Review, 105*(1), 158-173.

Baddeley, A. D. (2000). The episodic buffer: A new component of working memory? *Trends in Cognitive Sciences, 4*, 417-423.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Henry Holt & Co.

Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition.* Hillsdale, N.J: L. Erlbaum Associates.

Berninger, V. W., & Fuller, F. (1992). Gender differences in orthographic, verbal, and compositional fluency: Implications for diagnosis of writing disabilities in primary grade children. *Journal of School Psychology, 30*, 363-382.

Bishop, D. V. M. (1992). The underlying nature of specific language impairment. *Journal of Child Psychology and Child Psychiatry, 3,*1-64.

Bishop, D. V. M. (1997). *Uncommon Understanding: Development and Disorders of Language Comprehension in Children.* Hove: Psychology Press.

Bishop, D. V. M., Carlyon, R. P., Deeks, J. M., & Bishop, S. J. (1999). Auditory temporal processing impairment: Neither necessary nor sufficient for causing language impairment in children. *Journal of Speech, Language, and Hearing Research, 42,* 1295-1310.

Bishop, D. V. M., & Clarkson, B. (2003). Writing language as a window into residual language deficits: A study of children with persistent and residual speech and language impairment. *Cortex, 39*, 215-237.

Bishop, D. V. M., North, T., & Dolan, C. (1996). Nonword repetition as a behavioural marker for inherited language impairment: Evidence from a twin study. *Journal of Child Psychology and Psychiatry, 37,* 391-403.

Bradlow, A. R., Kraus, N., Nicol, T. G., McGee, T. J., Cunningham, J., & Zecker, S. G. (1999). Effects of lengthened formant transition duration on discrimination and neural representation of synthetic CV syllables by normal and learning-disabled children. *Journal of the Acoustical Society of America, 106,* 2086-2096.

Briscoe, J., Bishop, D. V. M., & Norbury, C. F. (2001). Phonological processing, language and

literacy: A comparison of children with mild-to-moderate sensorineural hearing loss and those with specific language impairment. *Journal of Child Psychology and Psychiatry, 42,* 329-340.

Butterfield, E. C., Hacker, D. J., & Albertson, L. R. (1996). Environmental, cognitive, and metacognitive influences on text revision: Assessing the evidence. *Educational Psychology Review, 8*(3), 239-297.

Campbell, W. N., Skarakis-Doyle, E. (2007). School-aged children with SLI: the ICF as a framework for collaborative service delivery. *Journal of Communication Disorders*, *40*, 513–535.

Catts, H. W. (1993). The relationship between speech-language impairments and reading disabilities. *Journal of Speech and Hearing Research, 36,* 948-958.

Catts, H. W., Fey, M. E., Tomblin, J. B., & Zhang, X. (2002). A longitudinal investigation of reading outcomes in children with language impairments. *Journal of Speech, Language, and Hearing Research, 45,* 1142-1157.

Deatline-Buchman, A., & Jitendra, A. K. (2006). Enhancing argumentative essay writing of fourth-grade students with language disabilities. *Learning Disability Quarterly, 29*(1), 39-54.

De La Paz, S. (2001). Teaching writing to students with attention deficit disorders and specific language impairment. *The Journal of Educational Research, 95*(1), 37-47.

De La Paz, S. (2005). Teaching historical reasoning and argumentative writing in culturally and academically diverse middle school classrooms. *Journal of Educational Psychology, 97,*139-158.

De La Paz, S. & Graham, S. (1997b). Effects of dictation and advanced planning instruction on the composing of students with writing and learning problems. *Journal of Educational Psychology, 89,* 203-222.

De La Paz, S. & Graham, S. (1997a). Strategy instruction in planning: Effects on the writing performance and behavior of students with learning disabilities. *Exceptional Children, 63,* 167-181.

De La Paz, S., & Graham, S. (2002). Explicit teaching strategies, skills, and knowledge: Writing instruction in middle school classrooms. *Journal of Educational Psychology, 94,* 291-304.

De La Paz, S., Swanson, P. M., & Graham, S. (1998). The contribution of executive control to the revising by students with writing and learning difficulties. *Journal of Educational Psychology, 90*, 448-460.

Deno, S. L., Marston, D., & Mirkin, P. (1982). Valid measurement procedures for continuous evaluation of written expression. *Exceptional Children, 48*, 368-371.

