THE EFFECTS OF STRATEGY INSTRUCTION FOR WRITING AND REVISING
PERSUASIVE QUICK WRITES ON MIDDLE SCHOOL STUDENTS WITH
EMOTIONAL BEHAVIORAL DISORDERS

A Dissertation in
Special Education

by
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Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

August 2011
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Abstract

A multiple baseline alternating treatment (A-B-C-D) design was used to evaluate the effectiveness of strategies for teaching persuasive writing and peer revision. Eight middle school students enrolled in an alternative program for students with emotional and behavioral disorders (EBD) received Self-Regulated Strategy Development (SRSD) instruction for writing a persuasive quick write response and peer revision. Assessment included 17 persuasive quick writes across four phases, alternating individual and peer revision. Effects were measured in terms of; (1) holistic quality of persuasive quick writes, (2) number of primary traits incorporated into persuasive quick writes (topic sentence, reasons, explanations, counter arguments, a statement refuting the counter, and ending), (3) number of words written, (4) the ability of participants to identify, evaluate and make substantive revisions at the planning stage, and (5) the degree to which participants incorporate revision recommendations. Implications of findings and directions for future research are discussed.
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</tr>
<tr>
<td>BASC-2</td>
<td>Behavioral Assessment System for Children</td>
</tr>
<tr>
<td>EBD</td>
<td>Emotional and Behavioral Disorder</td>
</tr>
<tr>
<td>ED</td>
<td>Emotional Disorder</td>
</tr>
<tr>
<td>DSM</td>
<td>Diagnostic and Statistical Manual of Mental Disorders IV-TR</td>
</tr>
<tr>
<td>LD</td>
<td>Learning Disabilities</td>
</tr>
<tr>
<td>LEAF</td>
<td>Listen to the author, Evaluate their best reasons, Ask evaluative questions, Finalize your comments</td>
</tr>
<tr>
<td>NAEP</td>
<td>National Assessment of Educational Progress</td>
</tr>
<tr>
<td>NOS</td>
<td>Not Otherwise Specified</td>
</tr>
<tr>
<td>ODD</td>
<td>Oppositional Defiant Disorder</td>
</tr>
<tr>
<td>PT</td>
<td>Primary Traits</td>
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<td>POW</td>
<td>Pick my idea; Organize my notes; Write and say more</td>
</tr>
<tr>
<td>SES</td>
<td>Social Economic Status</td>
</tr>
<tr>
<td>SRSD</td>
<td>Self-Regulated Strategy Development</td>
</tr>
<tr>
<td>STP</td>
<td>Summer Treatment Program</td>
</tr>
<tr>
<td>TREE</td>
<td>Topic Sentence; Reasons; Explanations; Ending</td>
</tr>
<tr>
<td>WISC-IV</td>
<td>Wechsler Intelligence Scale for Children—4th edition</td>
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Acknowledgements

This research was supported in part by Grant No. R324A070199-07 from the U.S. Department of Education, Institute of Educational Sciences, awarded to The Pennsylvania State University.
Chapter 1

No single academic skill predicts an individual’s overall success, but deficits in one critical skill can make achieving success challenging. Writing is one of the critical skills necessary for success (National Commission on Writing, 2003, 2005). Written communication is a common area of struggle, especially for individuals with disabilities. The National Assessment of Educational Progress (NAEP) reported that although recent testing results reflect marginal gains, alarming deficits in writing ability remain (Salahu-Din, Persky, & Miller, 2008). Research in writing interventions for students with disabilities has increased in recent years, however, the majority of the studies examine writing with students with learning disabilities (LD). More research is needed for students with disabilities in other areas such as intellectual disabilities, autism, attention deficit hyperactivity disorder (ADHD), and emotional and behavioral disorders (EBD). Recent research has shown that well-designed writing interventions for students with EBD holds great promise (Taft & Mason, 2010). The current study extends this research by examining the effectiveness of research-based strategy instruction for writing and revising persuasive quick write responses with middle school students with and at risk for EBD.

Academic Outcomes for Students with Emotional Behavioral Disorders

Students with EBD are at tremendous risk for failure both in and out of the school setting. Several researchers have suggested a relation between academic deficiencies and behavioral problems. A meta-analysis of research between 1961 and 2000 found that academic performance of students with EBD trailed average achieving peers by one-to-two grade levels (Trout, Nordness, Pierce, & Epstein, 2003), and the achievement gap widened as students progress into higher grades (Coutinho, 1986). These academic deficiencies play a significant role in long-term outcomes for students with EBD. They have a higher rate of academic failure,
school drop-out, and reduced postsecondary enrollment in comparison to average achieving peers, and in comparison to other students with high-incidence disabilities (Kauffman, 2001; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). Outside of the school setting, students with EBD are at increased risk of poor social and community outcomes (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). While there is evidence that academic failure is associated with social failure (Brier, 1995; Kauffman, 2001), there is also evidence that academic success is associated with social success for students with EBD. Studies report a decrease in negative, inappropriate behaviors in the classroom associated with increased academic success (Gottfredson, Gottfredson, & Skroban, 1996). More significantly, increased academic performance is associated with decreased rates of delinquency outside of school (Maguin & Loeber, 1996). Providing teachers of students with EBD with evidence based instructional interventions that address the needs of their students may contribute to increased academic performance.

Despite this evidence, most research involving students with EBD and teacher preparation for working with this population focuses on social and behavioral domains. Two perceptions related to learning and social/behavioral concerns contribute to the dominance of behavioral focused research (Lane, Gresham & O’Shaughnessy, 2002). First, there is a misconception that learning is contingent on appropriate behavior (O’Shaughnessy, Lane, Gresham, & Beebe-Frankenberger, 2003). Student behavior influences the learning environment, but learning can occur even when behavior is less than ideal. Second, teachers’ expectations of students with EBD are influenced by common reports of volatile teacher-student exchanges in the classroom (Shores, Ben, Gunter, Ellis, DeBriere, & Wehby, 1993). It’s important to remember that these volatile behavior are snapshots of moments in time, and between these moments of inappropriate behavior are many teachable moments. Teachers
should be equipped with the most productive and effective tools possible in order to maximize learning when students are focused and ready to learn.

Students with EBD are characterized by internalizing and externalizing behaviors that hamper social, behavioral and academic progress (IDEA 2004). The research focus on social and behavioral domains, neglecting cognitive domains, may contribute to academic gaps between students with EBD and their peers without disabilities. Students with EBD often need specialized academic support in addition to behavioral and emotional support, and without research targeting cognitive needs of students with EBD, teachers may be unprepared to provide the academic support their students need. Lane warned that limited research on effective, efficient instructional strategies and procedures for students with EBD places them at risk for additional handicaps (Lane, 2004). For example, students with EBD struggle with maintaining focus, so multi-task functions, like writing, can be quite difficult (Mason, Kubina, Valasa, & Cramer, 2010). Additional research is needed to identify academic interventions that address the specific needs of students with EBD to increase academic success. In the case of writing instruction, there is evidence, that the necessary cognitive skills can be remediated through effective strategy instruction (Taft & Mason, 2010).

**Writing Instruction**

Writing is a complex task requiring coordinated function of cognitive, affective and physical domains (Troia, 2006). Students with disabilities are sometimes limited in cognitive skills essential for planning, organizing and writing, and in self-regulation skills needed to maintain focus (Graham & Harris, 2003). In the physical domain, the laborious task of handwriting can negatively affect the quality of writing and the motivation to write (MacArthur, Graham & Harris, 2004). As a result, students with disabilities often produce writing that is
shorter, incomplete, poorly organized, and of lower quality than their peers without disabilities (Englert & Raphael, 1988; Graham, 1997; MacArthur & Graham, 1987).

**Strategy instruction.** Cognitive strategy instruction in writing supports organization and breaks the complex task into manageable segments. Cognitive strategy researchers identify and operationalize strategies used by typical learners and adapt them for struggling learners (Luke, 2006). Troia (2006) described three primary benefits of strategy instruction for addressing the needs of struggling writers, which also apply to many students with EBD. First, the structure of strategy instruction supports learners and helps them manage complex tasks using cognitive routines. Second, students develop increased self-awareness of strengths and challenges in writing, building self-efficacy. This self-knowledge supports students in purposeful planning, generalized strategy implementation, and better equips them to monitor their progress and recognize when they need additional support. Finally, strategy instruction that supports self-regulation (i.e., goal setting, self-monitoring, self-evaluation, and self-reinforcement) helps writers to be more reflective about their writing ability, gives them tools for managing distracting and negative thoughts, encourages strategy ownership, and supports strategy modification as the need arises (Harris & Graham, 1992). Researchers offer evidence that the systematic, organized structure of strategy instruction may be effective for students with EBD (Mason & Shriner, 2007). In recent studies for students with EBD the Self-Regulated Strategy Development (SRSD) model (Graham & Harris, 2003) was used to teach persuasive quick writing to students with or at risk for EBD (Mason, Kubina & Taft, 2009; Mason, Kubina, Valasa, Cramer, 2010).

**Quick write.** A written response to a question on a specific topic that is generally completed in ten minutes is known as a quick write (Fisher & Frey, 2008). Quick writes can be effective in helping students make connections in content through the process of writing.
(Tierney, Soter, O’Flahavan, & McGinley, 1989). They are frequently used as an evaluation tool in secondary content area classes (Green, Smith, & Brown, 2007) and in standardized assessments (Mason, Kubina, Valasa, & Cramer, 2010). The short quick write format allows for multiple writing practice sessions in a relatively short period of time, supporting the development of fluency and giving the student more opportunities to build a pattern of success that supports motivation (Mason, Meadan, Hedin, & Cramer, 2009). The results of the quick write studies conducted by Mason and colleagues, described in detail in the next section, provide encouraging evidence that quick writes can support academic success for students with EBD.

This study used quick write to assess the effects of SRSD for POW (Pick my idea, Organize my notes, Write and say more) + TREE (Topic sentence, Reasons -three or more, Explanations –one for each reason, and Ending –wrap it up right) paired with a new strategy for peer revision instruction, SRSD for LEAF (Listen as the author reads, Explain what you like best, Ask evaluation questions, Finalize your comments). Assessing peer revision with quick writes potentially benefits students with EBD who may struggle with complex tasks. The peer editor’s cognitive processing demands may be reduced because editing can be practiced with short writing while acquiring new peer revision skills. In addition, revision is done after planning, as opposed to more typical revision of a first draft. Revising between planning and writing avoids problems associated with recopying such as intentional or unintentional omissions and decreased motivation to recopy a previously written draft (MacArthur et al., 1993). Finally, because students evaluate and revise after planning, rather than after the writing a full draft, they will avoid practicing errors while writing.
Revision

Less than 20% of revisions made by students with disabilities make substantive differences in the written piece (Graham, 1997; MacArthur & Graham, 1987). Examining the three broad phases of revision—evaluation, detection and repair—is useful in understanding when and why struggling writers encounter difficulty with revision (Fitzgerald, 1983; Flower et al., 1986).

**Evaluation.** Editors examine a piece of writing to determine the purpose and intended audience, identify appropriate primary traits, and form a general impression (MacArthur et al., 2004). They also evaluate use of standard writing conventions, such as mechanics and organization and monitor for inconsistencies and ambiguities affecting clarity or quality. Effective evaluation involves knowledge of basic language conventions (e.g., grammar, spelling, punctuation), and the purpose of different genres (e.g., to persuade, to explain, to entertain), prior knowledge that may be deficit in students with EBD who are often academically more than a year behind their same age peers. Evaluation can be problematic on multiple levels. First, students with disabilities have problems identifying errors and inconsistencies in their own word (Graham, 1997). One theory suggests a disconnect between the author’s intended and the expressed thoughts (MacArthur, Schwartz & Graham, 1991). MacArthur and colleagues speculate that when authors read their own work, they know what they want to say, and their minds fill in missing information. Writers may be unable to differentiate between what they wrote and what they thought they wrote. These authors hypothesized that the addition of a peer editor, unaware of what the author is thinking and therefore unable to resolve irregularities without asking questions or adding information, may help authors identify missing or ambiguous information.
MacArthur et al. (2004) reported that students with disabilities often have limited procedural knowledge needed for effective evaluation so often view revision as proof-reading, not an opportunity to improve clarity. Focus on surface level mechanical errors is further reinforced by prior experience with instruction emphasizing mechanical accuracy, and a history of feedback focused more on mechanics than content (Englert & Raphael, 1988; Graham, 1990; MacArthur & Graham, 1987; Sommers, 1992). The second limitation described by MacArthur (2004) was that students with disabilities often have limited knowledge in three important areas of revision—what constitutes good writing, criteria specific to writing constructions, and audience awareness—resulting in an egocentric view of writing and revisions (Bereiter & Scardamalia, 1987). Finally, serious mechanical errors can overshadow deeper substantive problems, masking the need for content level revisions (Graham, 1990; Thomas, Englert, & Gregg, 1987).

Detection. The second phase of revision, detection, is similar to evaluation but requires subtle differences in prerequisite skills (Flower et al., 1986). Detection is the process of analyzing an identified problem to define its nature or cause. Students may sense that a piece of writing is good or bad but they may not understand what makes it good or bad, or what could be done to improved the final piece. Effective detection and diagnosis is contingent on an editor’s experience and skill, and on the characteristics and intricacies of the problem. Mechanical issues have specific and concrete solutions, but high-level problems with meaning or clarity require advanced diagnostic skills and solutions (MacArthur et al., 2004). For students with EBD, who often have poor reading comprehension, limited knowledge of writing structures and limited knowledge of writing criteria (Lane, 2004), the skills needed for higher level detection and diagnosis are not present. Therefore, without additional development of prerequisite skills of
writing structures and writing criteria, and support for poor reading skills, students with EBD are unlikely to be successful in detection of writing problems.

**Repairs.** The final revision phase is the work of making the repairs identified during evaluation and detection (Flower et al, 1986). The first decision is whether to revise by reworking the existing text or fix the problem by deleting and rewriting. Both options require a variety of skills and strategies for correcting diagnosed problems, beginning with the ability to apply basic language and writing skills (MacArthur, et al., 2004), skills that may be deficit in students with EBD (Morris Kindzierski, 2009). Changes of any kind may be difficult for students with weak language, writing and mechanical skills.

**Planning Effective Revision Instruction**

Fortunately, a number of instructional approaches for strategies for composing and revision, and peer-assisted learning, have been validated as effective for improving writing performance (Graham & Perin, 2007). *In Writing Next: A Report to the Carnegie Corporation of New York*, Graham and Perin call for educators to implement evidence based writing instruction. Strategy instruction was identified as the strongest method for promoting quality writing (Effect Size = 0.82). According to the report, strategies for planning and peer revision are highly effective instructional approaches. For students with EBD, who have had very limited access to academic peer interaction, and have received the majority of their writing feedback from teachers, the addition peer revision to a planning strategy may be highly motivating (Morris Kindzierski, 2009). Students with EBD struggle with maintaining focus (Mason et al., 2010) and may find the complex, multi-task process of evaluating, detecting and making repairs while considering a broad goal difficult. Like planning and composing, successful revision demands integration and fluid movement between multiple complex
cognitive and physical domains (MacArthur et al., 2004). The revision strategy examined in this study is designed to support integration and movement between multiple domains during the revision process.

**Peer revision instruction.** There is a need to support deficits in reading and writing skills at the basic level. When students read their writing aloud, for example, it can help them locate and identify errors more readily than if they read the same piece silently (Espin & Sindelar, 1988). Having authors read their text aloud while working with peers is helpful in circumventing problems with reading due to poor handwriting and spelling (Troia, 2006). The revision strategy implemented in this study includes authors reading their plans to their peer editor, followed by the editors reading the plans themselves. This reciprocal process supports low level reading skills since the editor hears the plan read aloud before they read it themselves.

Building and supporting higher-level substantive revision skills is challenging. Cognitive and social cognitive models of writing support important foundations of knowledge about the writing process and strategy selection for revising (Flower, 1994). Instruction in effective writing strategies enhances evaluation by building prerequisite knowledge. Effective strategies develop understanding of genre specific goals, helping students understand what constitutes good writing, which helps them identify primary traits (MacArthur, 2004). By combining the POW + TREE persuasive writing strategy with the LEAF revision strategy in this study, editors develop the background knowledge about writing persuasive responses needed to be effective editors.

Peer feedback can be an effective approach for supporting higher-level evaluation for clarity, organization, and congruency (MacArthur, Schwartz & Graham, 1991; Stoddard & MacArthur, 1997). Based on Vygotsky’s socio-cultural theory of learning, (see Appendix A for pilot study, “Evaluating Effective Writing Instruction for Fourth and Sixth Grade Students with
ADHD in a Summer Treatment Program”), peers can provide meaningful feedback to their peers when they receive instruction in strategies for providing specific, constructive feedback in a socially appropriate manner (Dahl & Farnan, 1998; Fitzgerald & Stamm, 1990; Patthey-Chavez & Ferris, 1997). Without formal instruction in feedback, students are more likely to give potentially hurtful negative feedback or random praise to preserve social relationships (Beach & Friedrich, 2006; Dipardo & Freedman, 1988). The LEAF peer revision strategy used in this study teaches editors the meaning of specific, constructive and appropriate feedback, and provides scaffolded practice in delivering both praise and corrective feedback. For students with EBD, who have had limited opportunity to work with peers in the classroom, this instruction in how to work with peers is critical to their success as editors (Morris Kindzierski, 2009).

Adding peer feedback to the revision component in this study offers potential benefits for writers and editors. Generating enough pertinent, functional content is problematic for students with disabilities (Graham, 1990). Troia (2006) reports that due to the complex nature of writing and revision, students may have a limited capacity to sustain a memory search for information germane to the topic (Englert & Raphael, 1988). Peer editors using the LEAF strategy may be able to identify missing content and help authors generate additional ideas.

Peer revision in this study is intended to support writers with disabilities who have a limited capacity to identify errors in their own writing (Bartlett, 1982). When instructed in strategies for giving specific and constructive feedback as well as skills for working appropriately with peers, students are able to provide helpful feedback (Dahl & Farnan, 1988; Fitzgerald & Stamm, 1990; Patthey-Chavez & Ferris, 1997).

In addition to addressing the needs of writers and editors, as described above, the current study extends the body of research supporting writing instruction for students with EBD called
for by Lane (2004). It also answers the call for research that combines multiple facets of the writing process, in this case planning, revising a plan and writing (Troia, 2006). The unique placement of the revision step, between planning and composing, makes this study an important contribution to the literature, as no evidence has been found of research examining revision at the planning stage with students with disabilities. Finally, this may the first study in which the primary traits of the writing strategy are directly linked to the questions on the peer revision guide, remediating deficits in writing knowledge that hamper substantive revision.

This study used the SRSD instructional model to teach students with EBD the POW + TREE persuasive writing strategy and the LEAF peer revision strategy. This study aims to examine the effects of these two strategies individually, in terms of their effects on holistic quality, primary traits, and length. Further, this study aims to compare and contrast the effects of individual versus peer revision on holistic quality, primary traits, and length.

In the area of revision, both independent (i.e., students revising without peer assistance) and peer revision will be examined. This study aims to examine the ability of students to evaluate a plan, identify the need for revision, and make appropriate and effective recommendations and changes. Changes authors make during independent revision phases, before and after revision instruction, will be evaluated in terms of the number of changes, and the quality effect of the changes. Next, the peer revision conditions will be evaluated in terms of the number of recommendations made by peer editors, the quality of those recommendations, and finally, the degree to which authors incorporated the recommendations made by their peer editors into their final response. In addition to these primary questions, this study will further examine participants’ perception of the instruction they received in terms of its effectiveness and usefulness in their school work. Finally, a standardized measure administered before and after
instruction and assessment will evaluate the effect of these writing interventions on writing fluency. The following research questions were addressed:

1. What are the differences between responses completed prior to instruction in SRSD for POW + TREE compared to responses written following instruction in terms of (a) the quality of the persuasive quick write, (b) the number of primary traits included in the quick write, and (c) the number of words written?

2. What are the differences between responses completed following SRSD for POW + TREE compared to responses written following instruction in POW + TREE + LEAF in terms of (a) the quality of the persuasive quick write, (b) the number of primary traits included in the quick write, and (c) the number of words written?

3. What were the quality ratings of changes made during independent revision?

4. What were the quality ratings of written feedback provide to authors by peer editors?

5. Did authors utilize the feedback they received from peer editors?

6. Were the strategies perceived as useful to the participants?

7. Did strategy instruction in persuasive writing and peer revision affect writing fluency?
Chapter 2

Review of the Literature

The two instructional approaches implemented in the current study: (a) Self-Regulated Strategy Development (SRSD) writing instruction for students with emotional behavioral disorders (EBD) and, (b) reciprocal peer revision, have been established as effective for improving student writing outcomes. This review of literature first examines SRSD for students with EBD, and then literature focused on reciprocal peer revision. A full review of the peer revision literature for students with a variety of disabilities is included in Appendix B.

SRSD for Students with EBD

SRSD instruction supports students’ independent self-regulated performance in writing. The model, developed by Graham and Harris (1993), promotes cognitive and self-regulation strategies to help students complete complex tasks efficiently and successfully. The results of SRSD instruction have been successfully maintained over disability groups, grade level, and instructional settings (Taft & Mason, 2010). Four studies implementing SRSD included students identified with or at risk for EBD were identified by Mason and Taft (2010) in a review of story and persuasive writing studies for students with disabilities other than learning disabilities (Adkins, 2005; Mason & Shriner, 2007; Lane, Graham, Harris, Little, & Sandmel, 2010; Lane, Harris, Graham, Weisenback, & Morphy, 2008). Mason and colleagues more recently published the finding of three SRSD for quick writing studies for students with disabilities, including students with EBD (Mason, Kubina & Taft, 2010; Mason, Kubina, Valasa, & Cramer, 2010).