132

Deno, S. L., Mirkin, P., & Marston, D. (1980). *Relationships among simple measures of written expression and performance on standardized achievement tests* (Rep. No. 22). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities.

Dockrell, J. E., & Connelly, V. (2009). The impact of oral language skills on the production of written text. *The British Journal of Educational Psychology* (monograph series), number 6, 45-62.

Dockrell, J. E., Lindsay, G., & Connelly, V. (2009). The impact of specific language impairment on adolescents' written text. *Exceptional Children, 75*(4), 427-446.

Dockrell, J. E., Lindsay, G., Connelly, V., & Mackie, C. (2007). Constraints in the production of written text in children with specific language impairments. *Exceptional Children, 73,* 147-164.

Dockrell, J. E., Lindsay, G., Palikara, O., & Cullen, M. A. (2007). *Raising the achievements of children and young people with specific speech and language difficulties and other special educational needs through school, to work and college. RR837.* Nottingham: Department for Education and Skills.

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53*, 109-132.

Ellis, E. S., & Friend, P. (1991). Adolescents with learning disabilities. In B. Y. L. Wong (Ed.), *Learning about learning disabilities* (pp. 505–561). San Diego, CA: Academic Press.

Ellis Weismer, S., Evans, J., & Hesketh, L. (1999). An examination of working memory capacity in children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 42*, 1249-1260.

Ellis Weismer, S., Tomblin, J. B., Zhang, X., Buckwalter, P., Gaura Chynoweth, J., & Jones, M. (2000). Nonword repetition performance in school-age children with and without language impairment. *Journal of Speech, Language, and Hearing Research*, *43*, 865-878.

Englert, C. S., & Hiebert, E. H. (1984). Children's developing awareness of text structure in expository materials. *Journal of Educational Psychology, 76,* 65–74.

Englert, C. S., Raphael, T. E., Anderson, L. M., Anthony, H. M., & Stevens, D. D. (1991). Making writing strategies and self-talk visible: Cognitive strategy instruction in writing in regular and special education classrooms. *American Educational Research Journal, 28,* 337–372.

Englert, C. S., & Thomas, C. C. (1987). Sensitivity to text structure in reading and writing: A comparison between learning disabled and non-learning disabled students. *Learning Disability Quarterly, 17,* 2–32.

Fey, M. E., Catts, H. W., Proctor-Williams, K., Tomblin, J. B., & Zhang, X. Y. (2004). Oral and written story composition skills of children with language impairment. *Journal of Speech,*

Language, and Hearing Research, 47, 1301-1318.

Fitzgerald, J. (1987). Research on revision in writing. *Review of Educational Research, 57*, 481-506.

Fitzgerald, J. & Markham, L. (1987). Teaching children about revision in writing. *Cognition and Instruction, 4*, 3-24.

Fletcher, P. (1999). Specific language impairment. In M. Barrett (Ed.), *The development of language* (pp. 349-371). Hove: Psychology Press.

Fukkink, R. G., Blok, H., & de Glopper, K. (2001). Deriving word meaning from written context: A multicomponential skill. *Language Learning, 51,* 477-498.

Gathercole, S. E. (2006). Nonword repetition and word learning: The nature of the relationship. *Applied Psycholinguistics, 27,* 513-543.

Gathercole, S. E., & Baddeley, A. D. (1990). Phonological deficits in language disordered children: Is there a causal connection? *Journal of Memory and Language, 29*, 336-360.

Gathercole, S. E., & Baddeley, A. D. (1993). *Working memory and language*. Hillsdale, NJ: Lawrence Erlbaum.

Gathercole, S. E., Hitch, G. J., Service, E., & Martin, A. J. (1997). Phonological short-term memory and new word learning in children. *Developmental Psychology, 33*(6), 966-979.

Gathercole, S.E., Service, E., Hitch, G. J., Adams, A. M., & Martin, A. J. (1999). Phonological short-term memory and vocabulary development: Further evidence on the nature of the relationship. *Applied Cognitive Psychology, 13,* 65–77.

Gillam, R. B., & Johnston, J. R. (1992). Spoken and written language relationships in language/learning- impaired and normally achieving school-age children. *Journal of Speech and Hearing Research, 35*, 1303-1315.