Overview of studies. These seven studies implemented instruction using recommended best practices for SRSD (Harris, Graham, Mason, & Friedlander, 2008). Four components of
self-regulation were imbedded within the model: goal setting, self-monitoring, self-instruction, and self-reinforcement. Pacing was based on mastery at six stages of strategy acquisition: (a) develop pre-skills and background knowledge, (b) discuss the strategy, (c) model the strategy, (d) memorize the strategy, (e) support guided practice, and (f) independent practice. Scaffolding supported smooth transition of responsibility for the use of the strategy and self-regulation components from teacher to student. The combination of self-regulation components, six stages of strategy acquisition and teacher support and guidance, promoted students’ attention to using writing strategies effectively.

Participants in the seven studies included students in second through eighth grades, with disabilities primarily in EBD. Some students were identified with secondary disabilities in LD and Attention Deficit Hyperactivity Disorder (see Table 1). Instruction took place in inclusive classrooms (Lane et al., 2010; Lane et al., 2008; Mason & Shriner, 2007), resource rooms (Mason et al., 2009), and alternative or self-contained settings (Adkins, 2005; Mason et al., 2010). The studies shared four design elements. Each used a single subject multiple baseline design to compare pre- and post-instruction writing in one of two genres: stories (Adkins, 2005; Lane et al., 2010; Lane et al., 2008), or persuasive writing (Mason et al., 2009; Mason et al., 2010; Mason & Shriner, 2007).

**Effects on writing.** Each study included measures of primary traits, quality, and length (Table 2). The standard literacy conventions necessary for specific text structures are reported as primary traits. A good story, for example, should include character, setting, and event elements. A good persuasive response includes a clear declaration of the author’s position, reasons for that
Table 1.

**Demographics of SRSD writing studies including students with EBD**

<table>
<thead>
<tr>
<th>Author</th>
<th>n</th>
<th>Disability (s)</th>
<th>Grade</th>
<th>Gender</th>
<th>Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adkins (2005)</td>
<td>3</td>
<td>EBD, ADHD, PTSD,</td>
<td>2, 3</td>
<td>M = 2</td>
<td>Self contained</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adjustment Disorder,</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Anxiety Disorder</td>
<td></td>
<td>F = 1</td>
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<tr>
<td>Lane, Graham, Harris, Little,</td>
<td>13</td>
<td>At Risk for EBD</td>
<td>2</td>
<td>M = 8</td>
<td>Inclusive</td>
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<tr>
<td>Sandmel, &amp; Brindle (2010)</td>
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<td></td>
<td></td>
<td>F = 5</td>
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<tr>
<td>Lane, Harris, Graham, Weisenbach,</td>
<td>6</td>
<td>At Risk for EBD</td>
<td>2</td>
<td>M = 5</td>
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<tr>
<td>Brindle, &amp; Morphy (2008)</td>
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<td></td>
<td>F = 1</td>
<td></td>
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<tr>
<td>Mason, Kubina, Taft (2009) *</td>
<td>6</td>
<td>ADHD, LD, OHI</td>
<td>7</td>
<td>M = 4</td>
<td>Resource room</td>
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<td>F = 2</td>
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</tr>
<tr>
<td>Mason, Kubina, Valasa, &amp; Cramer</td>
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<td>ADHD, LD, OHI</td>
<td>7</td>
<td>M = 4</td>
<td>Resource room</td>
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<td></td>
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<td>F = 6</td>
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<tr>
<td>Mason &amp; Shriner (2008)</td>
<td>6</td>
<td>EBD, OHI, LD, At Risk for EBD</td>
<td>2, 3,</td>
<td>M = 5</td>
<td>Inclusive therapeutic program</td>
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<td>F = 1</td>
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<td>Total</td>
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<td>M = 32</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>F = 17</td>
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</table>

* Mason, Kubina and Taft (2009) reported results of two studies in one paper

Note. n = Number of students, EBD = Emotional Behavioral Disorder, LD = Learning Disabilities, OHI = Other Health Impairments, ADHD = Attention Deficit Hyperactivity Disorder, PTSD = Post Traumatic Stress Disorder; M = Male, F = Female, * = not all reported.
Table 2.

*Design elements of SRSD writing studies with students with EBD*

<table>
<thead>
<tr>
<th>Author</th>
<th>Primary traits (SD)</th>
<th>Quality M (SD)</th>
<th>Length/word count M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline  Posttest</td>
<td>Baseline  Posttest</td>
<td>Baseline  Posttest</td>
</tr>
<tr>
<td>Adkins (2005)</td>
<td>1.93 (.40)</td>
<td>.90 (.27)</td>
<td>7.70 (1.35)</td>
</tr>
<tr>
<td>Lane, Graham, Harris, Sandmel, &amp; Brindle (2010)</td>
<td>1.37 † (1.58)</td>
<td>1.32 † (.50)</td>
<td>26 † (14.51)</td>
</tr>
<tr>
<td>Lane, Harris, Graham, Weisenbach, Brindle, &amp; Morphy (2008)</td>
<td>1.97 † (1.47)</td>
<td>1.70 † (1.53)</td>
<td>22.34 † (15.49)</td>
</tr>
<tr>
<td>Lane, Harris, Graham, Weisenbach, Brindle, &amp; Morphy (2008)</td>
<td>1.46 † (.96)</td>
<td>2.15 † (1.00)</td>
<td>18.55 † (10.22)</td>
</tr>
<tr>
<td>Mason, Kubina, Taft (2009) *</td>
<td>3.12 (1.34)</td>
<td>3.42 † (1.35)</td>
<td>83.58 † (15.12)</td>
</tr>
<tr>
<td>Taft (2009) *</td>
<td>3.86 (1.41)</td>
<td>3.39 † (1.95)</td>
<td>78.37 † (18.09)</td>
</tr>
</tbody>
</table>
position, explanations to support the reasons and other elements. The expected characteristics of the genre and standard writing conventions define quality. Scoring is generally based on criteria defined in a rubric and might include conventions such as clarity, organization, or thematic salience. The number of words written (word count), objectively quantifies the length of a writing sample.

**Quality.** Writing quality, a highly subjective measure, is a complex combination of characteristics (e.g., organization, clarity, cogency, vocabulary, standard writing conventions). Scoring is generally based on criteria defined in a rubric (Fitzgerald, 1987). Younger students who wrote short, incomplete responses at baseline, had low quality, primary trait and word count scores, suggested limited pre-existing knowledge. Following SRSD instruction, writing samples of second through fifth grade students increased substantially in all three measures, across all four studies (Adkins, 2005; Lane et al., 2010; Lane et al., 2008; Mason & Shriner, 2007). Results provide strong evidence that SRSD-based instruction in story and persuasive writing promotes effective writing in young students with EBD.

| Mason, Kubina, & Cramer (2010) | 7.61 (1.25) | 9.32 (.66) | 3.72 (.54) | 6.6 (.42) | 120.67 (41.09) | 104.4 (14.3) |
| Mason & Shriner (2008) | .47 (.06) | 4.55 (2.36) | .07 (.26) | 4.44 (2.63) | 10.14 (.01) | 68.11 (52.44) |
| Mason & Shriner (2008) | 8 - 9 yrs. * | 2.39 (.98) | 5.51 (.90) | 2.17 (.90) | 4.89 (.87) | 33.25 (13.14) | 65.78 (21.03) |
| Mason & Shriner (2008) | 10 - 12 yrs. | 2.39 (.98) | 5.51 (.90) | 2.17 (.90) | 4.89 (.87) | 33.25 (13.14) | 65.78 (21.03) |

Note: † = means calculated from reported student means, * = means for this group were skewed by one student's refusal to perform in post-testing.
For older students, with more sophisticated metacognitive knowledge of writing, research results inform writing instruction differently. The presence of primary traits and adequate length did not assure high quality. Students who wrote prolifically at baseline did not write substantially higher quality persuasive responses (Mason et al., 2010). Mason reported that one student, Walter, wrote $M = 165$ (SD = 44.40) words and included most of the primary traits earning $M = 9.17$ (SD = 1.94) on a 10-point scale at baseline. His quality score, however, was $M = 4$ (SD = 0.89) on a 7-point holistic scale. In contrast, Walter’s classmate Neil, wrote a $M = 79$ (SD = 20.20) words, and included only $M = 6.38$ (SD = 0.92) primary traits at baseline. Neil’s quality score $M = 4.13$ (SD = 1.25) was higher than Walter’s quality score, despite producing less text. Among other participants, similar between subject comparisons can be made.

**Primary traits.** For most students, limited criteria knowledge resulted in low baseline scores. Three studies implemented a seven-point primary traits criterion for the story writing strategy W-W-W, What = 2, How = 2 (Adkins, 2005; Lane et al., 2010; Lane et al., 2008). The seven primary traits were Who, When, Where, What happened, What happened next, How did the story end, How did the character feel. Mean baseline primary trait scores for second and third grade students ranged from 0 to 4. Post-instruction scores demonstrated growth in the number of primary traits with scores ranging from 3 to 7.

The criterion for primary traits in the persuasive writing strategy POW + TREE varied. Three levels of the strategy are available based on participant age and ability. For students in second through fifth grade, the strategy includes five parts: topic sentence, three reasons, and an ending (Mason & Shriner, 2007). Seventh grade students received instruction in the 7-Part TREE which included a topic, three reasons, three explanations, and an ending (Mason et al.,
Seventh and eighth grade students received instruction in an expanded 10-Part TREE, adding a counter argument and a statement refuting the counter argument (Mason et al, 2010).

**Number of words written.** Baseline number of words written ranged from six words written by a second grade student (Adkins, 2005) to 165 words written by a seventh grade student (Mason et al., 2010). Younger students (Adkins, 2005; Lane et al., 2010; Lane et al., 2008; Mason & Shriner, 2007) wrote less than older students (Mason et al., 2009; Mason et al., 2010). The greatest increase in words written was reported in writing samples of students who wrote ten or fewer words at baseline (Adkins, 2005; Mason & Shriner, 2007). With few exceptions, researchers reported post-instruction increases in word counts ranging between 0.3 and 12-times baseline counts. Several students decreased or maintained word count between baseline and post-instruction (Lane et al., 2010; Mason et al., 2010).

Based on the finding of these seven studies, several conclusions can be drawn relative to the effectiveness of the SRSD instructional model for teaching writing to students with EBD. For young writers, SRSD instruction can support increased knowledge of story structure and persuasive elements. Self-regulation components help students apply the strategy and monitor their progress throughout the writing process. Instruction that includes what to write and how to write it, results in young students writing more complete, higher quality stories and persuasive responses. For older students who may have an increased understanding of writing criteria, SRSD instruction helps them to be more efficient writers. Following instruction, they demonstrated increased refinement and focus in their writing, resulting in clearer, more logical, and higher quality persuasive responses.
SRSD Peer Revision

The use of SRSD instructional model for teaching peer-revision was examined in four studies (MacArthur et al., 1991; MacArthur et al., 1995; Morris Kindzierski, 2009; Stoddard & MacArthur, 1993). In the only peer revision study that included students with EBD, Morris Kindzierski (2009) compared the effects of peer revision to individual revision of descriptive essays written and revised by students with EBD. Teams of students revised with a peer or independently, alternating conditions so that every student produced descriptive essays in each condition. Students were given a choice of two picture prompts and had 12 minutes to describe what was happening in the picture. Students in both conditions edited their first drafts using an editing checklist with six criteria: (a) an interesting beginning, middle and ending sentence, (b) easy to understand, (c) interesting and different words, (d) clear and well organized, (e) boring, and (f) correct spelling and punctuation. In the peer revision condition, students reciprocally evaluated each other's responses. Editors asked writers to orally evaluate the strengths and weaknesses of their own work using the checklist. Editors then selected two of the six areas in need of improvement and made suggestions for improving the essay. Students working in the independent condition evaluated their drafts using the same checklist, but without peer support. Students rotated through both experimental conditions equally, allowing each student an opportunity to practice working independently and with a peer.

Three studies examined the effects of reciprocal peer revision on personal narratives of fourth through eighth grade students in self-contained (MacArthur et al., 1991; MacArthur et al., 1995) and resource classrooms (Stoddard & MacArthur, 1993). In these studies, after drafting, students were taught the Student Editor Strategy to structure specific revising activity, increase student knowledge about revising, and improve overall quality. Instruction was delivered
following SRSD’s six steps of strategy instruction. Students began by writing personal narratives and informative essays on computers, and then revised them with peer support.

Revision was occurred in two phases: substantive and mechanical. Students followed a reciprocal five-step procedure during peer editing: (a) authors read their paper aloud to their editors, (b) editors discussed what they liked best about the essay, (c) the editor reread the paper silently, (d) the editor made notes on editing suggestions, and (e) the editor discussed the suggestions with the author. Student editors identified unclear thoughts and areas where more information would improve clarity and readability. By reciprocally working on papers, the Student Editor Strategy supported cognitive and social aspects of revision while adding structure to the process writing approach. Stoddard and MacArthur (1993) identified four revision questions that guided editors in evaluating their partner’s work:

1. Parts? Does it have a good beginning, middle and ending?
2. Order? Does it follow a logical sequence?
3. Details? Where could more details be added?
4. Clarity? Is there any part that is hard to understand?

A two phase process guided writing and revision. Phase one included writing independent drafts, followed by peer-revision conferences. The first conference focused on substantive revision. Following the conference, authors returned to the computer to consider the editor’s comments and make substantive changes. In phase two, authors returned to editors for mechanical revisions. In the second conference, they discussed the substantive changes they had made and then edited each other's paper for mechanical errors before returning individually to the computers for final editing. The results of these studies are included in a review of the
literature on the effects of peer revision on the writing of students with disabilities. The review identified fifteen studies involving 698 school age students and is included in Appendix B.

**Current Study: SRSD for Persuasive Writing and Peer Revision**

The intervention in the current study combined SRSD for persuasive quick writing, and peer revision. SRSD for quick writing, as noted previously, has been evaluated in three studies (Mason et al., 2009; Mason et al., 2010). A quick write is a short response to a prompt, usually completed in 10 minutes or less (Fisher & Frey, 2008). They are particularly effective for students with a low tolerance for academic challenges, trouble sustaining attention during a task, and low motivation (Mason, Meadan, Hedin, & Cramer, in press), characteristics often found in students with EBD (Lane, 2004). Quick writing in content area classes encourages students to make connections in learning and provides a simple assessment tool. In this study, the SRSD for POW + TREE strategy for persuasive quick write was taught to students with and at risk for EBD.

Students received SRSD instruction in the peer revision strategy LEAF, adapted from the MacArthur and Stoddard (1993), and the MacArthur, Graham, and Schwartz (1991) peer revision strategy. The LEAF strategy is tailored to dovetail with the POW + TREE strategy by incorporating the primary traits and planning points of POW + TREE into the LEAF Peer Revision Guide used by editors to evaluate persuasive plans.
Chapter 3

Methods

Theoretical and experimental work described in the previous chapters informed research design and methods for the current study. A pilot study, conducted in the months preceding the current study, tested the combined instructional strategies and the research design. A complete report of that study is included in Appendix A (Evaluating Effective Writing Instruction for Fourth and Sixth Grade Students with ADHD in a Summer Treatment Program). This study aimed to investigate the effects of strategy instruction in persuasive writing and peer revision on the writing outcomes for middle school students with or at risk for EBD.

Recruitment

This study took place in a once thriving industrial community in the northeastern United States. The closing of major manufacturing industries resulted in a severe economic downturn and widespread unemployment over the past two decades. A non-profit agency with the goal of preserving families and preventing children and adolescents from being placed outside of the home established a presence in the community and became a mainstay of mental health services in the region. The agency operates a private alternative program for students who, as a result of inappropriate behavior, have been unsuccessful in public schools. The program provides educational and treatment services for elementary, middle and senior high school students. The overarching goal of this alternative program is to support students academically, socially and behaviorally. Transition to and from the alternative school is initiated based on progress and the ability to meet goals established in a student’s IEP related to alternative placement.
All seventh and eighth grade students enrolled in the program at the time of this study were invited to participate in a simple screening process. Students unable to write a complete sentence would not be included in the study. Students were given a prompt and asked to write a persuasive response in ten minutes. Students able to write at least one complete sentence (containing a subject, predicate, and communication of a complete thought), but who struggled with a full persuasive response were considered for inclusion (Mason et al., 2010). The Program Director mailed information about the study and consent forms to the families of the seventh and eighth grade students. Nine of ten students returned consent forms. The director and teachers recommended pairings for eight students based on similar ability levels, personal compatibility, and school attendance. The ninth student was not selected by the staff to be placed into a pair because truancy was a serious problem, and transition planning to another placement had begun. He received instruction in the POW + TREE strategy, along with the tenth student who did not return a completed consent, but no data was collected on either of these students.

Participants

Recruitment resulted in four pairs of students entering the study. As previously noted, recommendations for pairings came from the director of the program and the teachers, based on ability level and personal compatibility. Each pair moved through the phases together, receiving instruction and completing assessments. Pseudo names are used to protect the identity of participants and age and diagnosis are presented in terms of the group of participants, again to protect the identity of participants. Information contained in school records varied widely between students as a result of frequent relocations from multiple settings. Participants were between 12-15 years of age, seven of the eight were male, and five were Caucasian and three were African American. According to school records, diagnosis for the eight participants
included Oppositional Defiant Disorder (n = 4), Bi-Polar (n = 4), ADHD (n = 4), Depressive Disorder (n = 3), Asperger’s Syndrome (n = 1), and a variety of disruptive and maladjusted social and behavioral characteristics. Much of the following information about individual participants is a result of observations and interactions with the students and school staff.

**Pair 1: Aaron and Adam**

*Aaron* was an eighth grade student in his first year in the alternative program. He displayed many pro-social behaviors (friendly, quite articulate and very social) but also displayed anti-social behaviors including erratic mood swings, manipulative behaviors, and had a propensity toward aggressive behavior when agitated. He incurred four 3-day suspensions during the four month period of this study for assaulting other students. Academically, Aaron was capable of producing high quality work when he was focused and cooperative. On multiple occasions, he attempted to manipulate the circumstances of his participation trying to dictate when he would be available, how much work would be expected of him, or what work he should be excused from in his regular classroom in lieu of the work he would do for the study.

His records included results from an online TerraNova completed the previous year when Aaron was in seventh grade. His grade equivalent on the reading/writing portion of the test was 3.8, more than three years below grade level. Report cards from the previous year reflected erratic academic performance, both between subjects, and across time, with grades ranging from 65 – 90%. Behavioral reports from the same time period indentified five verbal altercations, eight occasions in which he was not in his assigned area, 34 incidences of repeated non-compliance, five physical altercations, and two incidences of destruction of property.

*Adam* was an eighth grade student very small in stature, showed no obvious sign of physical maturation, and was generally reserved, even shy at times. He had been withdrawn
from public school and placed in the current alternative setting 18-months prior to the beginning of the study. The only writing assessment information contained in his records were his 5th-grade state assessments indicating below basic performance in writing. In contrast, the same assessment reported advanced performance in math. Two years later, when his math was reassessed by the state assessments, (no writing assessment in 7th-grade,) his math rating had dropped to basic, indicating partial mastery of skills, but remedial instruction recommended. Incidences reported in his behavior records included throwing furniture, disrespect toward authority figures, insubordinate/defiant, minor property destruction, fighting, bringing a knife to school, inappropriate or rude social interactions, disruptive classroom behaviors and refusing to work, sleeping in class, and skipping school.

**Pair 2: Ben and Brian.**

*Ben* was a 7th-grade student who was average in size and appearance for his age. He was referred to the alternative placement that school year citing behavior problems at school stemming from a difficult home situation. His records reported 26 behavioral infractions in the five months prior to the start of the current school year and standardized test scores ranked his language abilities from basic to average. Wechsler Intelligence Scale for Children—4th edition (WISC_IV) rated his full scale IQ as 86, or low normal. Formal assessment of his behavior was conducted using the Behavioral Assessment System for Children BASC- 2. Findings from that evaluation indicate that Ben scored clinically significant in areas of aggression and depression, hyperactivity, conduct problems, and attention problems. Findings report that he was restless and over active, and had difficulty controlling impulses. Finding indicated that he displayed behaviors that seem oddly disconnected from his environment, including somatic atypical
behaviors for his age. Finally, he displayed a high rate of inappropriate school behaviors, and had a very negative attitude toward school.

Despite behavioral supports, he continued to struggle in multiple settings. In school, Ben displayed two primary behavioral patterns. At the beginning of the study, he was alert, friendly, generally cooperative, but somewhat fragile. He could shift from cooperative to complete opposition in a matter of minutes, resulting in refusal to work. As the study progressed, his already precarious home setting deteriorated dramatically, launching a downward spiral of behavior in and out of school. In school, he slept much of the time and was generally unproductive. Before the study ended, he was relocated to another county and was not available for the second Woodcock Johnson assessment or the treatment acceptability interview.

Brian was a 7th-grade student with a long history of alternative placements both residential and day treatment. Like his peers, Brian’s behaviors spanned a wide continuum from insightful and dedicated, to oppositional, defiant and violent. His full scale WISC-IV IQ score placed him well into the gifted range, however, his behaviors significantly impeded his academic progress. IEP goals included work completion in a timely manner, increasing positive peer interactions, and compliance with less desirable directives. Daily medications were only moderately effective in controlling verbal and physical outbursts, described in his records as climbing on and throwing furniture, kicking, hitting, biting, and head butting staff.

**Pair 3: Celia and Chaz**

Celia was an 8th-grade student whose standardized assessments placed her below basic in all areas, rankings corroborated by her grades which ranged from C’s to E’s, with a high degree of variability from one grading period to another. Specific IEP goals addressed the need for additional writing instruction to focus on punctuation, and structure of paragraphs and essays.
Even greater concern focused on her social emotional health. Records indicated a long history of inappropriate social interaction with peers, social aggression toward peers, and a history of self-injurious behaviors. At the time of this study, she was being evaluated for self-reported incidences of visual and auditory hallucinations. She had very awkward social interactions with peers and staff, resulting in evaluation for a personality disorder. She displayed a generally flat affect, punctuated by occasional outbursts toward peers, resulting in several suspensions for assault during the period of this study. Toward the end of the study, she was hospitalized and was not available to participate in the final Woodcock Johnson assessment of the treatment acceptability interview.

Chaz was an 8th-grade student with a behavioral support plan addressing a history of oppositional and physically violent behavior. A recent Terra Nova assessment placed him below average across all academic areas except reading, which was further reflected in his grades which ranged between “C” and “F”. His IEP called for the use of graphic organizers when writing essays, making the current intervention especially appropriate for him. While working in the study, he was attentive, cooperative, worked hard and was patient with Celia.

**Pair 4: Darren and Doug**

Darren was a 7th-grade student with a long history of alternative placements ranging from public school to residential treatment facilities. In addition to extensive behavioral goals, his IEP included goals for developing writing—“when given a writing prompt, student will write a paragraph containing a topic sentence, and three supporting details.” In the writing classroom, Darren was fragile, easily agitated and gave up when he experienced minor frustration. Multiple sessions were suspended part way through as a result of his refusal to continue. Often, the following day he would be eager to get started and would work without disruption. He was very
immature, and struggled with appropriate interaction with peers and staff in classroom and during instruction and assessment related to the study.

*Doug* was a male, 7th-grade Caucasian student who was referred to the alternative program during the previous school year for educational issues, disruptive behavior, mood swings, and poor peer interactions. Academically, standardized testing placed Doug below basic in all subject areas, a finding supported by his grades which ranged from “D” to “F”. In addition to extensive goals related to behavior management, Doug’s IEP included a writing goal: “When given a topic, student will be able to write 3 to 5 related sentences with correct capitalization, punctuation, and spelling with no more than 2 errors per sentence.” Additionally, his IEP called for instructional modifications including the use of graphic organizers, modified paper, structured practice interacting functionally with peers. The therapist that worked with him on his nearly illegible handwriting asked that he work with modified paper when writing, per his IEP. He was provided with wide rule paper with shading between lines intended to focus his attention on the height of his letters. In the writing classroom, he generally worked hard but was easily distracted by Darren who was more frequently off task. On several occasions, Doug was medicated to the point that he was unable to participate in the morning and sessions had to be reconvened in the afternoon.

**Measures**

**Writing Assessments.** The quick write assessment sequence across each phase included three steps:

Step 1. Planning a persuasive response

Step 2. Revising the plan before writing

Step 3. Writing the persuasive response
Step 1, planning, began with participants receiving scripted instructions, read aloud by the researcher (see Appendix B for Assessment Directions), and a prompt slip with a choice of two topics. After hearing instructions and prompts read aloud, a timer set for 10 min was started for each student and they began planning. They raised their hand to indicate that they were done planning and their timer was stopped.

Step 2, revision, was untimed and consisted of either independent or peer revision, depending on the phase. During independent revision (Phases A, B and independent portions of Phase D), students were asked to examine their plan and make any changes that would make their plan stronger using a green pen. During peer revision (Phase C and peer revision portions of Phase D) instead of reviewing their own plan, participants reviewed their peer’s plans in a peer conference, guided by the LEAF peer revision guide. After conferencing, authors returned to their work area to independently consider editorial feedback and mark changes on their plan using a green pen.

Step 3, writing, involved developing the plan into a paragraph response. When students completed revisions to their plan, they were given a clean piece of paper and the timer was restarted. They had the remainder of ten minutes to write their response. Students wrote until they finished or the timer ran out.

Writing measures. Completed responses were scored by advanced graduate students for three independent variables: quality, primary traits, and length.

Quality. An 8-point quality rubric (see Appendix D for Quality Rubric) with eight being very high, and one being very low, was used to define quality based on inclusion of various combinations of primary traits and overall organization. For example, an eight indicated a response that was structurally organized into sentences and included a topic/belief, at least three
reasons with explanations, a counter argument plus a statement refuting the counter, and an ending. A midrange score of four indicated a response that was organized into sentences and included a topic/belief, two or more reasons, plus two or more other elements of a persuasive response (i.e. explanation(s), counter reason, ending). A score of one indicated a topic stating the author’s belief with no supporting elements, or a response that argues both sides making the author’s argument unclear. Scores between these three anchor points represented varying degrees of complexity. Previously developed anchor papers representing the top, middle and bottom of the scale were used to train and guide scorers (e.g., Harris et al., 2006; Saddler et al., 2004). The use of quality measures developed around anchor points has been previously validated in a number of studies with reliability over 80% (De La Paz & Graham, 1997; Harris et al., 2006; Mason & Shriner, 2008; Saddler et al., 2004; Stoddard & MacArthur, 1993).

**Primary traits.** Written prompts were scored for six primary traits, or standard components of persuasive responses: topic, reasons, explanations, counter argument, a statement refuting the counter argument, and an ending (Mason, Kubina, Valasa, & Cramer, 2010). Responses were awarded one point for each primary trait included. Some traits (topic, counter argument, statement refuting counter argument, and ending) appear just once in a response, earning a single point each. Other traits, (reasons and explanations), earn one point for each inclusion. There is no limit to the number of reasons and explanations a student might include therefore, there is in no ceiling effect for this measure

**Number of words written.** Essays were typed using Microsoft WORD, and the word count function generated totals for the number of words written. Each response was checked for typing errors or anomalies that might alter word count.
**Revisions.** Revisions were evaluated for the quality of the feedback offered by peer editors, the quality of revisions made without the benefit of peer editors, and finally, the degree to which authors utilized revision information received during peer conferences.

**Number of revisions.** Frequency counts reflects the number of revision recommendations or changes marked on plans during independent revision or marked on peer revision guides during peer conferences.

**Quality of revisions.** Each recommendation was evaluated for the effect it had on quality based on 3-point scale. Each recommendation was considered individually and assessed using a quality rubric ranging from 0 – 2 (see Appendix E for Peer Feedback Quality Rubric) based on the degree to which the recommendation influenced quality of the plan (C. A. MacArthur, personal communication, May 18, 2011). A rating of 0 indicated that the recommendation made no significant improvement to the plan because it was either unrelated to the topic, too vague to be useful, or was redundant. A recommendation rated a score of 1 made moderate improvement to the plan by adding new information vaguely related to the argument, or clarifying existing information. Finally, a recommendation rated a score of 2 made a substantial improvement to the plan because it either added new information to the argument, or added a new primary trait.

**Use of revision feedback.** Author’s use of feedback was measured by a simple frequency count. For each assessment, the number of revision recommendations were counted, and final responses were read to determine if the author incorporated the revision.

**Treatment acceptability.** Student perception of the acceptability and usefulness of the POW + TREE and LEAF strategies was assessed descriptively through individual interviews conducted by the Alternative Program classroom teacher. Students were asked the following questions: (a) *Do you think students your age should be taught POW + TREE?*; (b) *Was POW +
TREE helpful for you when you were planning; (c) Was POW + TREE helpful for you when you were writing?; (d) Was POW + TREE helpful for you when you were revising?; (e) What part of POW + TREE was most helpful?; (f) Did you think it was helpful to get advice from other students about your writing?; (g) Did that advice make your writing better, and if so, how?; (h) Would you rather revise alone or with another student?; (i) Did using LEAF improve your writing?; The questions related to POW + TREE had been previously validated in other SRSD studies, and the questions related to LEAF were modeled closely after the same format (Harris et al., 2006; Mason & Shriner, 2008; Mason et al., 2009; Mason et al., 2010). Interviews were recorded and later transcribed, with answers reported descriptively in the results section.

**Writing fluency.** The Woodcock-Johnson III Test of Achievement writing subtest (Woodcock & Johnson, 1990) was used to measure writing fluency before and after instruction. Results of that assessment were scored by an advanced graduate student with prior training in scoring that assessment.

**Research Design**

A multi-probe, multiple baseline, across participants design (Kazdin 1982) was paired with an alternating treatment (A-B-C-D) design (Kennedy, 2004) to evaluate individual student performance before and after instruction. Combining multiple baseline and alternating treatment designs increases the rigor of experimental control while providing an opportunity to compare and contrast the effects of two treatment variations (Kazdin, 1982; Kennedy, 2004). Alternating treatment designs have been validated in a number of studies examining the effects of peer mediation by alternating individual and peer mediated assessment (Bowman-Perrott, Greenwood, & Tapia, 2007; Kamps, D. M., Greenwood, C., Arreaga-Mayer, C., Baldwin

Data collection, based on assessments, occurred across four phases. During Phase A, baseline performance was established prior to instruction. Performance trends were examined for stability to be sure that students were not receiving instruction outside of the study that influenced participant’s writing. Quality and primary traits were assessed for each response and trends were evaluated for stability. The decision to move into the first instructional phase was based on a consistent, stable baseline performance. Baseline assessments continued until a stable or consistent pattern of performance was established. Each participant completed at least five writing assessments with additional assessments used as need if consistency was not achieved in the first five assessments. While some participants presented erratic performance, as opposed to stable performance, no participants demonstrated a consistent trend toward growth during baseline. Instructional sessions were offered each day that school was in session, but due to snow cancellations, student absences and suspensions, willingness to participate on a given day, the length of phases varied between pairs. Both students in the pair had to be in attendance and willing to work for instruction to occur. Following the multiple baseline design, the first pair to enter Phase B and receive POW + TREE instruction was Pair 1: Aaron and Adam, who entered Phase B after a week of baseline assessments. Baselines for the remaining pairs continued while Pair 1 was receiving instruction in POW + TREE. When Pair 1 independently wrote a response containing 80% of the primary traits (8 of 10), Pair 2 was moved into instruction, while Pairs 3 and 4 continued in baseline, and so on, until all four pairs of participants were into the instructional/assessment sequence.
In Phase B, pairs of participants received five lessons in the SRSD POW + TREE persuasive quick writing strategy, with additional sessions for practice as needed. Only Pair 4: Darren and Doug required additional practice to achieve 80% of mastery. Lessons were followed by three independently planned, revised and written persuasive quick write assessments.

In Phase C, pairs of students received four lessons in the SRSD LEAF peer revision strategy followed by three independently planned, peer revised and independently written persuasive quick write assessments.

In Phase D, assessments alternated between quick writes that were revised independently and quick writes revised with a peer. Each condition was assessed three times in Phase D. Students followed the same directions as in Phase B or Phase C respectively.

Materials

Many of the instructional materials used in this study were previously validated in other SRSD for POW + TREE studies (i.e., Mason et al., 2009; Mason et al., 2010), and in the pilot study conducted immediately prior the current study (Mong Cramer, 2011). The graphic organizers, mnemonic charts, and the learning contract used in the POW + TREE lessons are from the aforementioned Mason studies. The graph used to record the number of primary traits was adapted to reflect local interests. LEAF revision materials were designed by the first author and modeled after the POW + TREE materials. Lesson plans for POW + TREE instruction were from the Mason et al. (2010) study with only minor modifications to accommodate paired instruction and longer instructional sessions. LEAF Peer-Revision plans were modeled after the SRSD instructional sequence, and the POW + TREE plans.
Writing prompts were compiled from persuasive topics used in previous studies (Mason et al., 2009; Mason et al., 2010; Mastropieri, Scruggs, Cuenca-Sanchez, Irby, Mills, Mason, & Kubina, 2010), and published prompt lists (Learning Express, 2003). A pool of 24 prompts were arranged into pairs. A subset of prompts was removed from the total pool and reserved for the C phase. The remaining prompts were counter balanced across phases A and B. The subset reserved for phase C were divided and set aside to assure that during peer conferences, neither student had the advantage of previous experience with a topic. Multiple computer randomizations (www.randomizer.org) determined the order of prompt topics for each student across and within all phases.

**Intervention Procedures**

**SRSD Instruction.** Pairs of students received instruction in the SRSD for *POW + TREE* strategy for persuasive quick write (Mason, Kubina, Valasa, Cramer, 2010) and the SRSD for *LEAF* revision strategy, modified from a previously validated reciprocal peer revision strategy (Stoddard & MacArthur, 1993). During the pilot study, meeting the wide ability range in small group instruction proved to be challenging. Instruction in pairs allowed for homogenous grouping and more efficient and individualized attention. Each pair of students participated in two phases of instruction offered in 45 min sessions, five days a week, and four phases of assessment ranging from 15 to 45 min according to the following schedule.

(A) Baseline: 5 persuasive quick write assessments with individual revision

(B) *POW + TREE* persuasive quick write with independent revision: 5 lessons, 3 assessments

(C) *POW + TREE + LEAF* peer revision: 4 lessons in LEAF, 3 quick write assessments with peer revision
(D) Alternating Treatment: 3 quick write assessments with independent revision and 3 quick write assessments with peer revision

**Phase A.** Present level of performance was established using baseline assessments as previously described.

**Phase B.** Phase B consisted of five lessons in SRSD for POW + TREE, followed by three assessment prompts (see Appendix F for complete POW + TREE lesson plans).

**POW + TREE Lesson 1.** The purpose of the first lesson was to activate background knowledge and discuss POW + TREE. The teacher led a discussion on the meaning of the words *persuasive* and *strategy* and encouraged students to discuss their prior experience with using strategies. Students were introduced to the POW + TREE mnemonic (see Appendix G for POW + TREE Mnemonic Chart). The teacher provided students with a prewritten sample and worked collaboratively with the students to identify and underline TREE primary traits in the sample response. The teacher modeled filling in the POW + TREE Planning Organizer (See Appendix H for POW + TREE Planning Organizer) using the primary traits from the sample. She then modeled counting the primary traits in the sample, and demonstrated how to graph the traits on an organizer (see Appendix I for Graphing Organizer). Finally, participants examined one of their own baseline samples to identify primary traits and graphed the results. The teacher reassured students that they would have far more primary traits after learning the “trick” for writing a powerful persuasive response. Lesson one wrapped up with the teacher and participants signing a learning contract (see Appendix J for Learning Contract) with the participants agreeing to do their best to learn the strategy and write a response with ten parts, and the teacher agreeing to do her best to teach them. Students began memorizing the POW + TREE mnemonic in lesson one.
POW + TREE Lesson 2: Model. The teacher explicitly modeled the POW + TREE strategy introducing the four components of self-regulation: goal setting, self-monitoring, self-instruction, and self-reinforcement (see Appendix K for Self-Regulation Diagram), and a table of transition words (see Appendix L for transition words). As the teacher worked, she modeled self-talk, internal thoughts not intended for communication with others, so students could hear how experienced writers process their thoughts while working. Following the lesson, the teacher and students discussed self-talk and students generated their own encouraging self-statements to use as they worked and recorded them on self-statements sheet (see Appendix M for POW + TREE Self-Statements).

POW + TREE Lesson 3: Collaborative practice. Students and teacher collaboratively planned and wrote two persuasive responses. First, the teacher took the lead, with students helping to brainstorm and generate ideas. As the teacher created a planner, students completed individual planners. Together they counted and graphed the primary traits on the teachers graphing chart. Next, students were given a choice of two topics and practiced planning, with the teacher providing needed guidance to assure success. During both collaborative exercises, students were encouraged to incorporate transition words and more interesting vocabulary, as well as reference their positive self-statements.

POW + TREE Lesson 4: Guided practice. Scaffolded support gradually shifted responsibility from teacher to participant as students gained competence and confidence. The teacher weaned dependence on the pre-printed planner and support materials by demonstrating how to create a planner using pencil and paper. This important step promoted generalization of the strategy to other settings. Again, students were encouraged to consider where they could add
more notes or interesting vocabulary before writing. Guided practice continued until students were able to write a complete response with minimal teacher support.

**POW + TREE Lesson 5: Independent practice.** Finally, in the last lesson, students planned and wrote independent responses, without support from the teacher. The teacher then modeled the quick write by incorporating the component of time. She demonstrated planning and writing a response in ten minutes. Students then practiced writing a response in ten minutes. The final POW + TREE lesson was followed by three independently planned, revised and written assessment responses, as previously described, following the same procedures as baseline.

**Phase C.** Phase C consisted of four lessons in SRSD for LEAF peer revision strategy followed by three assessments consisting of individual planning, peer revising, and individual writing. LEAF is a structured peer revision strategy for guiding young writers to provide meaningful feedback. In this study, having peers evaluate each other’s plans, looking for inconsistencies or missing information prior to writing, is intended to help the author organize and clarify their thoughts before writing a response. Peers may also support each other in idea generation by helping each other brainstorm ideas to address missing information. Complete lesson plans are attached (see Appendix N for LEAF Lesson Plans).

**LEAF Lesson 1: Activate background knowledge.** The first LEAF peer revision lesson focused on prior experience with feedback and activated prior knowledge about how that feedback made them feel about their writing. The teacher led a discussion of the social dynamics of peer feedback, and introduced the terms specific, constructive, and appropriate as guidelines for providing appropriate feedback that was useful to authors. The key words specific, constructive and appropriate were discussed at length. Students evaluated examples and non-
examples of specific, constructive and appropriate feedback by reviewing feedback samples provided by the teacher (See Appendix O for Feedback Samples). The teacher read each example with exaggerated tone, and students respond with thumbs-up for good feedback, or thumbs-down for bad feedback. Each example was analyzed the teacher and participants collaboratively identified the characteristics that did or did not make each sample specific, constructive and appropriate. The teacher introduced the LEAF Mnemonic Chart (see Appendix P for LEAF Mnemonic Chart) and explained the reciprocal nature of POW + TREE and LEAF, and how knowledge of POW + TREE would help them become better editors. Wrapping up the lesson, students completed a learning contract establishing the goal of learning the LEAF strategy and learning how to give specific, constructive and appropriate feedback (see Appendix Q for Learning Contract).

LEAF Lesson 2: Model. The teacher explicitly modeled a peer revision conference by role playing with an imaginary author. The teacher explained feedback from a variety of perspectives. Editors have non- vocalized, private thoughts that may need choose not to share with the author. There may be corrective feedback that would be useful for the author, but may need to be rephrased before sharing. Finally, the editor should find some form of positive feedback for the author. The teacher explained that all praise does not help the author grow and improve their writing, and all criticism discourages authors, and prevents them from exploring new ideas. A good editor finds a balance of both. The teacher introduced the LEAF Peer Revision Guide—a graphic organizer that supports evaluation and discussion between editor and author (see Appendix R for LEAF Peer Revision Guide). After observing the teacher modeling a conference, students wrote revision self-statements to guide their interactions while working as editors (see Appendix S for LEAF Self-Statements).
LEAF Lesson 3: Collaborative and guided practice. Teacher and students discussed the vocabulary used on the LEAF Revision Guide (strongest, persuade, convinced, logical, support, clarity, specific, constructive and appropriate), and practiced editorial skills. The teacher explained the difference between substantive revisions and surface level mechanical edits. Students and the teacher collaboratively completed LEAF Revision Guides based on discussion of the strengths and weaknesses noted in sample plans. Next, students were given a second sample plan and asked to complete the revision guide and practice describing feedback with their partner, as the teacher monitored and offered suggestions. Finally, students practiced with their partner using one of their own previously written plans. In the case of students of students who wrote technically complete plans following POW + TREE instruction, it was important to explain that even a complete plan could be improved with additional reasons, clearer reasons, and million dollar words. Editors were encouraged to look for these opportunities to make their partner’s good plans even better. Conferences were closely monitored for appropriate interaction. Each conference began with the author reading and describing their plan aloud and the editor responding with a positive statement explaining what they liked best, and which reason was strongest. Editors worked individually to complete the remainder of the evaluation and diagnosis of their partner’s work. Authors and editors came back together to discuss their feedback and recommendations. Authors considered the feedback they had received and marked changes that they believed would improve their final draft on their plan. The teacher made it clear that editor’s comments were suggestions, not mandates, and final control of content remained with the author.

Lesson 4: Independent Practice. In the final lesson, students practiced the full range of planning, revising and writing a persuasive response. Authors and editors met for conferences.
Again, following the conference, authors considered their editor’s feedback and marked the changes they wanted to incorporate. Following instruction in the LEAF strategy, students planned, revised with a peer, and wrote three persuasive responses.

**Phase D.** This phase consisted of alternating between quick writes written with independent revision and quick writes written with peer revision, for a total of six assessments. Directions for assessment were the same as for Phase B (independent) and Phase C (peer revision).