Gillam, S. L., & Kamhi, A. G. (2010). Specific language impairment. In J. S. Damico, N, Muller, & M. J. Ball (Eds.), *The handbook of language and speech disorders* (pp. 210-226). Wiley-Blackwell.

Graham, S. (1997). Executive control in the revising of f with learning and writing difficulties. *Journal of Educational Psychology, 89,* 223-234.

Graham, S., Berninger, V., Abbott, R., Abbott, S., & Whitaker, D. (1997). The role of mechanics in composing of elementary school students: A new methodological approach. *Journal of Educational Psychology, 89*(1), 170-182.

Graham, S., & Harris, K. R. (1989a). Improving learning disabled students' skills at composing essays: Self-instructional strategy training. *Exceptional Children, 56,* 201–231.

Graham, S., & Harris, K. R. (1989b). A component analysis of cognitive strategy instruction: Effects on learning disabled students' compositions and self-efficacy. *Journal of Educational Psychology, 81,* 353–361.

Graham, S., & Harris, K. R. (1993). Self-regulated strategy development: Helping students with learning problems develop as writers. *The Elementary School Journal*, *94*(2), 169-181.

Graham, S., & Harris, K. R. (2000). The role of self-regulation and transcription skills in writing and writing development. *Educational Psychologist, 35*, 3–12.

Graham, S., & Harris, K. R. (2003). Students with learning disabilities and the process of writing; A meta-analysis of SRSD studies. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities* (pp. 323-344). New York: Guilford Press.

Graham, S., & Harris, K. R. (2005). *Writing better: Teaching writing processes and self-regulation to students with learning problems*. Baltimore, MD: Brookes.

Graham, S., & Harris, K.R. (2013). Common Core State Standards, writing, and students with LD. *Learning Disabilities Research & Practice, 28,* 28-37.

Graham, S., Harris, K. R., & Mason, L. (2005). Improving the writing performance, knowledge, and self-efficacy of struggling young writers: The effects of self-regulated strategy development. *Contemporary Educational Psychology, 30*(2), 207-241.

Graham, S., Harris, K. R., & Reid, R. (1992). Developing self-regulated learners. Focus on *Exceptional Children, 24*, 1-16.

Graham, S., & MacArthur, C. A. (1988). Improving learning disabled students' skills at revising essays produced on a word processor: Self-instructional strategy training. *The Journal of Special Education, 22*(2), 133- 152.

Graham, S., MacArthur, C. A., & Schwartz, S. (1995). Effects of goal setting and procedural facilitation on the revising behavior and writing performance of students with writing and learning problems. *Journal of Educational Psychology, 87,* 230-240.

Graham, S., MacArthur, C. A., Schwartz, S., & Page-Voth, V. (1992). Improving the compositions of students with learning disabilities using a strategy involving product and process goal setting. *Exceptional Children, 58,* 322-334.

Graham, S., McKeown, D., Kiuhara, S., & Harris, K. R. (2012). A meta-analysis of writing instruction for students in the elementary grades. *Journal of Educational Psychology, 104*(4), 879.

Graham, S., & Perin, D. (2007). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology, 99*(3), 445-476.

Hammann, L. A., & Stevens, R. J. (2003). Instructional approaches to improving students' writing of compare–contrast essays: An experimental study. *Journal of Literacy*

Research, 35, 731–756.

Harris, K. R., Graham, S., & Mason, L. H. (2003). Self-regulated strategy development in the classroom: Part of a balanced approach to writing instruction for students with learning disabilities. *Focused on Exceptional Children, 35*(7), 1-16.

Harris, K. R., Graham, S., & Mason, L. H. (2006). Improving the writing, knowledge, and motivation of struggling young writers: Effects of self-regulated strategy development with and without peer support. *American Educational Research Journal, 43*(2), 295-340.

Hayes, J. R., & Flower, L. S. (1986). Writing research and the writer. *American Psychologist, 41(10),* 1106-1113.

Jacobson, L. T., & Reid, L. R. (2010). Improving the Persuasive Essay Writing of High School Students With ADHD. *Exceptional Children, 76(2*), 157-174.

Leonard, L. B. (1998). *Children with specific language impairment.* Cambridge, MA: MIT Press.

Leonard, L. B., Eyer, J., Bedore, L., & Grela, B. (1997). Three accounts of the grammatical morpheme difficulties of English-speaking children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 40*, 741-753.