**Instructional Treatment Fidelity**

Treatment fidelity was maintained during and after lessons in three ways. First, during lessons the teacher self-monitored highlights and key points by using a checklist incorporated into the lesson plans. Second, lessons were audio recorded and 30% of the lessons were reviewed by an advanced graduate student using the lesson plan checklist. Instructional fidelity was 98%, calculated by dividing the number of key instructional elements heard in the recording by the number of total elements, and multiplying by 100. Finally, instruction was delivered by dual certified general and special education teacher with ten years of teaching experience in general and special education settings. Additionally, the teacher was familiar with the content of the lessons from previous studies involving POW + TREE, and LEAF, and had taught the SRSD strategy POW + TREE in the college classroom. Assessments fidelity was maintained using scripted instructions during each phase.

**Scoring.** Codes were assigned to mask student identity and assessment phase. Three advanced graduate students, previously trained in scoring for quality and critical parts, and blind to the purpose of the study, scored typed responses. Training was conducted in a three hour session under the supervision of L. H. Mason, the primary investigator of Project SPLED which
partially funded this study. Graduate student scorers received instruction in rating the number of parts and quality of persuasive responses. Scorers practiced by rating previously written responses until they achieved 95% reliability over 10 responses.

Revisions were scored by two doctoral level special education researchers blind to the purpose of the study. Training occurred during a 30-min session in which the scorers were oriented to the rubric and given the opportunity to ask qualifying questions and discuss examples. Reliability on training samples was 100%. Disagreements during scoring were resolved by using the lower of the two scores.

**Inter Observer Agreement.** Reliability for quality of finished response and primary traits was established by having 33% of the responses scored by two scorers. Disagreements greater than one-point were resolved by discussion between the two scorers, leading to consensus. Percentage of agreement was calculated as follows: \[\frac{\text{Agreements}}{\text{Disagreements} + \text{Agreements}} \times 100\]. Agreement for the number of primary traits was 87%. Agreement for finished response quality was 85%. Agreement for revision recommendations was calculated using the same formula and was 79%.

**Analysis.** Kazdin (1982) describes visual analysis of single case data as “reaching a judgment about the reliability or consistency of intervention effects by visually examining graphed data” (p. 232). Visual analysis (i.e., level, trend, and variability) allows for clear observation of change within subject—the unit of analysis in single-case design—between baseline and the phases of instruction. Individual performance was further analyzed through calculation of means and standard deviations by experimental phase. Again, because the unit of analysis in single-case design is the individual, the most informative numbers are those comparing the individual’s baseline to post-instruction performance.
Revision recommendations were analyzed descriptively in terms of frequency, quality and implementation. A simple frequency count measured (a) the number of changes made by individuals, (b) the number of recommendations made by peer editors, and (c) the number of recommendations made by peer editors that were implemented by authors. Revisions were analyzed descriptively using a comparison of frequency count and means across phases and conditions.

Descriptive analysis was used to describe the types of feedback students provided, the effects of behavior during instruction and assessment, and treatment acceptability. Types of feedback was gathered from the peer revision guides, and interviews were conducted to assess treatment acceptability. Results are organized below under headings relative to the original research questions.
Chapter 4

Results

Graphs representing data in this single case study are arranged by instructional pairs and analyzed by individuals across phases allowing for close visual analysis of trends and variability within individuals. Holistic quality of quick writes at each assessment can be seen in Figure 1 and Table 3. Quality means and standard deviations for individuals by phase can be seen in Table 4. The number of primary traits included in each quick write assessment can be seen in Figure 2 and Table 5. Primary trait means and standard deviations for each individual, during each phase, can be seen in Table 6. Length, measured as number of words written in a quick write, can be seen in Figure 3 and Table 7 for individual assessments, and Table 8 for means and standard deviations across phases. Due to the small population in single case designs, means and standard deviations are useful for numeric comparison purposes but are not intended to provide evidence of significance or to validate hypothesis. Findings will be discussed as they apply to questions guiding the current study.

Phase A: Baseline

During Phase A, each participant completed five baseline assessments establishing a present level of performance prior to instruction. Each participant’s scores were analyzed in terms of stability. A dramatic increase in scores could indicate that the student was receiving instruction in persuasive writing outside of the study. Moving participants from Phase A to Phase B was based on stability of baseline scores within a narrow range, or declining scores.

Quality. Aaron and Adam each wrote moderate quality baselines with scores ranging from 3 to 6. Aaron’s scores ranged from 3 to 5, with an increase in the second assessment to 5, followed by a drop to a score of 3 that remained steady for three consecutive assessments, at
which time, he entered phase B. Adam’s baseline quality pattern followed Aaron’s with an increase to 6 in the second assessment, followed by a decrease to 4 for three consecutive assessments, at which time he entered Phase B.

Ben and Brian both produced very stable quality baselines within one point with a quality range of 2 to 4. Ben score a 3 on the first three assessments, and dropped to a 2 on the last two assessments. Brian scored a 4 on the first three assessments, followed by a drop to 3 in the last two assessments. Both participants entered Phase B following the fifth assessment.

Celia and Chaz’s quality baseline scores ranged between 2 and 5. Celia started with a quality score of 4, then dropped to a 2 for the second and third assessments, then went up one point to a score of 3 for the final two assessments. Chaz started relatively high compared to other participants, with a score of 5, then dropped one point to a 4 for the next four consecutive assessments. Both participants entered Phase B following the fifth assessment.

Darren and Doug’s quality baseline scores were also relatively stable. Darren’s quality baselines ranging from 2 to 4 and fluctuated within that range, but never varying by more than one point from one assessment to the next. Following five assessments within the same range, he entered Phase B. Doug’s scores ranged from 1 to 3, starting low at 1, increasing to a 3 for three consecutive assessments, and then dropping to 2, at which time, he entered Phase B.

**Primary Traits.** The number of primary traits an author might include is unlimited and therefore there is no ceiling effect in this measure. As previously described, the POW + TREE strategy calls for a minimum of ten primary traits (topic sentence, reasons three or more, an explanation for each reason, a counter argument, a statement refuting the counter argument, and an ending).
For some participants, upward and downward trends of primary traits were similar to the quality trends. Five of the eight participants, Aaron, Ben, Celia, Darren and Doug, had primary traits means ranging from 2.20 (1.30) to 5.00 (1.58), half or less of the basic components needed for a complete persuasive response (see Figure 2 and Tables 6 and 7). Primary trait scores for Brian (range 4 to 9) showed more variability in upward and downward trend than his quality scores (range 2 to 4). Chaz’s primary traits scores (range 6 to 11) also showed more inconsistency than his quality scores (range 4 to 5). Both participants ended baseline with a downward trend in terms of primary traits. Adam, Brian, and Chaz had mean baseline scores of 7.20 (2.68), 6.00 (2.12) and 8.00 (2.35), however the primary traits that they chose to include did not directly correlate to quality during baseline. Adam and Chaz both wrote responses during baseline with 10 and 11 primary traits respectively. Adam’s score of 11 resulted in a quality score of 6, and Chaz’s 10 and 11 primary traits both earned quality scores of 4. Brian’s highest primary trait score at baseline was a 9, but his highest quality score in baseline was 4.

**Number of words written.** The number of words followed similar patterns of upward and downward trend as observed in quality and primary traits, and were relatively stable across baseline, except for Aaron and Adam. Both had word counts that spiked in the second assessment, but then dropped and remained relatively stable. Adam’s number of words written was the widest range seen in this study, ranging from 49 to 142 words in baseline. His highest word count, 142 words earned his highest quality score of 6, however, his next highest word count, 123 words, earned a quality score of 4, as did his word counts of 64, 52, and 49. The remaining participants had remarkably stable trends in word count across baseline. For example, Ben, Celia, and Doug wrote baseline responses that ranged from 14 to 60 words, and earned quality scores ranging from 1 to 4. In contrast, Chaz and Darren wrote baseline response ranging
from 80 to 130 words, and the quality of their quick writes ranged from 1 to 5, not considerably different from their classmates who wrote far fewer words. Figure 3 and Tables 8 and 9 provide number of words written, both individual assessments and means and standard deviations across phases.

**Phase B: POW + TREE Post-Instruction**

The effects of SRSD for POW + TREE instruction were examined in quick write performance changes in quality, primary traits, and number of words between Phase A (baseline) and Phase B (POW + TREE instruction with independent revision).

**Quality.** Quality was assessed on an 8-point rubric as previously described. Quick writes increased in quality across all participants between Phase A and B, as seen in Figure 1 and Tables 4 and 5 below. Following SRSD for POW + TREE instruction three participants, Aaron, Adam and Chaz, increased the quality of their quick writes from moderate levels, range 3 to 6 during baseline, to scores of 8 across the three Phase B assessments. While variability during baseline Phase A was minimal, following instruction, their scores were perfectly stable and consistent. Additionally, they nearly doubled their mean scores in baseline, range 3.6 to 4.4, to means of 8 in Phase B. The remaining participants, Ben, Brian, Celia, Darren, and Doug, increased their mean scores in Phase B over Phase A. In fact, all participants wrote at least one quick write that earned a quality rating of 8. Following SRSD for POW + TREE instruction, however, their variability increased markedly. Only Brian and Darren demonstrated immediate improvement in quality but their upward trend was not maintained, as both participants dropped to baseline levels in at least one assessment in this phase. For three participants, their first post-instruction assessment performance was low, matching a baseline score: Ben and Celia at 3 and Doug at 2. Despite a slow start, all three scored an 8 during Phase B, Ben in his second
### Table 3. Holistic Quality

<table>
<thead>
<tr>
<th>Student</th>
<th>Phase A Baseline</th>
<th>Phase B POW+TREE</th>
<th>Phase C POW + TREE + LEAF</th>
<th>Phase D Alternating Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaron</td>
<td>4 5 3 3 3</td>
<td>8 8 8</td>
<td>8 8 8</td>
<td>8 8 8 8 8 8 8 8</td>
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<td>Adam</td>
<td>4 6 4 4 4</td>
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<td>8 8 8</td>
<td>8 8 8 8 8 8 8 8</td>
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<tr>
<td>Ben</td>
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<td>3 8 5</td>
<td>8 6 8</td>
<td>8 8 4 8 8 8 8 8</td>
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<tr>
<td>Brian</td>
<td>4 4 4 2 2</td>
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<td>8 8 8</td>
<td>6 8 8 8 8 8 8 8</td>
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<tr>
<td>Celia</td>
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<td>3 6 8</td>
<td>3 8 8</td>
<td>5 5 8 8 8 8 8 8</td>
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<tr>
<td>Chaz</td>
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<td>8 8 8</td>
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<td>Darren</td>
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</tr>
<tr>
<td>Doug</td>
<td>1 3 3 3 2</td>
<td>2 0 8</td>
<td>8 5 7</td>
<td>5 8 5 7 5 5 5 5</td>
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</tbody>
</table>

Note: Ind = Independent

### Table 4. Holistic Quality Means (SD)

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<tr>
<th>Student</th>
<th>Phase A Baseline Mean (SD)</th>
<th>Phase B POW + TREE Mean (SD)</th>
<th>Phase C POW + TREE + LEAF Mean (SD)</th>
<th>Phase D Alternating Treatment Independent Mean (SD)</th>
<th>Peer Mean (SD)</th>
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<td>8.00 (0.00)</td>
<td>8.00 (0.00)</td>
<td>8.00 (0.00)</td>
<td>8.00 (0.00)</td>
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<td>4.40 (0.89)</td>
<td>8.00 (0.00)</td>
<td>8.00 (0.00)</td>
<td>8.00 (0.00)</td>
<td>8.00 (0.00)</td>
</tr>
<tr>
<td>Ben</td>
<td>2.60 (0.55)</td>
<td>5.33 (2.52)</td>
<td>7.33 (1.15)</td>
<td>6.67 (2.31)</td>
<td>8.00 (0.00)</td>
</tr>
<tr>
<td>Brian</td>
<td>3.20 (1.10)</td>
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<td>8.00 (0.00)</td>
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<td>8.00 (0.00)</td>
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<td>Celia</td>
<td>2.80 (0.84)</td>
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<td>6.33 (2.89)</td>
<td>7.00 (1.73)</td>
<td>7.00 (1.73)</td>
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<tr>
<td>Chaz</td>
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<tr>
<td>Darren</td>
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<td>Doug</td>
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<td>6.67 (1.53)</td>
<td>5.00 (0.00)</td>
<td>6.67 (1.53)</td>
</tr>
</tbody>
</table>
Figure 1.

Quality

Note: I = Independent, P = Peer
assessment and Celia and Doug in the third. Brian, Celia and Darren all increased their mean quality scores by nearly three points in post-POW + TREE assessments. Doug with the highest degree of inconsistency during Phase B (range from 0 to 8) increased his baseline mean of 2.40 (0.89) to a post-instruction mean of 3.33 (4.16).

**Primary Traits.** Following instruction in SRSD for POW + TREE, the mean number of primary traits included in persuasive quick writes increased across all participants. Following instruction in SRSD for POW + TREE Phase B, mean primary trait scores increased by a minimum of 2 points (Chaz and Doug), and as much as 5.8 points (Aaron). Following instruction, the relation between primary trait and quality was more closely correlated, and resulted in similar findings relative to stability and variability. Aaron, Adam and Chaz all had stable primary trait scores at 10, following the POW + TREE mnemonic precisely. Primary trait scores for the remaining participants varied by as much as 10 points in the case of Doug who had a range of 0 to 10, and as little as 2 points in the case of Brian who’s scores ranged from 8 to 10. Celia’s primary trait scores in Phase B presented a steady upward trend with scores of 5, 8, and 10 across the first three post-instruction assessments. Ben’s primary trait scores in the first post-instruction Phase B also indicated a high degree of variability with a range from 4 to 10 in the first two assessments in Phase B, and a 9 to finish the phase.
### Table 5.

*Number of Primary Traits*

<table>
<thead>
<tr>
<th>Student</th>
<th>Phase A Baseline</th>
<th>Phase B POW+TREE</th>
<th>Phase C POW + TREE + LEAF</th>
<th>Phase D Alternating Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Student</td>
</tr>
<tr>
<td>Aaron</td>
<td>5 6 3 3 4</td>
<td>10 10 10</td>
<td>11 12 11</td>
<td>10 10 11 10 10 10 10 10</td>
</tr>
<tr>
<td>Adam</td>
<td>9 11 6 5 5</td>
<td>10 10 10</td>
<td>12 11 10</td>
<td>10 10 10 10 12 11</td>
</tr>
<tr>
<td>Ben</td>
<td>4 4 3 3 4</td>
<td>4 10 9</td>
<td>13 8 14</td>
<td>10 10 8 10 10 10</td>
</tr>
<tr>
<td>Brian</td>
<td>9 6 7 4 4</td>
<td>8 10 8</td>
<td>10 10 10</td>
<td>8 10 10 10 10 10</td>
</tr>
<tr>
<td>Celia</td>
<td>6 4 3 3 4</td>
<td>5 8 10</td>
<td>5 10 10</td>
<td>7 7 10 10 10 10</td>
</tr>
<tr>
<td>Chaz</td>
<td>7 6 10 11 6</td>
<td>10 10 10</td>
<td>10 10 10</td>
<td>10 8 8 10 10 10</td>
</tr>
<tr>
<td>Darren</td>
<td>7 5 3 4 6</td>
<td>10 6 10</td>
<td>9 10 7</td>
<td>10 10 10 10 10 10</td>
</tr>
<tr>
<td>Doug</td>
<td>0 3 3 3 2</td>
<td>4 0 10</td>
<td>10 8 8</td>
<td>8 10 9 9 15 9</td>
</tr>
</tbody>
</table>

Note: Ind = Independent
Table 6.
*Primary Trait Means (SD)*

<table>
<thead>
<tr>
<th>Student</th>
<th>Phase A (Baseline)</th>
<th>Phase B (POW + TREE)</th>
<th>Phase C (POW + TREE + LEAF)</th>
<th>Phase D (Alternating Treatment)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Means (SD)</td>
<td>Means (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Independent Peer</td>
</tr>
<tr>
<td>Aaron</td>
<td>4.20 (1.30)</td>
<td>10.00 (0.00)</td>
<td>11.33 (0.58)</td>
<td>10.33 (0.58)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.00 (0.00)</td>
</tr>
<tr>
<td>Adam</td>
<td>7.20 (2.68)</td>
<td>10.00 (0.00)</td>
<td>11.00 (1.00)</td>
<td>10.67 (1.15)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.33 (0.58)</td>
</tr>
<tr>
<td>Ben</td>
<td>3.60 (0.55)</td>
<td>7.67 (3.21)</td>
<td>11.67 (3.21)</td>
<td>9.33 (1.15)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.00 (0.00)</td>
</tr>
<tr>
<td>Brian</td>
<td>6.00 (2.12)</td>
<td>8.67 (1.15)</td>
<td>10.00 (0.00)</td>
<td>9.33 (1.15)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.00 (0.00)</td>
</tr>
<tr>
<td>Celia</td>
<td>4.00 (1.22)</td>
<td>7.67 (2.52)</td>
<td>8.33 (2.89)</td>
<td>9.00 (1.73)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.00 (1.73)</td>
</tr>
<tr>
<td>Chaz</td>
<td>8.00 (2.35)</td>
<td>10.00 (0.00)</td>
<td>10.00 (0.00)</td>
<td>9.33 (1.15)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.33 (1.15)</td>
</tr>
<tr>
<td>Darren</td>
<td>5.00 (1.58)</td>
<td>8.67 (2.31)</td>
<td>8.67 (1.53)</td>
<td>10.00 (0.00)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.00 (0.00)</td>
</tr>
<tr>
<td>Doug</td>
<td>2.20 (1.30)</td>
<td>4.67 (5.03)</td>
<td>8.67 (1.15)</td>
<td>10.67 (3.79)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.33 (0.58)</td>
</tr>
</tbody>
</table>

Note: SD = Standard Deviations, Ind = Independent
Figure 2.
*Primary Traits*

Note: I = Independent, P = Peer
<table>
<thead>
<tr>
<th>Student</th>
<th>Phase A</th>
<th>Phase B</th>
<th>Phase C</th>
<th>Phase D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>POW + TREE</td>
<td>POW + TREE + LEAF</td>
<td>Alternating Treatment</td>
</tr>
<tr>
<td>Aaron</td>
<td>50 87 46 41</td>
<td>58 136 99 95</td>
<td>115 150 103</td>
<td>115 124 109 121 118 116</td>
</tr>
<tr>
<td>Adam</td>
<td>123 142 49 64</td>
<td>52 137 141 109</td>
<td>124 117 118</td>
<td>131 113 153 128 116 83</td>
</tr>
<tr>
<td>Ben</td>
<td>28 60 46 30</td>
<td>38 56 66 74</td>
<td>63 86 109</td>
<td>58 78 54 80 69 101</td>
</tr>
<tr>
<td>Brian</td>
<td>77 67 63 42</td>
<td>52 62 60 57</td>
<td>77 68 72</td>
<td>59 82 73 88 69 90</td>
</tr>
<tr>
<td>Celia</td>
<td>35 22 37 43</td>
<td>38 55 64 81</td>
<td>80 69 44</td>
<td>71 73 66 67 68 76</td>
</tr>
<tr>
<td>Chaz</td>
<td>90 89 106 80</td>
<td>92 94 107 77</td>
<td>95 75 74</td>
<td>89 80 69 82 96 85</td>
</tr>
<tr>
<td>Darren</td>
<td>107 116 130 106</td>
<td>115 109 80 104</td>
<td>95 95 86</td>
<td>79 99 99 108 86 100</td>
</tr>
<tr>
<td>Doug</td>
<td>14 15 14 16</td>
<td>15 27 75 59</td>
<td>66 86 113</td>
<td>65 88 81 71 113 66</td>
</tr>
</tbody>
</table>

Note: Ind = Independent
Table 8.

*Number of Words Written Individual Means (SD)*

<table>
<thead>
<tr>
<th>Student</th>
<th>Phase A Baseline</th>
<th>Phase B POW + TREE</th>
<th>Phase C POW + TREE + LEAF</th>
<th>Phase D Alternating Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Aaron</td>
<td>56 (18)</td>
<td>110 (23)</td>
<td>123 (24)</td>
<td>114 (5)</td>
</tr>
<tr>
<td>Adam</td>
<td>86 (43)</td>
<td>129 (17)</td>
<td>120 (4)</td>
<td>133 (19)</td>
</tr>
<tr>
<td>Ben</td>
<td>40 (13)</td>
<td>65 (9)</td>
<td>86 (23)</td>
<td>60 (8)</td>
</tr>
<tr>
<td>Brian</td>
<td>60 (14)</td>
<td>60 (3)</td>
<td>72 (5)</td>
<td>68 (7)</td>
</tr>
<tr>
<td>Celia</td>
<td>35 (8)</td>
<td>67 (13)</td>
<td>64 (18)</td>
<td>68 (3)</td>
</tr>
<tr>
<td>Chaz</td>
<td>91 (9)</td>
<td>93 (15)</td>
<td>81 (12)</td>
<td>85 (14)</td>
</tr>
<tr>
<td>Darren</td>
<td>115 (10)</td>
<td>98 (16)</td>
<td>92 (5)</td>
<td>88 (10)</td>
</tr>
<tr>
<td>Doug</td>
<td>15 (1)</td>
<td>54 (24)</td>
<td>88 (24)</td>
<td>86 (24)</td>
</tr>
</tbody>
</table>

56
Figure 3.
Number of Words Written

Note: I = Independent, P = Peer
**Number of words written.** Between Phase A baseline and Phase B post-POW + TREE instruction and assessment, words counts increased creating a strong upward trend for five of the eight participants. Aaron with a baseline mean of 56.40 (18.20) and Celia with a baseline mean of 35.00 (7.84) nearly doubled their mean word counts in Phase B to 110.00 (22.61) for Aaron, and 66.67 (13.20) for Celia. Adam, Ben and Doug increased their mean word count between baseline and post-POW + TREE instruction by more than 50%. The remaining two participants, Brian and Doug decreased their word counts slightly between baseline and Phase B. During baseline, Brian wrote a mean of 60.20 (13.55) words, and Darren, the more prolific writer in the study, wrote a mean of 114.80 (9.63) words during baseline.

**Phase C: POW + TREE + LEAF Post-instruction**

**Quality.** The effects of SRSD for POW + TREE + LEAF instruction on quality were examined in performance changes between Phase B (POW + TREE with independent revision) and Phase C (POW + TREE + LEAF instruction with peer revision), and are presented as both changes in individual ranges and group means followed by standard deviations in parenthesis in the preceding Figure 1 and Tables 4 and 5. Two broad trends are observed across Phase C during which students participated in peer conferences. First, students who reached mastery in Phase B, Aaron, Adam, and Chaz, continued to perform at mastery level in Phase C with quality scores of 8 across all peer revised assessments for Aaron and Adam, and across five of the six assessments for Chaz.

The second broad trend in Phase C was increased stabilization of quality scores for Ben, Brian who demonstrated immediate increases in quality. Ben’s performance in Phase C was a mean of 7.33 (1.15) with a range of 7 to 8. Brian’s quality scores were stable at 8 across all
Phase C assessments, an increase of 2 points over his mean score in Phase B, independent revision.

Celia’s Phase C assessments began low with a score of 3, but jumped to 8 for the second two assessments in Phase C. This pattern was a repeat of the pattern seen in Phase B for Celia, who started low with the first assessment, then climbed rapidly. Even with the variability, her score mean score increased from a score of of 5.67 (2.52) in Phase B to 6.67 (2.31) in Phase C.

Darren’s quality scores in the first three assessments following LEAF instruction continued to fluctuate, ranging from 5 to 8, resulting in downward trend in the mean scores. Doug’s mean quality score in Phase C nearly doubled to 6.00 (1.73) and became somewhat less erratic. Despite a general upward trend, his quality scores fluctuated throughout all phases.

**Primary Traits.** Following instruction in SRSD for POW + TREE + LEAF variability of the previous phases was reduced, and the variability that did occur was at a higher performance level. For example, Aaron and Adam, whose scores were stable in Phase B, had minor variability in Phase C, but it was variability above the target level established by POW + TREE, with scores of 11, 12, and 11 for Aaron, and 12, 11 and 10 for Adam. Ben and Celia also scored above target on two of the three assessments in this phase with a 13, 8, 14 for Ben, and 11, 11 and 7 for Celia. Brian and Chaz produced perfectly stable primary trait scores in this phase at 10, the target level. Again, Darren and Doug produced responses with a mild to moderate degree of variability. Darren’s Phase C range was 7 to 10, slightly better than in Phase B. Doug’s Phase C range was 5 to 10, but because two of the scores were a 10, his mean increased dramatically from a 4.67 (5.03) in Phase B to a 8.33 (2.89) in Phase C, indicating an upward trend and increased stability.
**Number of words.** Following the general upward trend in word count between Phases A and B, word counts for all participants, except Ben and Doug, became more stable between Phases B and C. Ben, with a Phase B word count mean of 65.33 (9.02) increased to a mean of 86.00 (23.00) in phase C creating a steady upward trend from baseline through Phases A and B. Doug’s mean word count increased from 53.67 (24.44) in Phase B to 88.33 (23.59) in phase C, with a high degree of variability in both phases.

**Phase D: Alternating Treatment**

Phase D was designed to focus on independent revision versus peer revision by alternating each condition, independently revised quick writes and the peer revised quick writes.

**Quality.** The most predominant quality feature of this phase was increased stabilization of trends in both independent and peer revised quick writes. Three participants, Aaron, Adam, and Darren earned quality scores of 8 across both individual and peer revision condition in the alternating treatment phase. Ben, Brian and Celia earned quality scores of 8 on five of the six assessments in this phase. Ben and Brian each produced one quick write that earned a quality score below 8. Chaz wrote two moderately low responses during this phase, earning a 5 on one of the peer revised response and a 4 on one of the independently revised response. Celia also had one lower score of 5 in this phase on a peer revised quick write. Finally, while well below a mastery score of 8, Doug’s quality scores stabilized somewhat during this phase. He wrote independently revised responses with scores of 8, 5, 5, and wrote peer revised responses of 5, 7, 5. Sharp upward trends illustrate rapid growth, however, a wide degree of variability was seen in some individual post-instruction scores.

**Primary traits.** Primary traits in the final phase are generally more stable with less variability across individuals, and across treatments. Within Phase D, five of the eight
participants, Aaron, Adam, Ben, Chaz, and Darren, had mean difference between individual and peer revised conditions of less than a point. Brian’s peer revised mean was 1 point higher than his independently revised mean, while Celia’s results are exactly opposite, with her independently revised mean being one point higher. Darren’s scores were equal between the independent and peer revision conditions. As in previous phases, Doug had an outlier that skewed his means making direct comparison of means unreliable. Examination of individual scores for Doug shows that during the independent revision condition, his primary trait scores were inconsistent at 8, 9 and 15. In the peer revised condition, his scores were 10, 9, and 9, resulting in a lower mean, but more stable, consistent scores.

To summarize the primary trait results in the Alternating Treatment Phase—while scores were not appreciably different between the two conditions, scores were high (at or near mastery), and generally more stable in both the independent and the peer revised conditions than in the Phase D that immediately followed instruction in POW + TREE and POW + TREE + LEAF respectively.

**Number of words written.** Comparison of the number of words written between individual and peer revised quick writes showed minimal effects on length. Four participants Adam, Ben, Brian and Darren had modestly higher word count in the peer revised condition (C) with mean increases of 20 to 30 words. The remaining participants had no appreciable difference.

**Revision**

Revision is described across phases in terms of number and quality of changes rated on a scale of 0 to 2, as previously described. During baseline, only Adam committed a plan to paper, and only in two baseline assessments. He made one change during baseline and it was of
During Phase B, post-POW + TREE and pre-LEAF instruction, some participants began revising their written plan.

**Independent revision.** Table 9 shows the number of changes made by participants based on individual revision. The first three assessments in Phase B (TREE 1, 2, and 3 in Table 10) were done before participants had received any instruction on revision. Celia was the most active self-editor with 7 revisions that were a substantial benefit to her quick write. Darren made 4 revisions that were a substantial benefit to his work, and 2 revisions that were of no benefit to his work. Aaron made 2 revisions in the first three Phase B assessments, 1 of substantial benefit and 1 of moderate benefit to his quick writes.

The next three independent assessments done during Phase D were completed after participants had received instruction in SRSD for POW + TREE + LEAF for peer revision, but these assessments were completed independently during the Alternating Treatment Phase.

Again, Celia was the most active editor with a total of 5 revisions in this phase: 2 revisions of

---

**Table 9.**

<table>
<thead>
<tr>
<th>Student</th>
<th>Phase B Independent Revision</th>
<th></th>
<th></th>
<th></th>
<th>Phase D Independent Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Benefit</td>
<td>Moderate Benefit</td>
<td>Substantial Benefit</td>
<td></td>
<td>No Benefit</td>
</tr>
<tr>
<td>Aaron</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Adam</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ben</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Brian</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Celia</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Chaz</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Darren</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Doug</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>
substantial benefit to her work, 1 revision of moderate benefit to her work, and 1 revision of no benefit to her work. Brian made 3 revisions that substantially benefitted his work. Adam made 1 revision that substantially benefitted his work and 1 revision that moderately benefitted his work. Aaron and Chaz each made 1 revision, Aaron’s substantially benefitting his work and Chaz’s moderately benefitting his work. Ben, Darren and Doug made no revisions to their work in this phase.

**Quality of Written Peer Feedback**

The performance of participants in the role of editor is reported in Table 10. After receiving instruction in SRSD for POW + TREE + LEAF participant dyads completed six peer revisions conferences during assessment. As previously described, scorers rated each piece of feedback editors provided for their peers. As peer editors they made far more recommendations to their partners compared to individual revision when they were evaluating their own work and made minimal revisions. Participants worked with the same peer in each session, so examining the feedback by peer dyads highlights the reciprocal nature of these revision sessions.

Aaron made 10 recommendations to Adam and Adam reciprocated with 11 recommendations for Aaron. The quality of their feedback was moderate to substantially beneficial to each other, with just a few recommendations too vague to be useful (e.g., “Add more details”). Ben provided Brian with 13 recommendations, and Brian reciprocated with 10 recommendations for Ben. As with Aaron and Adam, their feedback was a combination of moderate to substantial changes to their partner’s work.
Celia provided Chaz with 8 recommendations, and Chaz provided Celia with 13 recommendations. Seven of the eight recommendations that Celia provided Chaz were of moderate benefit to his work, with the remaining recommendation be a substantial benefit. Chaz’s feedback to Celia was stronger with 8 recommendations being a substantial benefit, and 5 being moderate.

Darren and Doug paralleled other teams in terms of the quantity of their feedback to each other, 12 and 13 recommendations respectively, however, the quality of the feedback provided by Doug to Darren was not equivalent to the feedback he received from Darren. Darren provided Doug with 6 recommendations of substantial benefit, 4 of moderate benefit, and 2 of no benefit. In contrast, Doug provided Darren with 5 recommendations of a substantial nature, 2 moderate, and 6 recommendations of no value.
Author’s Use of Peer Feedback

Table 11 illustrates the degree to which authors accepted or rejected the feedback they received from their peer editors. LEAF Peer Revision Guides were compared to final quick writes to determine if the recommendation was included in the final product. As previously mentioned, during POW + TREE + LEAF instruction, authors were told that they retained final editorial rights to their work and that recommendations from their peer editors were just that, recommendations, not mandates.

Table 11.

<table>
<thead>
<tr>
<th></th>
<th>Phase C Peer Revision</th>
<th>Phase D Peer Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Benefit</td>
<td>Moderate Benefit</td>
</tr>
<tr>
<td>Student</td>
<td>Rec</td>
<td>Used</td>
</tr>
<tr>
<td>Aaron</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Adam</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Ben</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Brian</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Celia</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Chaz</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Darren</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Doug</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Rec = Received

Aaron accepted all 12 of Adam’s recommendations, and Adam accepted 9 out of 10 of Aaron’s. Ben accepted all 10 of Brian’s recommendations, and Brian accepted all 12 of Ben’s recommendations. Celia accepted 11 of the 12 recommendations made by Chaz, and Chaz accepted 11 of the 12 recommendations made by Celia. Finally, Darren accepted 7 of the 13
recommendations made by Doug, and Doug accepted 11 of the 13 recommendations made by Darren.

**Writing Fluency—Woodcock Johnson**

Raw scores from the Woodcock Johnson IV test of writing fluency was used as a screening device at pretest. Post-test scores are presented for descriptive purposes only. Raw scores are reported in Table 12. The test measures the speed at which students can write simple, quick sentences based on a small linedrawing (e.g., a man walking through a door, a boy playing with a dog, etc.), with three words related to the image listed beside the picture. Students are asked to use the three provided words and add words as needed to create a complete sentence describing the thumbnail. They have 7 min to write as many sentences as they can. The greatest performance change was Brian who scored an 18 before instruction and increased to 32 post-

<table>
<thead>
<tr>
<th>Participants</th>
<th>Before Instruction</th>
<th>After Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaron</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>Adam</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Ben</td>
<td>27</td>
<td>*Unavailable</td>
</tr>
<tr>
<td>Brian</td>
<td>18</td>
<td>32</td>
</tr>
<tr>
<td>Celia</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Chaz</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>Darren</td>
<td>19</td>
<td>15</td>
</tr>
<tr>
<td>Doug</td>
<td>15</td>
<td>*Unavailable</td>
</tr>
</tbody>
</table>

* Participants were no longer enrolled in the alternative program at the time of second assessment.
instruction. Celia and Chaz’s scores reflect moderate increase between testing times. Aaron and Adam both increased the number of sentences they attempted, however, they made more errors, so the net gain is negligible. Ben and Doug had been relocated to other alternative settings at the time of the second assessment.

**Treatment Acceptability.** The final assessment measure in this study asked participants to evaluate the value and applicability of strategies used during the study. Interviews were conducted by their regular classroom teacher, recorded and transcribed. Ben, Celia and Doug were unavailable for this assessment due to relocation. Full results are contained in Appendix T. Overall, participants reported that POW + TREE and LEAF were useful strategies and helped them improve their writing skills. Related to POW + TREE, participants endorsed POW + TREE because it helped them write better. Specifically, they reported that the planning helped them to generate and organize their writing content on paper. During writing, POW + TREE helped them add more details and communicate their thoughts more effectively and efficiently. During revising, Chaz reported that POW + TREE provided a framework for evaluation and helped him to see mistakes. Several participants credited the organizers and structural components with helping them to get their thoughts down on paper and organize their thoughts. Aaron reported that POW + TREE helped him to organize his thoughts when reading and in class during lectures. Related to LEAF and peer revision, several students credited peer editors with helping them to generate additional ideas, identify weaknesses and ambiguities in their writing, and make their writing better. All except Darren believed that it was helpful to get advice from another student, and all agreed that the advice made their writing better. In contrast, however, when asked if they would rather revise alone or with a partner, Aaron and Darren said that they would rather revise alone, and Chaz said it didn’t matter because he could do it by himself. All
but Darren felt that using LEAF improved their writing. Adam summarized the benefits of LEAF saying, “It helped me if I didn’t have another reason, it helped me get another reason, get ideas, and fix mistakes that I made.”
Chapter 5

Discussion

This study builds on SRSD for POW + TREE research (i.e., Lienemann & Reid, 2008; Mason et al., 2009; Mason, Kubina & Taft, 2009) by adding peer support for students who struggle with generating enough content, or have trouble remembering to include all of the primary traits. The findings confirm prior research reporting that instruction in SRSD for POW + TREE is a powerful method of promoting positive persuasive writing outcomes for students at risk for EBD (Mason et al., 2010). All eight participants increased their quality, primary traits and length following POW + TREE instruction with seven of the eight participants at least doubling their baseline quality scores (Aaron, Adam, Ben, Brian, Celia, Chaz and Darren). Doug, however, made only moderate changes between phases A and B with a mean increase of less than one point. Despite the modest gain in mean, his final quality score in Phase B was an 8, indicating that he was capable of producing work that reflected growth. Treatment acceptability interviews reflect the participants self-awareness of their improvement following instruction. Participants believed that POW + TREE helped them to be stronger writers (see Appendix T for Treatment Acceptability).

The positive trend was tempered somewhat by the fact that some students struggled with performance variability. Three probes has been established as the minimum number needed for establishing performance (Kennedy, 2004), however, more probes may have resulted in increased stability as noted in Mason et al. (2010). The scores of Ben, Brian, Celia, Darren and Doug show extreme changes in trend across time. Each was able to produce quality scores of 8 which indicates that the problem is not in metacognitive understanding of the strategy but perhaps an indication of their volatile lives outside of instruction. Students with EBD struggle
with consistent performance due to internal and external factors that easily distract them from academic tasks (Lane, 2004).

Cognitive deficits may have contributed to struggles with variability for some students. Doug, whose state assessment test scores rank him in the 9th percentile in reading and language, faced the greatest cognitive challenge of the group. Despite those challenges, he increased his mean quality scores from 2.40 (SD = .89) in baseline to a mean of 6.67 (SD = 1.53) in the peer revision Phase C and the peer revision portion of Phase D. Evidenced by his word counts across phases, the issue was not with generating enough text, but in staying on topic. His writing was often tangential and he would digress from the topic without being aware that he had lost focus of the prompt.

This point is evidence that the number of words written is not a reliable predictor of quality without other supporting factors (Graham & Harris, 2003). For students who don’t write enough to include all of the primary traits, a short response typically indicates a weak response. The inverse, however, does not necessarily indicate a strong response. For example, Adam’s first baseline was 123 words and contained 9 primary traits, but it only scored a 4 on quality rating.

Students were encouraged to write more during POW + TREE instruction, though, simply writing more did not assure a higher quality response. Inexperienced writers, such as Doug, sometimes revert to simply pouring out random thoughts only vaguely related to the topic without considering organization and clarity (MacArthur, 1991). Several well chosen and carefully constructed reasons and explanations may be more persuasive than a dozen random thoughts. In Adam’s case, following instruction, he maintained near perfect scores, but his word count did not increase substantially. The quality improvement came through Adam’s
organization and clarity. In just a few lessons, SRSD for POW + TREE gave him the tools he needed to convert disorganized thoughts into a cohesive response.

**Peer Revision**

This study extends existing research on peer revision (i.e., Deatline-Buchman & Jitendra, 2006; MacArthur et al., 1991; Morris-Kindzierski, 2009; Stoddard and MacArthur, 1993), by providing evidence that students with EBD are capable of providing meaningful feedback to their peers, and peer revision can be an effective tool for adolescent writers to improve their writing. In addition to the broader goals of writing research, the effective placement of the peer revision conference *after* planning and *before* writing the complete response, was not only effective in improving the end product, but also reduced strain on limited time, motivation and attention span, as students are not engaged in rewriting (Graham, 1990). Stoddard and MacArthur (1993) reported that students were not always accurate when rewriting drafts and might skip a section, resulting in lower scores and frustration for the student. While the data indicated encouraging improvement for some students, and more neutral change for others, there is evidence that peer conferencing using the LEAF strategy may support increased stabilization for students struggling to produce a consistent product. Comparison of the tables reporting revision feedback and scores for primary traits and quality provide evidence that recommendations at the “substantial benefit” level support higher quality and more complete responses. For example, in the second assessment in Phase C, Chaz provided Celia with 2 recommendations that were rated “substantial benefit”, and two recommendations rated “moderate benefit”. Celia’s plan was missing the third reason and explanation. Without Chaz’s help in generating additional ideas, her quality score would have been a 4 and her primary trait
score would have been an 8. With Chaz’s help with revisions, she scored a quality score was an 8 and her primary trait score was a 10.

For students who reached mastery without the need for additional revision, LEAF peer revision conferences led to expansion of the “W” in POW, write and say more. Aaron and Adam were at mastery level in quality and primary traits before LEAF peer revision instruction. In the assessments following instruction in the LEAF peer revision strategy in Phase C, each included 3 additional primary traits above the 10 primary traits called for in the POW + TREE strategy.

Peer revision effectiveness is dependent in large part upon the quality of the recommendations one receives (MacArthur, Graham, Schwartz & Schafer, 1995). The majority of the recommendations offered by editors and used by authors in this study were moderately to substantially beneficial to the persuasive qualities of the final product. This was not true, however, of all pairs. In three dyads, this reasoning was effective, and indeed, participants drew from each other’s unique strengths and talents. For Darren and Doug, however, this was not always the case. Darren and Doug were paired by the director and the teacher because they have similar cognitive abilities. Doug’s variable writing performance was a direct reflection of his variable personal performance, sometimes compounded by Darren’s state of mind. On the days that either one was “off” it reduced productivity and quality of work for both. If that day was a peer conference day, neither one benefitted from the conference. In the small group setting of the pilot study authors had the opportunity to conference with a variety of editors, thereby not having their growth limited by the ability or disability of one specific editor (Mong Cramer, 2011).
Limitations

The results of this study relative to peer revision must be viewed as preliminary findings intended to guide future research. It is quite clear that all students made tremendous gains in their persuasive writing but the degree to which peer revision affected responses is not as clear. For some students, the additive effects of peer revision seemed to help stabilize their scores, but the design for this study precludes clear differentiation between the effects of peer revision, versus repeated practice.

Additionally, for participants who demonstrated mastery immediately following POW + TREE instruction, the ceiling effect of the holistic quality measure masks improvement in the POW + TREE + LEAF assessments. Quality is a subjective construct that is difficult to quantify with reliability. The quality measure used in this study, previously validated in other studies (i.e., Mason, Kubina, Valasa, & Cramer, 2010; Mason, Kubina, & Taft, 2009) is highly reliable because it is primarily based on the presence of specific combinations of primary traits. It provides clear quantitative evidence as students begin to grow as writers, but it has a low ceiling for writers that make rapid progress. This method does not consider the complexity and sophistication of ideas or writing style. For example, the following two reasons and explanations on the topic of “i-pods in class” would be scored equally on quality: (a) *It might keep me from doing my work because I don’t know what to do*, and (b) *Students may find listening to an i-pod in the classroom distracting because the music might drown out the teacher’s directions*. A scoring method that recognizes the sophisticated vocabulary and complex expression of thought in the second example would allow for more sensitive quality scoring and more accurate differentiation between students. The challenge with methods that includes objective opinions is reaching acceptable levels of reliability with multiple scorers.
Another limitation to observable effectiveness of POW + TREE + LEAF is the necessity of fixed pairs. Fixed, homogenous pairings facilitated sound research methods and smooth instructional pacing, but created limitations in other aspects of the writing process. For the purpose of experimental control in a single subject, multiple baseline study, pairs of students moved through instruction and assessment together, and had no access to other participants. Tolerance for peer revision work varied from day to day, and in some cases, influenced the productivity of the class sessions. First, attendance became a serious issue. If one student was absent, the other could not progress with instruction. During the course of the study, frequent absences and multiple short-term suspensions for violent behavior slowed the progress of both members of several of the peer dyads, but especially frustrated the student who was in school and ready to learn. During the pilot study, with small group instruction tensions between two students, or the status of a single student was defused to some degree by the group, and had a less intense effect on an individual (Mong Cramer, 2011).