Leonard, L. B., McGregor, K. K. & Allen, G. D. (1992). Grammatical morphology and speech perception in children with specific language impairment. *Journal of Speech and Hearing Research, 35,* 1076-1085.

Lewis, B. A., & Freebairn, L. (1992). Residual effects of preschool phonology disorders in grade school, adolescence, and adulthood. *Journal of Speech and Hearing Research, 35,* 819-831.

Lewis, B. A., O'Donnell, B., Freebairn, L. A., & Taylor, H. G. (1998). Spoken language and written expression: Interplay of delays. *American Journal of Speech-Language Pathology, 7*(3), 77-84.

Lienemann, T. O., Graham, S., Leader-Janssen, B., & Reid, R. (2006). Improving the writing *performance of struggling writers in second grade. The Journal of Special Education, 40,* 66-78.

Lienemann, T. O., & Reid, R. (2008). Using self-regulated strategy development to improve expository writing with students with attention deficit hyperactivity disorder. *Exceptional* Children, *74*(4), 471-486.

Limpo, T., Alves, R. A., & Fidalgo, R. (2014). Children's high-level writing skills: Development of planning and revising and their contribution to writing quality. *British Journal of Educational Psychology, 84(*2), 177-193.

MacArthur, C. A., & Philippakos, Z. (2010). Instruction in a strategy for compare-contrast writing. *Exceptional Children, 76*(4), 438-456.

MacArthur, C. A., & Graham, S. (1987). Learning disabled students' composing under three methods of text production: Handwriting, word processing, and dictation. *Journal of Special Education*, *21*, 22-42.

MacArthur, C. A., Graham, S., Schwartz, S. S., & Schafer, W. D. (1995). Evaluation of a writing instruction model that integrated a process approach, strategy instruction, and word processing. *Learning Disability Quarterly, 18*(4), 278-291.

MacArthur, C. A., & Lembo, L. (2009). Strategy instruction in writing for adult literacy learners. *Reading and Writing, 22*(9), 1021-1039.

MacArthur, C. A., Schwartz, S., & Graham, S. (1991). Effects of a reciprocal peer revision strategy in special education classrooms. *Learning Disability Research & Practice, 6,* 201-210.

Mackie, C., & Dockrell, J. (2004). The nature of written language deficits in children with SLI. *Journal of Speech, Language, and Hearing Research, 47,* 1469-1483.

Jewell, J., & Malecki, C. K. (2005). The utility of CBM written language indices: An investigation of production-dependent, production-independent, and accurate-production scores. *School Psychology Review, 34*(1), 27-44.

Mason, L. H., & Graham, S. (2008). Writing instruction for adolescents with learning disabilities: Programs of intervention research. *Learning Disabilities Research & Practice, 23*(2), 103-112.

Meyer, B. J. F., & Freedle, R. O. (1984). Effects of discourse type on recall. *American Educational Research Journal*, *21*, 121–143.

Midgette, E., Haria, P., & MacArthur, C. A. (2008). The effects of content and audience awareness goals for revision on the persuasive essays of fifth- and eight- grade students. *Reading and Writing: An Interdisciplinary Journal, 21*(1), 131-151.

Miller, C. A. (2011). Auditory processing theories of language disorders: Past, present, and future. *Language, Speech, And Hearing Services in Schools, 42*, 309-319.

Monroe, B. W., & Troia, G. A. (2006). Teaching writing strategies to middle school students with disabilities. *The Journal of Educational Research, 100*, 21-33.

Montgomery, J. (2000). Verbal working memory in sentence comprehension in children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 43,* 293-308.

Moore, N. S., & MacArthur, C. A. (2012). The effects of being a reader and of observing readers on fifth-grade students' argumentative writing and revising. *Reading and Writing, 25(6),* 1449-1478.

National Commission on Writing for America's Families, Schools, and Colleges. (2004). *Writing: A ticket to work or a ticket out. A survey of business leaders.* New York, NY: College Entrance Examination Board.

Nelson, N. W., Roth, F. P., & Van Meter, A. M. (2009). Written composition instruction and intervention for students with language impairment. In G. A. Troia (Ed.), *Instruction and assessment for struggling writers: Evidence-based practices* (pp. 187-212). New York: Guilford Press.

Pajares, F., & Valiante, G. (1999). Grade level and gender differences in the writing self-beliefs of middle school students. *Contemporary Educational Psychology, 24,* 390–405.

Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in education: Theory, research, and applications (2nd ed.).* Englewood Cliffs, NJ: Prentice Hall.

Puranik, C., Lombardino, L., & Altman, L. (2007). Writing through retellings: An exploratory study of language impaired and dyslexic populations. *Reading and Writing, 20,* 251-272.

Reid, R., & Lienemann, T. O. (2006). Self-regulated strategy development for written expression with students with attention deficit/hyperactivity disorder. *Exceptional Children, 73,* 53-68.

Richgels, D. J., McGee, L. M., Lomax, R. G., & Sheard, C. (1987). Awareness of four text structures: Effects on recall of expository text. *Reading Research Quarterly*, *22*, 177–196.

Reynolds, C. J., Hill, D. S., Swassing, R. H., & Ward, M. E. (1988). The effects of revision strategy instruction on the writing performance of students with learning disabilities. *Journal of Learning Disabilities, 21,* 540-545.

Rogers, L. A., & Graham, S. (2008). A meta-analysis of single subject design writing intervention research. *Journal of Educational Psychology, 100*(4), 879.

Rosen, R. (2003). Auditory processing in dyslexia and specific language impairment: Is there a deficit? What is its nature? Does it explain anything? *Journal of Phonetics, 31*, 509-527.

Saddler, B. (2006). Increasing story-writing ability through self-regulated strategy development: Effects on young writers with learning disabilities. *Learning Disability Quarterly, 29*(4), 291-305.

Saddler, B. & Asaro, K. (2007). Increasing story quality through planning and revising: Effects on young writers with learning disabilities. *Learning Disability Quarterly, 30*, 223-234.

Saddler, B., Moran, S., Graham, S., & Harris, K. (2004). Preventing writing difficulties: The effects of planning strategy instruction on the writing performance of struggling writers. *Exceptionality, 12*(1), 3-17.

Sawyer, R. J., Graham, S., Harris, K. R. (1992). Direct teaching, strategy instruction and strategy instruction with explicit self-regulation: Effects on the composition skills and self-efficacy of students with learning disabilities. *Journal of Educational Psychology, 84*(3), 340-352.

Scardamalia, M., & Bereiter, C. (1983). The development of evaluative, diagnostic and remedial

capabilities in children's composing. In M. Martlew (Ed.), *The psychology of written language: Development and educational perspectives* (pp. 67-95). London: Wiley.

Scardamalia, M., & Bereiter, C. (1986). Research on written composition. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 778-803). New York: Macmillan.

Schnee, A. K. (2010). Student writing performance: Identifying the effects when combining planning and revising instructional strategies. Unpublished doctoral dissertation, University of Nebraska at Lincoln.

Scott, C. M. & Windsor, J. (2000). General language performance measures in spoken and written narrative and expository discourse of school-age children with language learning disabilities. *Journal of Speech, Language, and Hearing Research, 43*, 324-339.

Scruggs, T. E., & Mastropieri, M. A. (2001). How to summarize single-participant research: Ideas and applications. *Exceptionality, 9,* 227–244.

Shell, D. F., Colvin, C., & Bruning, R. H. (1995). Self-efficacy, attribution, and outcome expectancy mechanisms in reading and writing achievement: Grade-level and achievement-level differences. *Journal of Educational Psychology, 87*(3), 386-398.

Shell, D. F., Murphy, C. C., & Bruning, R. H. (1989). Self-efficacy and outcome expectancy mechanisms in reading and writing achievement. *Journal of Educational Psychology*, *81*(1), 91.

Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academies Press.

Stahl, S. A., & Nagy, W. E. (2006). *Teaching word meanings*. Mahwah, NJ: Lawrence Erlbaum.

Stark, R., & Heinz, J. (1996). Vowel perception in language impaired and language normal children. *Journal of Speech and Hearing Research, 30*, 860-869.

Starllard, C. K. (1974). An analysis of the writing behavior of good student writers. *Research in the Teaching of English, 8*(2), 206-218.

Steel, S. C., & Mills, M., T. (2011). Vocabulary intervention or school-age children with language impairment: A review of evidence and good practice. *Child Language Teaching and Therapy, 27(*3), 354-370.

Stoddard, B., & MacArthur, C. A. (1993). A peer editor strategy: Guiding learning-disabled students in response and revision. *Research in the Teaching of English, 27,* 76-103.