Finally, the single case design used in this study facilitated examination of the effects of instruction, however, the generalization of these findings to broader groups of similar students, or expansion to other populations or settings is limited by the small number of participants (Kennedy, 2004).

**Future Research**

Future research is needed to explore methods for developing and expanding the POW + TREE framework for students who reach mastery immediately following instruction. Students are encouraged to add more reasons and explanations even when they have met criteria for POW + TREE. Despite the encouragement, most students stop when they have completed the minimum requirements. Based on treatment acceptability interviews, participants recognized the
role that POW + TREE played in their increased success. Sophisticated writers may welcome and be motivated by a super-charged POW + TREE to help them take their preliminary persuasive writing skills to the next level.

Further research is needed to examine generalization effects of the LEAF peer revision skills, to independent revision skills. MacArthur’s students reported that they started hearing their editor’s feedback in their mind when they were creating original drafts, based on prior conferences (MacArthur et al., 1981). The current study shows increased stabilization of both peer and independently revised quick writes during the Alternating Treatments Phase D. By Phase D, participants had worked through the POW + TREE + LEAF process during multiple assessments and were quite familiar with the strategy. Further examination of elements that support carryover and how many peer sessions are needed for the author to internalize the editor’s feedback may be meaningful.

Peer revision research would benefit from future studies examining the effects of social standing and pro-social communication skills on the effectiveness of peer revision, and whether peer revision could have an ancillary effect on improving pro-social skills. As Lane (2004) pointed out, students with EBD are not often encouraged to participate in peer mediated instruction, which Lane attributed to the frequency inappropriate behaviors. The participants in this study displayed emotional volatility, but it was very rarely expressed once the lesson in which students were working together was underway. Future studies formally observing and measuring the effects of peer revision on social interactions both inside and outside of the direct instructional time may prove meaningful.
In addition, further research exploring quality scoring instruments that are quantifiable but provide more refined analysis of sophisticated nuances of quality may help to lessen the problem of a ceiling effect.

Future research using a group design to compare and contrast peer versus individual revision may result in clearer findings as to the role of the peer revision component (Morris Kindzierski, 2009).

Implications for Practice

The present study contributes to the solid body of evidence that SRSD for POW + TREE instruction is effective in promoting strong persuasive writing in students with EBD. Based on the current findings, there is evidence that for some students, feedback in the form of peer revision at the planning stage improves the completeness and quality of their work. The small sample and brief duration of this study prevented fully exploring the extent to which editorial competency could be developed with these students. At the end of this study, students were not at a level of competency that would suggest that student conferences should replace teacher conferences, however conferencing with a peer reduces wait time for feedback and may reduce time needed with the teacher. Prior longitudinal research, taking place over the course of a school year, provides evidence that students with LD are capable of conducting conferences that are equally effective as conferences conducted with a teacher (Wong, Butler, Ficzere, & Kuperis, 1997).

The current study also provides evidence that students with EBD are able to evaluate, diagnose and recommend repairs in their classmates writing, and that students with EBD can accept corrective feedback from a peer and use that feedback to improve their writing. In table 11 the results of peer conferences are seen from the author’s and the editor’s point of view. In
Phase C, editors made a total of 16 recommendations that were rated as “no benefit”, and authors used only 8 of those recommendations. In contrast, editors made a total of 68 recommendations that were rated as “moderate benefit” to “substantial benefit”, and author’s included 63 of those recommendations to their final draft. This is evidence that authors were able to accept the feedback offered by peer editors, and to some extent, were able to differentiate between beneficial and non-beneficial feedback. In some cases, the “no benefit” recommendations were generic (i.e., “add more details), earning a “no benefit” rating, and yet even a subtle hint directed the author’s attention to an area that needed additional work, spurring the author to make changes to their final draft.

Finally, based on the feedback from the students with EBD, students found peer revision helpful as it provided additional insight, and a fresh evaluation. Students recognized the value of their peer’s feedback, and incorporated it into their writing. Interestingly, some students reported that they found the peer revision helpful for the above reasons, but when asked if they prefer to revise with a peer or alone, several chose alone. Future research on the social and academic implications of working in a highly structured peer mediated activity could help educators understand the implications of peer mediated interventions, and how and when they might be most useful when working with students with EBD.
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Appendix A

A Review of Peer-assisted Writing Intervention Research for Students with Disabilities

Abstract

Communicating effectively in writing requires a unique set of skills. Revision is a unique skill that occurs in multiple stages throughout the writing process, from drafting to final copy. Through revision, writers work to refine, clarify, expand, and correct errors. However, for students with disabilities, revision presents unique challenges. Writers with disabilities have trouble identifying errors and ambiguities in their own work. With the help of an editor in locating problems, they are able to revise their work to improve the end product. This review provides an overview of the research on instructional interventions that incorporate peers as editors in the writing process, for students with disabilities. The effects of peer-assisted revision on quality, mechanics, length, engagement and style are reviewed. A brief examination of the social validity of peer-revision with students with disabilities concludes this review.
A Review of Peer-assisted Writing Intervention Research for Students with Disabilities

Competent writing skills are critical to success in the workplace, the classroom and the community, according to The National Commission on Writing (2003, 2005). While focusing on the deficits of science, math and technology in the classroom, writing instruction has been neglected in recent years (“Writing Skills,” 2004). National Assessment of Educational Progress (NAEP) conducts national testing and collects data from individual states to compile a report on the writing skills of eighth and twelfth graders in the United States. The 2007 NAEP Report Card to the Nation (National Center for Educational Statistics, 2007) data demonstrated marginal improvement over the two previous testing years, 1998 and 2002, but even with these gains, the findings clearly indicate alarming deficits in writing ability (Salahu-Din, Persky, & Miller, 2008). Even with a 6% improvement over a nine-year period, 67% of eighth and twelfth graders scored below proficient in writing. State level writing assessments, with disaggregated scores for students with disabilities, indicated that 94% (National mean) of those students scored below proficient.

Fortunately, researchers over the past several decades have documented the difficulties students with disabilities have when writing. Written products of students with disabilities tend to be shorter, incomplete, poorly organized and of poorer quality than those of their peers without disabilities (Graham, 1997; MacArthur & Graham, 1987). Students with disabilities struggle across all areas of writing.

Revision, the process of correcting writing mechanics, content and meaning, is a particularly problematic area (MacArthur & Graham, 1987; MacArthur, Graham & Schwartz, 1991). When students with disabilities, for example, attempt to revise their own writing, their
revisions are typically focused only on minor mechanical changes, and rarely include substantive changes that improve the quality of their writing (MacArthur & Graham, 1987). Further compounding these issues is the limited ability of students to identify the weaknesses in their own work (Bartlett, 1982). This may be the result of a disconnect between the thoughts they intend to communicate, and what they actually write (MacArthur, Schwartz & Graham, 1991). Furthermore, when this disconnect occurs, students have difficulty detecting missing information or ambiguity in their work. Without the benefit of an interlocutor to point out missing information, their minds fill in any missing information when they read their own work. They are unable to differentiate between what they wrote, and what they were thinking when they wrote it. This tendency makes revision particularly challenging for students with disabilities.

**Revision Instruction**

Revision is defined as including surface corrections and the much deeper review of writing at the idea level that address ideas and clarify meaning (Fitzgerald, 1987). Fortunately, a number of instructional approaches with peer-assisted learning have been validated as effective for improving revision skills at both levels (Graham & Perin, 2007). Peer-assisted learning in writing is an instructional approach that refers to a process of two students working together to assist one another in a variety of ways during planning and revising. The teacher’s role in peer-assisted learning lessons is to be sure that the students are appropriately trained to provide the support and feedback to peers, and to very carefully monitor the student interaction for accuracy (Greenwood, Carta, & Kamps, 1990).

The effects of peer-assisted learning for writing has been well supported in the literature. Graham and Perin (2007) identified strategy instruction, including those with peer-assistance, as
the strongest instructional element in promoting quality writing (Effect Size = 0.82)\(^1\).

Collaborative writing, described as students working together to plan, draft and revise and edit their compositions, also produced strong results (Effect Size = 0.75) on the quality of students’ writing. Graham and Perin note that many effective strategies address just one component of the writing process, and by combining multiple strategies, such as a strategy for peer planning and a strategy for peer editing, a synergistic effect may result in even stronger outcomes.

Peer-assisted learning is commonly used in process writing classrooms (Graves, 1983). In these classrooms a flexible array of writing strategies and instructional approaches include pre-writing, planning, drafting, revising and editing in an interactive setting where students work with peers and their teacher to develop their writing skills (Goldstein & Carr, 1996). The social context of writing as a means of communication is important in this approach. Process writing classrooms support meaningful writing for an authentic purpose and for a specific audience (Hayes & Flower, 1980). Writer’s Workshop, a popular instructional model in classrooms today, is an example of a process writing model that implements peer-support throughout rehearsing, drafting, revising and editing (Calkins, 1986; Graves, 1983).

Calkins and Graves examined peer support in case studies of 16 children in grades one through four over a two-year period (Calkins, 1980; Graves, 1981). Planning, drafting and revising was recorded. Student conferences included questions to clarify content, however the youngest writers did not always follow the recommendations of the peer editor. As students matured, there was increased attention to mechanical details, as well as content level changes

\(^1\) Guidelines for defining the significance of effect sizes (ES): .2 is considered small, .5 is considered medium, and .8 or more is considered large (Cohen, 1988).
during conferencing, and writers were more likely to address recommendations of their peer editor. Through frequent conferences with both teachers and students, writers honed their revision skills to include rearranging text, as well as adding and deleting text to improve quality.

In a mixed design study, both qualitative and quantitative analysis, 19 first graders were observed during peer revising conferences in a Writer’s Workshop (Jasmine & Weiner, 2007). Using checklists, writers’ portfolios, and questionnaires, researchers collected data related to students’ drafting and revising behaviors. Some, but not all, students were able to participate effectively in peer-revision and editing conferences by making meaningful contributions to content and simple mechanical edits. Authors reported that while the mean scores for adding sentences, and mechanical corrections increased from pretest to posttest, so did the standard deviations, indicating that not all writers benefitted equally from peer-revision. During interviews the students said that their writing partners helped them make their stories sound better, and helped them find mistakes, like capitals. Content level revisions, measured by counting the number of sentences added after conferencing, increased from 2.11 in prewriting, to 3.84 post-writing. The authors caution that while the count increased, the standard deviation did as well, indicating that not all students were equally proficient at adding sentences to resolve ambiguity.

In another study, 93 sixth-graders were placed into one of four instructional conditions: (a) revision instruction with peer partners; (b) peer partners only; (c) revision instruction only; and (d) control (Brakel Olson, 1990). They assessed both the revision behavior, and the quality of narrative writing. Assessment for quality was based on a modified Personal Narrative Writing Scale (Cooper, 1977). The scale provides criteria for both rhetorical changes (audience, voice, central figure, setting, organization, and theme) and surface structure (wording, syntax,
punctuation, spelling and appearance). They found that students working independently—with and without specific instruction in revision techniques—made more revisions, but the revisions tended to be superficial mechanical change that had minimal impact the quality. In contrast, peer-revision dyads significantly improved the quality of their writing. Additionally, they reported that comparison between the two peer revision groups—with and without specific instruction—indicated that the group who received specific instruction plus peer revision made more changes than the group who had just peer revision. Brakel Olson and colleagues conclude that the peer assistance had more of an influence on the final quality than the specific revision instruction used in this study.

Similar findings were reported based on a repeated measures study involving 34 fourth graders, grouped to work with and without peer support for revision (Zammuner, 1995). Each student wrote narratives under three conditions: (a) independent draft with independent revision, (b) independent draft with peer-revision, and (c) peer draft with peer revision. Students working individually increased their revised narratives in terms of length, number of thought units, and fewer mechanical errors, but the quality was not significantly improved by these changes. Students working in the two peer conditions produced revised writing samples that were significantly improved in most of the criteria measured: syntactic complexity, grammar, number of ideas, description of setting and characters. Revised drafts had an average of four new plot developments. The most commonly added plot developments were new problems for the characters to address, but there was also evidence of increased depth of character development and increased description of their character’s emotions and reactions, the latter of which only occurred in the peer support condition. The implications of the fact that only the peer groups
added emotional reactions leads to the discussion of the social context of writing, and the benefits of sharing writing with others.

**Social Context of Writing**

Peer-assisted writing instruction is rooted in Sociocultural theory where writing is described as socially and culturally mediated and is taught within students’ Zone of Proximal Development (Vygotsky, 1978). According to Vygotsky, each new phase of a child’s communication is driven by the child’s desire to interconnect with another person. As new challenges arise, the child looks to a more experienced person for information on how to manage the new challenge. In the writing classroom, the more experienced other person who provides the child with new learning opportunities could be a teacher or a peer with more knowledge, or a fresh outlook on a written piece.

In her review on revision, Fitzgerald (1987) suggests that through dialogue about writing, a restructuring of knowledge is facilitated (Vosniadou & Brewer, 1987). Dialogue is a natural component of peer revision, but to be effective dialogue, peers need training on how to give socially appropriate feedback, and how to make their feedback specific and clear (Beach & Friedrich, 2006; Dahl & Farnan, 1998).

In the inclusive classroom setting, it is important to identify effective means for students with disabilities to receive optimal levels of instructional support in writing and to identify means of helping students with disabilities to be active, participating members of the learning community within the classroom. The purpose of this review of the literature is to examine writing instruction for students with disabilities that include components of peer-assistance during revision. The following research questions guide this review:

(a) What type of instructional interventions for peer-assisted revision have been studied?
(b) How does peer-assisted revision affect the writing quality (e.g., holistic and component measures) of students with disabilities?

(c) What writing conventions (e.g., spelling, capitalization, punctuation, and grammar) are affected by peer-assisted revision activities implemented with students with disabilities?

(d) What are the affects of peer-assisted revision on social validity for students with disabilities?
Methods

Search Procedures

A comprehensive search for journal articles was conducted using three search procedures: electronic data base, hand search, and ancestral search. First, two data-based search engines, ERIC and PsycInfo, and grouped Boolean logic terms were used to identify possible articles. Identification of keyword terms for the search was determined by using the thesaurus tool in each database. For the Eric search the terms used in a variety of combinations were: writing (“writing” or “writing skills” or “expository writing” or “composition” or “revision”), and special education (“disabled” or “behavior disorders” or “learning disabilities” or “exceptional children” or “handicapped” or “low incidence disabilities” or ), and peer assistance (“peer teaching” or “peer tutoring” or “cooperative learning” or “reciprocal teaching” or “collaborative learning”). The Boolean logic terms used in the PsychInfo data base were: writing (“written communication” or “revision” or “writing skills” or “writing” or “composition” or “expository”), and special education (“learning disabilities” or “developmental disabilities” or “disorders” or “emotional disorders” or “emotional disturbance” or “adjustment disorders” or “special needs”), and peer assistance (“collaboration” or “cooperative learning” or “peer tutoring”). These combined searches produced 59 articles, nine of which were included in this review (Deatline-Buchman & Jitendra, 2006; Hallenbeck, 2002; Hine, Goldman & Cosden, 1990; MacArthur, Schwartz, & Graham, 1991; Morris Kindzierski, 2009; Saddler, Behfrooz, & Asaro, 2008; Stoddard & MacArthur, 1993; Utay & Utay, 1997; Wong, Butler, Ficzere, & Kuperis, 1996; Wong, Butler, Ficzere, Kiperis, Corden, & Zelmer, 1994).

Next, a hand search of the table of contents from 1987 to present was conducted in five journals: Exceptional Children, Learning Disabilities Quarterly, Learning Disabilities Research
and Practice, Reading and Writing Quarterly The Journal of Special Education. The year 1987 is significant to this search based on the release date of Fitzgerald’s review of research in revision (Fitzgerald, 1987). These publications were selected based on their significant contributions to the field. The hand searches resulted in an additional four articles that met criteria (Englert, Gramon, Mariage, Rattant, & Urba, 1995; Hallenbeck, 1996; MacArthur, Graham, Schwartz, & Schafer, 1995; Wong, Butler, Ficzere, & Kuperis, 1997). Finally, an ancestral search of the references contained within the articles selected using electronic and hand search was performed, resulting in two additional articles, (Englert, Raphael, Anderson, Anthony, & Stevens, 1991; Englert, Raphael, & Anderson, 1992).

**Inclusion Criteria**

The body of literature was narrowed and final selection of articles to be included in this review was guided by seven criteria: (a) articles from peer-reviewed journals, (b) studies based on empirical research of experimental, quasi-experimental, or single-case design, (c) experiments included an independent variable related to writing instruction, (d) at least one dependent measure of written composition, (e) peers assisted one another in revising their writing during planning, drafting or editing, (f) students with identified disabilities were included among the participants and (g) data for students with disabilities were disaggregated from those of students without disabilities.
Results

The fifteen studies in this review involved 698 students ranging from first through twelfth grade, from rural, suburban and urban communities, and included settings ranging from general education to alternative settings (see Table 1). Students in first through sixth grade represented 85% (n = 591) of the participants (Deatline-Buchman & Jitendra, 2006; Englert et al., 1991; Englert et al., 1992; Englert et al., 1995; Hine et al., 1990; MacArthur et al., 1991; MacArthur et al., 1995; Saddler et al., 2008), with the remaining 15% (n = 107) of participants in seventh through twelfth grades (Hallenbeck, 1996, 2002; Stoddard & MacArthur, 1993; Wong et al., 1994; Wong et al., 1996; Wong et al., 1997). One study, Morris Kindzierski (2009) reported students’ grade level as varied, but did not specify the range.

Characteristics of Students & Setting

Students with disabilities represented 75% (n = 526) of the total number of participants. Students with LD were included in all studies representing 96% (n = 508) of the participating students with disabilities. Other areas of disability included Emotional Behavioral Disorders (n = 19) (Englert et al., 1995; Morris Kindzierski, 2009), and Mild Mental Retardation (n = 7) (Englert et al., 1995). Of the studies that reported participant gender, males outnumber females two to one (male = 346, female = 174) which is typical of the national average representation in Special Education (Herring, McGrath & Buckley, 2007). Two-thirds of the participants were adolescent learners in fourth through eighth grades (Deatline-Buchman & Jitendra, 2006; Englert et al., 1991; Englert et al., 1992; Hallenbeck, 1996; Hallenbeck, 2002; Hine et al., 1990; MacArthur et al., 1991; MacArthur et al., 1995; Stoddard & MacArthur, 1993; Saddler et al., 2008; Wong et al., 1994; Wong et al., 1996).
Table 1.  
Demographics

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<th>Gender</th>
<th>Classroom</th>
<th>Community</th>
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<td>5 LD</td>
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<td>M 2, F 2</td>
<td>Resource</td>
<td>Urban</td>
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<td>100 exp</td>
<td>55 LD</td>
<td>4, 5</td>
<td>M -, F -</td>
<td>General Ed</td>
<td>Urban</td>
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<td>32 LD</td>
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<td>M 29, F 34</td>
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<td>Resource</td>
<td>Urban</td>
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<td>7 LD</td>
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<td>7</td>
<td>M 2, F2</td>
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<td>Rural</td>
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<td>11 LH</td>
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<td>Suburban</td>
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<td>M 25, F 4</td>
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<td>Suburban</td>
</tr>
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<td>8 LD and/or EBD</td>
<td>&quot;multi-grade&quot;</td>
<td>M 4, F 4</td>
<td>Self-Contained</td>
<td>Urban</td>
</tr>
<tr>
<td>Saddler et al., (2008)</td>
<td>6 exp</td>
<td>3 LD</td>
<td>4</td>
<td>M 4, F 2</td>
<td>General Ed</td>
<td>Urban</td>
</tr>
<tr>
<td>Stoddard and MacArthur (1993)</td>
<td>6 exp</td>
<td>6 LD</td>
<td>7, 8</td>
<td>M 4, F 2</td>
<td>Resource</td>
<td>Suburban</td>
</tr>
<tr>
<td>Wong et al., (1994)</td>
<td>18 exp</td>
<td>28 LD</td>
<td>8, 9</td>
<td>M 15*, F 13*</td>
<td>General Ed</td>
<td>Urban</td>
</tr>
<tr>
<td>Wong et al., (1996)</td>
<td>18 exp</td>
<td>29 LD</td>
<td>8, 9</td>
<td>M 24, F 14</td>
<td>Modified English</td>
<td>Urban</td>
</tr>
<tr>
<td>Wong et al., (1997)</td>
<td>21 exp</td>
<td>14 LD</td>
<td>9, 10</td>
<td>M 14, F 7</td>
<td>General Ed</td>
<td>Urban</td>
</tr>
</tbody>
</table>

Total 698 526 M 346*, F 174*  

*Note. exp = Experimental, cnt = control, LD = Learning Disabilities, EBD = Emotional Behavioral Disorder, MR = mental retardation, M = male, F = female, * = not all reported.
The range of settings was almost equally distributed between general education settings (Englert et al., 1991; Englert et al., 1992; Saddler et al., 2008; Wong et al., 1994; Wong et al., 1996; Wong et al., 1997), resource room (Deatline-Buchman & Jitendra, 2006; Englert et al., 1995; Hallenbeck, 1996, 2002; Stoddard & MacArthur, 1993;), and self-contained or alternative (Hine et al., 1990; Morris Kindzierski, 2009; MacArthur et al., 1991; MacArthur et al., 1995).

Interventions

Improving students’ writing was the primary instructional goal of all fifteen studies included in this review. Four instructional approaches were implemented. The first to be discussed, Cognitive Strategy Instruction in Writing (CSIW), is a socially-mediated instructional program with a strong emphasis on dialogue between students and teachers and was implemented in five studies (Englert et al., 1991; Englert et al., 1992; Englert et al., 1995; Hallenbeck, 1996, 2002). Interactive Dialogue, another instructional approach with a strong emphasis on dialogue between writers, focused on a combination of interactive dialogue, process writing and strategy development (Deatline-Buchman & Jitendra, 2006; Wong et al., 1994; Wong et al., 1996; Wong et al., 1997). Peer-revision was the focus of four studies (MacArthur et al., 1991; MacArthur et al., 1995; Morris Kindzierski, 2009; Stoddard & MacArthur, 1993). One study examined peer support in Error Monitoring during writing and revision (Hine et al., 1990). One study taught a Sentence Combining strategy and examined the effect of peer support on the acquisition of the strategy and application of the newly acquired skills to writing (Saddler et al., 2008).

A frequently recurring instructional sequence, consisting of six steps of effective strategy instruction was implemented throughout this body of literature. A brief description of the six
steps is appropriate before examining the specific details of each study. Graham and Harris (1989) described the six steps as follows:

1. Develop background knowledge through discussion. The teacher assesses students’ prior knowledge of a topic through discussion of key terms, personal experiences, and pertinent examples, and pointing out how and when the strategy is beneficial.

2. Describe the strategy in detail. The teacher describes each step of the strategy, often using a mnemonic or a visual cue to support memorization.

3. Model the strategy. During this stage, the teacher plays the role of the learner and demonstrates application of the strategy in explicit detail. Teachers model self-talk, allowing students to hear the internal thought processes of a skilled writer (Brophy & Good, 1986; Swanson, 1999; Vaughn, Gersten, & Chard, 2000). When teachers model effective writing, it provides students with auditory and visual examples of what a fluent, competent writer does.

4. Memorize the strategy. Memorization is an important step in promoting both fluency with the strategy and generalization of the strategy to other settings.

5. Support the strategy through guided practice. During this step, the teacher and students often work together collaboratively through the students’ first attempts in applying a new strategy. As the student builds competence, the teacher gradually fades support while continuing to monitor carefully.

6. Practice the strategy independently. This last step is self-explanatory, except to add that booster sessions may be necessary over time, and additional support may be needed to support generalization. A synopsis of each study, grouped by instructional approach follows.

**Cognitive Strategy Instruction in Writing (CSIW).** Five long-range studies—running over the period of one to two school years—examined the effects of CSIW (Englert et al., 1991;
Englert et al., 1992; Englert et al., 1995; Hallenbeck, 1996, 2002). CSIW is based on dialogic model of instruction that systematically teaches multiple strategies for expository writing as a package referred to as POWER (plan, organize, write, edit/editor, and revise). Strategy instruction was delivered in four phases: (a) analyze text structure, (b) model, (c) guided practice and (d) independent practice. Teachers emphasized the oral vocabulary associated with expository writing, and made the writing process visible through the use of the use of think-sheets to record and diagram the strategies, self-talk and text structures. Separate think-sheets for each step in POWER helped students to compare and contrast different text structures and identify their unique characteristics. For example, the “P” in POWER referred to the planning think sheet that provided the student with a structure to organize their ideas. Internalization of the vocabulary of writers (e.g., the term “counter argument” when writing a persuasive response) was supported through self-questions on each think-sheet. Teachers and students engaged in discussion about expository writing, text structure processes and self-regulated learning, by using the think-sheets to frame their discussion. Strategies were combined, as appropriate, to address more than one facet of the writing process, such as planning and understanding the unique purpose of different text structures. Think sheets functioned as flexible, personal documents, intended to support the development of a common language and to help writers organize their thoughts.

The role of peers in the CSIW program was that of collaborator and editor, helping peers review their plans prior to writing and then reviewing drafts and making suggestions for revisions. An extension of previous CSIW work involved the incorporation of CSIW into a broad, cross-curriculum program. Englert et al. (1995) examined the effects of interactive work with reading and writing structured around thematic units on writing. Themes were used to
organize and connect literacy activities such that students worked with different text structures in both reading and writing. Writing activities included partner writing, story composition and response, morning news journal writing, sharing chair and author's center. Peer-assisted revision occurred during several of these activities. During partner writing, for example, students worked collaboratively with a peer or small group to produce written responses to readings, and to create stories. During the morning news, students dictated their stories to teachers while their peers asked questions to clarify the content for the news story. Journal entries were done individually, but students sometimes read their entry aloud to the class as part of the sharing chair experience.

The most explicit level of peer-assisted revision occurred during author's center. Following a process writing model (i.e. plan, organize, gather information, draft, edit, and publish) students were encouraged to work with peers throughout the writing process. Strategies for planning, drafting and revising were introduced to support specific tasks. Teachers scaffolded instruction through modeling conferences and gradual transfer responsibility to the students. Students learned to support each other's writing by listening, making suggestions for additions, deletions, clarifications and mechanical corrections.

**Interactive dialogue.** Four studies examined the effectiveness of the Interactive Dialogue intervention (Deatline-Buchman & Jitendra, 2006; Wong et al., 1994; Wong et al., 1996; Wong et al., 1997). Interactive dialogue studies focused on planning, writing and revising as a combined set of skills. As with the CSIW strategy, the goal of a shared language, intended to facilitate communication about their writing, was supported through classroom discussions, individual teacher-student conferences, and peer conferences. Teachers drew students into discussion about a particular topic, and then used the content of the discussion to model planning an essay. Students then practiced the technique by thinking-aloud through their own plan. After
discussing their plans with a peer or teacher, students would record the plan on computers. After writing a first draft from the plan, students participated in revision conferences with a teacher. Teachers read the essay aloud to the authors and used self-talk to model how an editor might pause to consider where revisions might be needed to clarify ambiguities, or add information. The teacher-editor would ask the author questions to draw information needed to resolve a problem. Depending on specific instructional goals, teachers continued in this manner to address clarity, cogency, thematic salience, mechanics, etc. After repeating the instructional process four times with the teacher, selected students were placed into homogenous pairs based on their level of proficiency with the steps of the strategy, and their personal compatibility. Under the supervision of their teacher, student-student dyads replaced the teacher-student conference. Students took turns in the role of "critic", repeating the revision steps they had learned from their teacher. They identified ambiguities in their peers’ essay, explained why a particular section was ambiguous and made recommendations for how resolve the problem. The process was monitored carefully by the teacher, and as much autonomy as possible was given to the student dyad. Teachers offered help only when it was necessary to prevent misinformation or to encourage the dyad to follow the process. Additionally, teachers asked student editors to elaborate on their critique of their peers’ essay to avoid arbitrary, unconstructive feedback.

Wong et al. (1996) and Deatline-Buchman and Jitendra (2006) examined the instructional format of Interactive Dialogue for opinion essays by teaching students to collaboratively support each other in generating arguments both pro and con for their topic. Students wrote first drafts on computers and then reciprocally edited each others’ essays for ambiguities and made suggestions for how the author could resolve the problem(s). Teachers monitored the student conferences, but kept their input to a minimum until the students had finished their role as editor. Only then
did the teacher make suggestions for improving the cogency of each student’s argument. Finally, students returned to their computers to make revisions on clarity and cogency, and finished their paper with teacher support using the COPS (capitalization, organization, punctuation and spelling) Strategy (Schumacher, Nolan & Deshler 1985).

The duration of the interactive dialogue studies varied. Deatline Buchman and Jitendra, (2006) was a short term study of six weeks, while the three Wong studies were mid-range studies, running approximately half a year (Wong et al., 1994; Wong et al., 1996; Wong et al., 1997).

**Peer revision.** Peer-revision was examined in four studies (MacArthur et al., 1991; MacArthur et al., 1995; Morris Kindzierski, 2009; Stoddard & MacArthur, 1993). MacArthur et al. (1991), MacArthur et al. (1995) and Stoddard & MacArthur (1993) examined the effects of reciprocal peer-revision on personal narratives of fourth through eighth grade students. Writing instruction occurred in a writer’s workshop setting that included mini-lessons and conferencing to generate essays on topics of their choice.

Following drafting, students were taught the Student Editor Strategy to structure specific revising activity, to increase student knowledge about revising, and to improve the overall quality of the students’ writing. The six steps of effective instruction framed teacher instruction on the strategy. Students first wrote personal narratives and informative essays on computers. They then revised essays with the support of peers. Revision was approached in two phases, substantive and mechanical. Students followed a reciprocal five-step procedure during peer editing: (a) authors read their paper aloud to their editors, (b) editors discussed what they liked best about their essay, (c) the editor reread the paper silently, (d) the editor made editing suggestions to the author, and (e) the editor discussed the editing suggestions with the author.
Student editors identified aspects of narratives that were not clear and areas where more information was needed to improve clarity and readability. By reciprocally working on each others’ papers in this manner, the Student Editor Strategy supported both cognitive and social aspects of revision while adding structure to the process writing approach. Stoddard and MacArthur (1993) identified four revision questions that guided editors in evaluating their partner’s work:

1. Parts? Does it have a good beginning, middle and ending?
2. Order? Does it follow a logical sequence?
3. Details? Where could more details be added?
4. Clarity? Is there any part that is hard to understand?

Writing and editing occurred in two phases. Phase one included writing independent drafts, followed by a peer-revision conference. The first conference focused on substantive revision. Following the conference, each author returned to their computer to consider their editors comments and make substantive changes. In phase two, authors returned to their editors for mechanical revisions. In the second conference, they discussed the substantive changes they had made and then edited one another's paper for mechanical errors before returning individually to the computers for final editing.

The effects of peer-revision in comparison to individual revision was further refined in the Morris Kindzierski (2009) study. Working with students with Emotional Behavioral Disorders (EBD), the effects of peer-supported versus individual revision of descriptive essays was compared. Teams of students revised either with a peer or independently, alternating conditions so that each student produced descriptive essays in each condition. Students were given a choice of two picture prompts, and 12 minutes to describe what was happening in the
picture. Students in both conditions edited their first drafts using an editing checklist with six criteria: (a) an interesting beginning, middle and ending sentence, (b) easy to understand, (c) interesting and different words, (d) clear and well organized, (e) boring, and (f) correct spelling and punctuation. In the peer-assisted revision condition, students reciprocally evaluated each other's descriptive responses. The editor asked the writer to orally evaluate their own work using the questions on the checklist, and then the editor selected two of the six areas in need of improvements and made suggestions for how the author might improve their essay. Students working in the independent condition evaluated their drafts using the same checklist, but without the support of a peer. Students rotated through both experimental conditions equally, allowing each student an opportunity to practice working independently and with a peer.

The peer-revision studies varied in length. Three of the four studies were short in duration ranging from two to eight weeks, with three to five sessions a week (MacArthur et al., 1991; Morris Kindzierski, 2009; Stoddard & MacArthur, 2003). MacArthur et al. (1995) was a long term study running for two years.

Error Monitoring. Error monitoring was examined by Hine et al. (1990). They investigated the effects of dyadic grouping on idea generation, error monitoring and correcting. Students were grouped into triads for story writing. For the first story, two students worked collaboratively, while the third student worked independently. With each successive story, students rotated roles so that each student had the opportunity to work with each other, and independently. They wrote stories based on picture prompts in three phases: (a) discuss picture prompts and plan with the teacher, (b) draft the story on computer, and (c) revise and edit. During the revision phase, students told researchers what they needed to change, and then the researchers identified additional changes that the student(s) had missed. Students returned to
computers to make final corrections. This study was a short term study running five times a week for four weeks.

**Sentence Combining.** Saddler, Behforooz, and Asaro (2008) replicated a sentence-combining study (Saddler & Graham, 2005) with the addition of peer interaction and generalization to story writing. They examined the effect of three sentence-combining strategies on the writing quality of six 4th-grade students. The three types of sentence combining included adjective insertion, phrase embedding, and the connectors (but and because). Six scaffolded lessons in each type of sentence combining began with students combining sample sentence using one of the above methods. After demonstrating proficiency with individual sample sentences, students were asked to transfer their newly acquired sentence combining skills to a revision task in which students revised a group of kernel sentences into paragraphs using sentence combining. Next they were given phrases and ideas which they combined and developed into sentences and paragraphs. In the final lesson, students applied their sentence combining skills to a story writing prompt. Instruction in each of the three sentence combining strategies was delivered through the same sequence of activities. The duration of this study was short, running three times a week for six weeks.

**Primary Measures of Writing Quality.** The quality of essays in this collection of literature was measured using a combination of two methods, holistic quality (see Table 2 for Holistic Quality: Pretest to posttest means, standard deviations, and significance measures,) and analysis of specific components (see Table 3) that contribute to quality (e.g. clarity, cogency, thematic salience, etc.). In holistic quality assessment scorers rate the essay through a wide-angle lens of multiple factors such as those indicated above, but without special emphasis on any one
in particular (Englert et al., 1991; Englert et al., 1995; Hallenbeck 1996, 2002; MacArthur et al., 1991; MacArthur et al., 1995; Stoddard & MacArthur, 1993). Specific component analysis asks

Table 2.

<table>
<thead>
<tr>
<th>Author</th>
<th>Text structure</th>
<th>Holistic quality</th>
<th>Pretest</th>
<th>M (SD)</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Englert et al., (1991)</td>
<td>Explanation</td>
<td>.30 (n/a)</td>
<td>1.12 (n/a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compare and Contrast</td>
<td>.83 (n/a)</td>
<td>1.02 (n/a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expert</td>
<td>.38 (n/a)</td>
<td>.75 (n/a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Englert et al., (1992)</td>
<td>Explanation</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Englert et al., (1995)</td>
<td>Explanation (1st Yr)</td>
<td>.16 (n/a)</td>
<td>.60 (n/a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explanation (2nd Yr)</td>
<td>.40 (n/a)</td>
<td>1.23 (n/a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expert (1st Yr)</td>
<td>0 (0)</td>
<td>.63 (n/a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expert (2nd Yr)</td>
<td>.43 (n/a)</td>
<td>1.36 (n/a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hallenbeck (1996)</td>
<td>Explanation</td>
<td>1.86 (n/a)</td>
<td>2.71 (n/a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expert</td>
<td>1.29 (n/a)</td>
<td>2.57 (n/a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hallenbeck (2002)</td>
<td>Explanation</td>
<td>1.50 (.58)</td>
<td>2.50 (1.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hine et al. (1990)</td>
<td>Stories</td>
<td>No effect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MacArthur et al., (1991)</td>
<td>Narrative</td>
<td>2.77 (1.77)</td>
<td>4.27 (1.25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MacArthur et al., (1995)</td>
<td>Narrative</td>
<td>2.38 (1.27)</td>
<td>3.48 (1.53)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Informative</td>
<td>2.27 (1.03)</td>
<td>2.90 (1.34)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saddler et al. (2008)</td>
<td>Stories</td>
<td>2.43 (.90)</td>
<td>4.55 (.86)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stoddard &amp; MacArthur (1993)</td>
<td>Narrative (Typed)</td>
<td>2.62 (.63)</td>
<td>5.92 (1.40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Narrative (Handwritten)</td>
<td>3.75 (1.86)</td>
<td>5.17 (1.44)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mean of individual student means: Raw data not provided, n/a = not available,
scorers to consider how effectively the writer met a specific criterion that affects quality (Deatline Buchman & Jitendra, 2006; Englert et al., 1991; Englert et al., 1995; Hallenbeck 1996, 2002; Morris Kindzierski, 2009; Saddler et al., 2008; Wong et al., 1994, Wong et al., 1996, Wong et al., 1997).

**Holistic quality.** Holistic quality scores improved from pre- to posttest for students receiving instruction in the CSIW interventions (Hallenbeck, 1996, 2002; Englert et al., 1991, Englert et al., 1992; Englert et al., 1995). These studies used a three-point holistic score based on the interest level of the paper and the effective use of organizational traits of the text structure (Englert et al., 1991, Englert et al., 1995; Hallenbeck, 1996, 2002). The holistic quality of expert essays more than doubled (Englert et al., 1991; Englert et al., 1995; Hallenbeck, 1996) and although modest, increases were also reported for compare/contrast essays (Englert et al., 1991).

Englert et al. (1995) reported scores for two experimental peer-revision groups: (a) students of first year Early Literacy Project teachers and (b) students of second year Early Literacy Project teachers. Both groups made gains in quality between pre- and posttest with the students of the more experienced ELP teachers making stronger gains than first year ELP teachers.

The Englert et al. (1992) study focused on the development of metacognitive knowledge of writing through socially mediated interventions. The writing assessments in this study were conducted to examine the correlation between metacognitive knowledge and writing competency. Therefore, raw scores for written products were not reported, however, correlations relative to quality that indicate a moderate correlation between knowledge of explanation text structures and the quality of explanation essays was reported as \( r = .496, p < .01 \).
An 8-point holistic quality scale, based on overall impressions of content, organization, and style, was used to assess holistic quality in three of the Peer-Revision studies (MacArthur et al., 1991; MacArthur et al., 1995; Stoddard and MacArthur, 1993) and in the Sentence Combining study (Saddler, 2008). They all found that the quality of final drafts improved following instruction. On narrative essays, MacArthur et al. (1991) reported significance at $t(12) = 3.86, p < .001$, and MacArthur et al. (1995) reported significance of $t(110) = 6.92, p < 0.001$. Additionally, MacArthur et al. (1995) assessed informative essays and reported significance at $t(106) = 4.70, p < .001$. Holistic quality nearly doubled between pretest and posttest assessments of stories following instruction in Sentence Combining that utilized peer-assistance (Saddler et al., 2008).

**Component measures of quality.** Component measures break down the combined elements that make up holistic quality, and assess the effects of individual components on the quality of writing. The following is an overview of each of the components used to measure quality in this body of literature.

**Organization.** Deatline-Buchman and Jitendra (2006) defined organization according to the Pennsylvania State writing assessments as follows: “The order developed and sustained within and across paragraphs using transitional devices, including introduction and conclusion,” (Pennsylvania Department of Education, 1992). At pretest the mean score for organization was zero but following instruction the mean score increased to 2.60 (0.49). Morris Kindzierski (2009) evaluated organization based on the percentage of students who included a clear introduction, body and conclusion. The percentage of students who included all three parts increased in the peer revision condition (draft 1 = 48%, draft 2 = 52%). Wong et al.
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**Table 3.**

*Means and standard deviations of component measures of quality*

<table>
<thead>
<tr>
<th>Author</th>
<th>Text Structure</th>
<th>Component of Quality</th>
<th>Pretest M (SD)</th>
<th>Posttest M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deatline-Buchman &amp; Jintendra (2006)</td>
<td>Opinion</td>
<td>Focus</td>
<td>0 (0)</td>
<td>2.60 (.49)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Content</td>
<td>0 (0)</td>
<td>2.0 (.00)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organize</td>
<td>0 (0)</td>
<td>2.60 (.49)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Style</td>
<td>0 (0)</td>
<td>1.80 (.40)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clarity</td>
<td>0 (0)</td>
<td>2.60 (.49)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cogency</td>
<td>0 (0)</td>
<td>2.60 (0.49)</td>
</tr>
<tr>
<td>Englert et al. (1991)</td>
<td>Explanation</td>
<td>Primary trait</td>
<td>1.47 (n/a)</td>
<td>5.76 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reader sensitivity</td>
<td>.67 (n/a)</td>
<td>1.61 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Productivity</td>
<td>1.56 (n/a)</td>
<td>5.01 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compare/Contrast</td>
<td>5.03 (n/a)</td>
<td>7.20 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reader sensitivity</td>
<td>.13 (n/a)</td>
<td>.16 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Productivity</td>
<td>3.23 (n/a)</td>
<td>4.60 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expert</td>
<td>2.53 (n/a)</td>
<td>5.29 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reader Sensitivity</td>
<td>1.00 (n/a)</td>
<td>2.31 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Productivity</td>
<td>.56 (n/a)</td>
<td>1.06 (n/a)</td>
</tr>
<tr>
<td>Englert et al. (1992)</td>
<td>Explanation</td>
<td>Primary trait</td>
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<td>n/a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reader sensitivity</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Englert et al. (1995)</td>
<td>Explanation</td>
<td>Primary trait- Yr 1</td>
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<td>2.74 (n/a)</td>
</tr>
<tr>
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<td>Reader sensitivity- Yr 1</td>
<td>.58 (n/a)</td>
<td>1.37 (n/a)</td>
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<td></td>
<td>Primary trait- Yr 2</td>
<td>1.80 (n/a)</td>
<td>5.45 (n/a)</td>
</tr>
<tr>
<td></td>
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<td>Reader sensitivity- Yr2</td>
<td>.58 (n/a)</td>
<td>3.23 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expert</td>
<td>.84 (n/a)</td>
<td>4.05 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reader sensitivity- Yr 1</td>
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<td>1.68 (n/a)</td>
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<td></td>
<td></td>
<td>Primary trait- Yr 2</td>
<td>2.96 (n/a)</td>
<td>7.43 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reader sensitivity- Yr 2</td>
<td>.75 (n/a)</td>
<td>2.57 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expert</td>
<td>6.71 (n/a)</td>
<td>10.00 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reader sensitivity</td>
<td>3.29 (n/a)</td>
<td>8.0 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Primary trait</td>
<td>6.71 (n/a)</td>
<td>14.29 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reader sensitivity</td>
<td>3.86 (n/a)</td>
<td>8.00 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reader Sensitivity</td>
<td>(3.20)</td>
<td>(3.59)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.75 (1.5)</td>
<td>6.00 (4.55)</td>
<td></td>
</tr>
<tr>
<td>Morris Kindzierski (2009)</td>
<td>Narrative</td>
<td>Supporting details</td>
<td>2.28 (n/a)</td>
<td>1.84 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personal reference</td>
<td>2.54 (n/a)</td>
<td>3.82 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Word repetition</td>
<td>2.12 (n/a)</td>
<td>1.87 (n/a)</td>
</tr>
<tr>
<td>Saddler et al. (2008)</td>
<td>Stories</td>
<td>Sentence Complexity</td>
<td>4.52</td>
<td>6.16 (1.89)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(21.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wong et al. (1994)</td>
<td>Narrative</td>
<td>Clarity</td>
<td>2.63 (.52)</td>
<td>3.38 (.44)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thematic salience</td>
<td>2.94 (.56)</td>
<td>3.50 (.46)</td>
</tr>
<tr>
<td>Wong et al. (1996)</td>
<td>Opinion</td>
<td>Clarity</td>
<td>1.56 (.57)</td>
<td>3.19 (.75)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cogency</td>
<td>1.16 (.24)</td>
<td>3.38 (.81)</td>
</tr>
<tr>
<td>Wong et al. (1997)</td>
<td>Compare/contrast</td>
<td>Clarity</td>
<td>2.29 (.54)</td>
<td>3.21 (.63)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aptness</td>
<td>2.18 (.51)</td>
<td>3.05 (.71)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organization</td>
<td>2.11 (.57)</td>
<td>3.53 (.61)</td>
</tr>
</tbody>
</table>

*Note.* (n/a) = not available
**Clarity.** Wong et al. (1994) defined an essay with a high clarity score as an essay that included complete ideas, and was understandable throughout. Clarity of narrative essays improved and strong effect sizes of 1.44 were reported. Wong et al. (1997) reported an increase in clarity of compare/contrast essays with an effect size of 1.71. In assessment of opinion essays, clarity means more than doubled from pretest to posttest (Deatline-Buchman & Jitendra, 2006; Wong et al., 1996).