Tallal, P., & Piercy, M. (1973). Defects of non-verbal auditory perception in children with developmental aphasia. *Nature*, *241*, 468-469.

Tallal, P., & Piercy, M. (1974). Developmental aphasia: Rate of auditory processing and selective impairment of consonant perception. *Neuropsychologia*, *12*, 83-93.

139

Tallal, P., Stark, R., Kallman, C., & Mellits, D. (1981). A reexamination of some nonverbal perceptual abilities of language-impaired and normal children as a function of age and sensory modality. *Journal of Speech and Hearing Research, 24*, 351-357.

Tomblin, B., Records, N., Buckwalter, P., Zhang, X. (1996). A system for the diagnosis of specific language impairment in kindergarten children. *Journal of Speech and Hearing Research, 39,* 1284-1294.

Tracy, B., Reid, R., & Graham, S. (2009). Teaching young students strategies for planning and drafting stories: The impact of self-regulated strategy development. *Journal of Educational Research, 102*(5), 323–331.

Troia, G. A. (2002). Teaching writing strategies to children with disabilities: Setting generalization as the goal. *Exceptionality, 10,* 249-269.

Troia, G. A. (2004). Phonological processing and its influence on literacy learning. In C. A. Stone, E. R. Silliman, B. J. Ehren, & K. Apel (Eds.), *Handbook of language and literacy: Development and disorders* (pp. 271–301). New York: Guilford Press.

Troia, G. A. (2006). Writing instruction for students with learning disabilities. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 324-336). New York: Guilford.

Troia, G. A. (2009). Self-regulation and the writing process: Enhancing the performance of students with language and learning difficulties. *Perspectives on Language Learning and Education, 16*, 2-36.

Troia, G. A. (2013). Effective writing instruction in 21st Century. In B. M. Taylor, & N. K. Duke (Eds.), *Handbook of Effective Literacy Instruction: Research-Based Practices K-8* (pp. 298- 345). New York: Guilford Press.

Troia, G. A., & Graham, S. (2002). The effectiveness of a highly explicit, teacher-directed strategy instruction routine: Changing the writing performance of students with learning disabilities. *Journal of Learning Disabilities, 35*, 290-305.

Troia, G. A, Graham, S. & Harris, K. R. (1999). Teaching students with learning disabilities to mindfully plan when writing. *Exceptional Children, 65,* 235-252.

Troia, G. A., Harbaugh, A. G., Shankland, R. K., Wolbers, K. A., & Lawrence, A. M. (2013). Relationships between writing motivation, writing activity, and writing performance: effects of grade, sex, and ability. *Reading and Writing, 26*(1), 17-44.

Ullman, M. T., & Gopnik, M. (1999). Inflectional morphology in a family with inherited specific language impairment. *Applied Psycholinguistics, 20,* 51-117.

van der Ley, H. K. J., & Ullman, M. T. (2001). Past tense morphology in specially language impaired and normally developing children. *Language and Cognitive Processes, 16*, 177-217.

Van Weijen, D. (2009a). *Writing processes, text quality, and task effects*. (Vol. 201). Utrecht: LOT.

Waber, D. P., Weiler, M. D., Wolff, P. H., Bellinger, D., Marcus, D. J., Ariel, R., Forbes, P., & Wypij, D. (2001). Processing of rapid auditory stimuli in school-age children referred for evaluation of learning disorders. *Child Development, 72*, 1253-1258.

Windsor, J., Scott, C. M., & Street, C. K. (2000). Verb and noun morphology in the spoken and written language of children with language learning disabilities. *Journal of Speech, Language, and Hearing Research, 43,* 1322-1336.

Wong, B. Y. (1997). Research on genre-specific strategies for enhancing writing in adolescents with learning disabilities. *Learning Disability Quarterly, 20*(2), 140-159.

Wong, B. Y. L., Butler, D. L., Ficzere, S. A., & Kuperis, S. (1996). Teaching low achievers and students with learning disabilities to plan, write, and revise opinion essays. *Journal of Learning Disabilities, 29*, 197-212.

Yeh, S. (1998). Empowering education: Teaching argumentative writing to cultural minority middle-school students. *Research in the Teaching of English, 33,* 49–83.

Zimmerman, B., & Reisemberg, R. (1997). Becoming a self-regulated writer: A social- cognitive perspective. *Contemporary Educational Psychology, 22,* 73–101.