**Thematic Salience.** Wong et al., (1994) defined an essay with high thematic salience as having a clear a well supported theme from beginning to end. Thematic salience improved significantly from pre- to posttest and with a strong effect size of 1.00.

**Reader Sensitivity.** A reader sensitivity score was defined by Englert et al. (1991) as the degree to which the author is sensitive to the intended audience, and takes ownership of their writing. They reported reader sensitivity scores that more than doubled in compare/contrast, explanation and expert essays. Englert et al. (1995) reported reader sensitivity scores that were three to five times higher in posttest analysis of expert and explanation essays. Hallenbeck (2002) reported less dramatic increases, but still reported scores that doubled from pretest to posttest.

**Productivity.** Productivity was measured by the number of unique ideas. Englert et al. (1991) found that productivity in explanation essays increased by more than three times from pretest to posttest, doubled in compare/contrast essays, an increased by 60% in expert essays.

**Primary Trait.** Primary traits are those components specific to a particular text structure, for example the setting in a story, or supporting details in an explanation essay. Students in peer-assisted conditions in the Englert et al. (1991) and Englert et al. (1995) studies substantially improved their primary trait pretest scores in explanation, compare/contrast, and expert essays from pretest to posttest. Hallenbeck (1996, 2002) had less dramatic primary trait increases in
expert and explanation essays, but still increased scores by 30% to 50% respectively from pretest to posttest.

**Aptness.** Wong et al. (1997) defined aptness as how appropriate the details are to the overall theme and composition. They reported growth in aptness (ES = 1.70).

**Cogency.** Cogency, defined by Wong et al. (1996) as “the degree of persuasiveness of the arguments presented” increased in opinion essays. Scores more than doubled from pretest to posttest assessments (Deatline-Buchman & Jitendra, 2006; Wong et al., 1996).

**Focus.** Deatline-Buchman and Jitendra (2006) again used definitions from the Pennsylvania standardized testing (Pennsylvania Department of Education, 1992). Focus is defined as, “The single controlling point made with an awareness to task (mode) about a specific topic.” At pretest the mean scores for focus was zero on the previously described 4-point Likert-scale. Following instruction, scores improved to a mean of 2.60 (0.49).

**Sentence Complexity.** Sentence complexity defines the length of thought-units within a sentence. This complexity measure was a near transfer measure of sentence combining instruction, and increased by 27% from pretest to posttest (Saddler et al., 2008).

In summary, students with disabilities generally write higher quality essays following instruction that includes peer revision. Specific observations relative to the change in quality will be examined in further detail in the discussion section.

**Affect of Peer-Revision on Writing Conventions**

The quality of an essay is the primary assessment of writing, but it was not the only writing convention assessed. In this review, statistical evidence was reported on five additional conventions of writing: (a) standard conventions (spelling, capitalization, punctuation, and
grammar), (b) length, (c) planning time, (d) composing time, and (e) sentence combining. The following are the findings of each of these writing conventions.

**Standard conventions.** Standard conventions were examined in four studies (Hine et al., 1990; MacArthur et al., 1991; MacArthur et al., 1995; Morris Kindzierski, 2009) and include spelling, punctuation, capitalization, and grammar (see Table 4 for Standard Convention Means (SD)).

Two studies assessed these standard conventions as a group without isolating attention on one specific convention (Hine et al., 1990; Morris Kindzierski, 2009). Both of these studies compared the effects of students working independently versus working with a peer on the error rate, and found that students working with a peer made fewer convention errors than students working independently.

Table 4.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Text structure</th>
<th>All Conventions M (SD)</th>
<th>Spelling Errors M (SD)</th>
<th>Punctuation Errors M (SD)</th>
<th>Capitalization Errors M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hine et al., (1990)</td>
<td>Stories</td>
<td>.25 (.16)</td>
<td>.20 (.15)</td>
<td>.26 (.31)</td>
<td>.33 (.38)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.16 (n/a)</td>
<td>.11 (.07)</td>
<td>.17 (.18)</td>
<td>.34 (.30)</td>
</tr>
<tr>
<td>MacArthur et al., (1991)</td>
<td>Narrative</td>
<td>.25 (.14)</td>
<td>.25 (.13)</td>
<td>.34 (.38)</td>
<td>.35 (.35)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.16)</td>
<td>(.13)</td>
<td>(.31)</td>
<td>(.38)</td>
</tr>
<tr>
<td>MacArthur et al., (1995)</td>
<td>Narrative</td>
<td>.22 (.14)</td>
<td>.22 (.14)</td>
<td>.36 (.35)</td>
<td>.35 (.38)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.14)</td>
<td>(.12)</td>
<td>(.13)</td>
<td>(.35)</td>
</tr>
<tr>
<td>Morris Kindzierski, (2009)</td>
<td>Narrative</td>
<td>13.3 (n/a)</td>
<td>13.3 (n/a)</td>
<td>13.3 (n/a)</td>
<td>13.3 (n/a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11.34 (n/a)</td>
<td>11.34 (n/a)</td>
<td>11.34 (n/a)</td>
<td>11.34 (n/a)</td>
</tr>
</tbody>
</table>

Note: (n/a) = not available, Ind = Individual,
The remaining two studies assessed spelling, punctuation and capitalization as individual components. MacArthur et al. (1991) assessed the three components at pretest to posttest across three drafts. The first two drafts were written and revised independently, and the final draft was revised using peer-revision. In pretest, there was little change in the spelling error rate between drafts. However, in posttest, spelling error rates declined with each subsequent draft. Punctuation error rates declined with each subsequent draft in both pretest and posttest, with the lowest rate being in the peer-revision condition. Capitalization errors were stable throughout the drafts pretest, but declined with subsequent drafts at posttest, with the greatest reduction occurring in the peer-revision draft. MacArthur et al. (1995) assessed spelling, punctuation and capitalization error rates of final drafts at pretest and posttest across two text structures. In both narrative and informative essays, all three types of errors decreased in the posttest peer-revision condition with the greatest reduction occurring in the punctuation error rate in narrative essays, and the smallest reduction was in the capitalization error rate in informative essays.

**Length.** The length of compositions, or word count, was measured in six studies (Deatline-Buchman & Jitendra, 2006; Englert et al., 1992; Englert et al., 1995; MacArthur et al., 1995; Morris Kindzierski, 2009; Stoddard & MacArthur, 1993). Results of word counts vary widely between studies (see Table 5 for Word Counts). In the case of three studies, word counts increased two to three times between pretest and posttest (Deatline-Buchman & Jitendra, 2006; Englert et al., 1992; Englert et al., 1995), while the remaining three studies reported only modest increases or virtually equal word counts at posttest (MacArthur et al., 1995; Morris Kindzierski, 2009; Stoddard & MacArthur, 1993).
Planning and composing time. Deatline-Buchman and Jitendra (2006) were the only team of researchers to specifically measure planning and composing time. They reported a four-fold increase in both times from pretest to posttest. The mean time for planning at pretest was 2.34 (SD = 1.53) minutes and increased to 8.53 (SD = 2.50) minutes at posttest. The mean time for composing at pretest was 6.04 (SD=2.38) minutes and following instruction, posttest mean composing time was 25.08 (SD = 0.55) minutes.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Text structure</th>
<th>Pretest M (SD)</th>
<th>Posttest M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deatline-Buchman and Jitendra (2006)</td>
<td>Narrative</td>
<td>39 (22)</td>
<td>142 (44)</td>
</tr>
<tr>
<td>Englert et al. (1992)</td>
<td>Explanation</td>
<td>126 (n/a)</td>
<td>280 (n/a)</td>
</tr>
<tr>
<td></td>
<td>Expert</td>
<td>86 (n/a)</td>
<td>259 (n/a)</td>
</tr>
<tr>
<td>Englert et al. (1995)</td>
<td>Expert (Yr 1)</td>
<td>9 (n/a)</td>
<td>32 (n/a)</td>
</tr>
<tr>
<td></td>
<td>Expert (Yr 2)</td>
<td>23 (n/a)</td>
<td>60 (n/a)</td>
</tr>
<tr>
<td></td>
<td>Explanation (Yr 1)</td>
<td>6 (n/a)</td>
<td>20 (n/a)</td>
</tr>
<tr>
<td></td>
<td>Explanation (Yr 2)</td>
<td>18 (n/a)</td>
<td>39 (n/a)</td>
</tr>
<tr>
<td>MacArthur et al. (1995)</td>
<td>Narrative</td>
<td>40 (31)</td>
<td>65 (43)</td>
</tr>
<tr>
<td></td>
<td>Informative</td>
<td>39 (26)</td>
<td>51 (37)</td>
</tr>
<tr>
<td>Morris Kindzierski (2009)</td>
<td>Narrative</td>
<td>88 (n/a)</td>
<td>84 (n/a)</td>
</tr>
<tr>
<td>Stoddard and MacArthur (1993)</td>
<td>Narrative (typed)</td>
<td>101 (26)</td>
<td>223 (86)</td>
</tr>
<tr>
<td></td>
<td>Narrative (handwritten)</td>
<td>138 (53)</td>
<td>170 (30)</td>
</tr>
</tbody>
</table>

(n/a) = not available
**Sentence combining constructions.** Saddler et al. (2008) counted the frequency of three sentence combining constructions—adjective insertion, phrase embedding, and connectors but and because—in pretest to posttest as a near transfer application of the sentence combining strategies taught during instruction. At pretest, students used a mean of 4.69 (SD = 1.92) sentence combining constructions in their stories, and following instruction, the mean number of constructions was 6.17 (SD = 1.82).

**The Affects of Peer-Revision on Social Validity.**

Social validity measures are designed to assess the users’ satisfaction with a strategy, instructional method, or product, and determine how useful that method or product is to the individual (Salvia & Ysseldyke, 2004). Deatline-Buchman and Jitendra (2006) were the only researchers that formally assessed social validity. Using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) students indicated that they liked the intervention in terms of planning (M = 5.0), peer planning (M = 4.8), and peer revision (M = 5.0). Students felt that their writing improved (M = 4.8), they were more confident (M = 5.0), and more motivated (M = 5.0). Students reported that they planned to use the strategy in other classrooms and share the strategy with other students (M = 5.0). The teacher also completed the Likert-scale assessment and rated all of the previous statements a 5.0, except motivation to learn which was rated a 4.8.
Discussion

Each of the fifteen studies presented in this review provided evidence that the addition of a peer-assistance has the potential to enhance writing outcomes. Only five studies isolated the effects of peer-assistance through experimental design, contributing to a clear view of the specific effects peers may have on each others’ writing (Hine et al., 1990; MacArthur et al., 1991; Morris Kindzierski, 2009; Stoddard & MacArthur, 1993; Wong et al., 1994). However, it is not possible to attribute all of the growth reported to the addition of peer-assistance. In the remaining ten studies, peer-assistance was one component of a broader writing or literacy intervention.

Definitive answers to the research questions posed were not obtainable from information provided. However, there is evidence of trends that help to assess the effects of peer-revision.

Instructional Methods and Peer-feedback.

This review provides evidence that students with disabilities can make meaningful contributions to their peers in support of their writing. In both highly structured interventions, such as peer-revision and sentence combining, and more opened ended dialogue based strategies, such as the CSIW and interactive dialogue strategies, students participated effectively with their peers and improved their writing skills. Students were able to provide both surface level and substantive feedback to their peers.

Several authors discussed how flexible students were when working together to address the specific needs of their partner. Hine et al., (1990) reported that because students were left to design their own system for completing the collaborative task, they employed a variety of tactics specific to the unique needs or ability levels of the members of the dyad. Some students chose to
relinquish particular tasks to the partner because they acknowledged they were not good at the particular task. Other students took turns making suggestions and corrections. While other students had one person complete their part of the task and then the other person checked their work after the fact.

Saddler et al. (2008) also reported that students were flexible to their partners’ needs and adapted their support accordingly. The pairs developed mutually supportive relationships which they believed contributed to growth in sentence combining for both members. Saddler also reported an interesting dynamic of dyad work. When a dyad is working on a new skill, their level of comprehension is not lock-step. One member of the dyad inevitably grasps the concept before the other. In this study, authors observed that the member with a higher level of understanding took the lead and explained the task to the other member. One might question whether the quality of that feedback was as effective as the feedback students would get from a peer without a disability, or from their teacher.

Wong et al. (1994) addressed this question. At first glance, Wong’s findings appear neutral, having reported minimal gains when comparing the group that did peer-conferencing versus the group that did teacher/student-conferencing. Despite insignificant findings, this information provides valuable insight into the quality of peer feedback. Wong and her colleagues found that peer-assisted groups providing one another with writing feedback scored at least as well as groups working with teacher support.

Saddler et al. (2008) also supported the quality of feedback provided by students with disabilities in comparison to those without disabilities. They found in prescreening that only three of the students screened met the study’s full criteria for LD, so to complete the participant
pool, they included three low achieving writers. Both the LD and the low achieving writers were able to support one another effectively and made gains in their sentence combining skills.

**Quality**

The mean quality of students’ writing improved in fourteen studies, with the only exception being Hine et al. (1990). The overview of pretest to posttest means indicated a difference in the magnitude of growth across studies. This may be due to a difference in difficulty of the content. Some text structures are more challenging than others (Mason, 2004). Students may have more background knowledge and experience with a particular text structure. Intervention effectiveness may be influenced by instructional methods, the amount of guided practice, students’ ability, and the quality of instruction, to name just a few possibilities (Graham, Harris, MacArthur, Schwartz, 1991). Finally, the study design, in terms of duration, frequency of instruction, relation between intervention and assessment methods, instructional fidelity and scoring reliability directly influence student performance (Gall, Gall & Borg, 2003).

Examining the results of studies that measured writing using more than one text structure helps to illustrate this point. For example, Englert et al. (1991) reported means for three text structures with very different results, (see Tables 3 and 4). The greatest growth occurred in the explanation text structures, where measures of quality indicators increased two to four times in posttest assessments, while the change in quality of the compare/contrast, and expert essays was considerably smaller. However, when we examine the baseline scores for all three text structures, explanation essay scores were the lowest in two of the four measures, allowing for the greatest opportunity for growth.

Similar differences between explanation and expert text structures were found in the Englert et al., (1995). Higher rates of growth were seen in the explanation essays, but baseline
scores were higher in two of the four quality measures for the expert essays, again, allowing for more opportunity for growth in the explanation essay. When writers are faced with more challenging structures, the task of peers supporting each other is more challenging as well.

In contrast, Hallenbeck (1996) assessed writing at pretest and posttest using explanation and expert text structures. Comparison of the baseline scores and the amount of growth between pretest and posttest indicates very little difference in student performance between the two structures. Students in this study apparently found the two text structures to be equally challenging. Although it is not possible to determine from the information provided whether students had the same level of background knowledge and prior experience with both text structures. Regardless, instruction was equally effective and peers were equally capable of supporting each other.

Several authors reported caveats and explanations that affect the quality measures in their studies. Hallenbeck (2002) reported that one student in his single case study had significant behavioral issues at the end of the school year and was refusing to work As a result, his posttest scores were lower than his pretest scores, however they were not reflective of his growth and capability. Despite this, the group means increased from pretest to posttest, even though they did not reflect the magnitude of change that might have been observed had this student eagerly participated through the end of the study.

Stoddard and MacArthur (1993) also qualified the magnitude of their findings. They speculated that as students gained revision skills in peer conferences, they began to internalize the strategy and use it in future writing sessions. Evidence of this theory can be seen in the examination of between draft changes in quality.
Two studies assessed the quality of changes made between drafts to determine if they were an improvement or a detriment to the overall quality of the essay (MacArthur et al., 1991; Stoddard & MacArthur, 1993). They reported results on a four point rational number scale (-2 to +2), with the sign of the number indicating a positive or negative influence on quality.

MacArthur et al. (1991) reported that at pretest, the changes students made between drafts had negligible effects on the quality of their essays. However, following instruction, the changes between drafts significantly improved the holistic quality of their narrative essay \( t(12) = 2.21, p = .024 \). Stoddard and MacArthur (1993) also reported that the changes made between drafts improved holistic quality for all students. Using the same -2 to +2 scale, they determined that when students were revising independently prior to instruction, there was little change in quality as a result of revision (baseline change = 0). However, following instruction both the peer-revision and the individual-revision conditions improved the quality of their narratives between drafts (peer-revision post-instruction range = 0 to 1.5, independent-revision post-instruction range 0.25 to 1.25).

Quality, and change in quality, has thus far been examined at the macro level, or in terms of the whole essay. This final examination takes place at the micro level, or the characteristics of each individual change. MacArthur et al., (1991) counted the number of changes and assessed whether each change was a substantive (content-altering) change, or a surface level (mechanical) correction. In terms of the number of changes, students in the peer-revision condition made significantly more changes in posttest (pretest .39, posttest 2.39, \( p = .006 \)). In terms of the level of change, posttest comparisons of peer-revision and individual-revision indicate that students working in peer-revision groups made significantly more substantive changes (peer-revision
2.39, individual 1.23, p = .014). There was no significant difference between pre- and posttest non-surface revisions when students were working individually.

Additionally, the effect of each change was categorized in two ways: (1) changes that do, or do not alter meaning and (2) changes that improve, or do not improve quality. These results were reported as a percentage of total changes. The majority of both substantive changes (pretest 75% to posttest 81%) and surface level changes (pretest 63%, posttest 74%) improved the quality of the essays. Similar percentages were reported for the changes that effected meaning. These findings lend support to the theory that writers with disabilities who receive instruction in peer-assisted revision make higher quality changes, and those changes improve the overall quality of their narrative essays.

Researchers added student testimony to the empirical evidence. Students in the Stoddard and MacArthur (1993) study anecdotally reported that conferencing with their editor changed the way they wrote future first drafts. They reported remembering the prior feedback and the comments of their peer editor as they were writing. Consequently, these students began to anticipate their editor’s comments and would self-edit accordingly during the drafting process. Thus, as the study progressed, the magnitude of changes made between drafts was reduced because the quality of the first drafts improved. If these informal observations are accurate, this is a very important point. We want students to take what they learn from peers and internalize it for future independent use, and generalize the knowledge to other settings and tasks.

Morris Kindzierski (2009) makes an interesting observation about the subjective nature of elements of quality. This author explained that while personal references are not traditionally considered a strong point in descriptive essays, students in some communities may view them differently. Further, some cultures value a strong oral tradition of storytelling and teach though
personal experiences, and therefore, children in these families view personal references as a strong point in descriptive writing. Supporting evidence for this theory is seen in the mean increase in the number of personal references included following peer-revision conferences.

Writing Conventions

In addition to contributing to the quality of written pieces, there is evidence that students with disabilities are able to support one another in other aspects of the writing process as well. With the use of checklists and think-sheets, students were able to follow a step-by-step procedure to help their peers to identify mechanical errors. This supports the theory discussed in the introduction that students with disabilities have particular trouble with identifying their own errors as a result of a disconnect between what they intend to communicate and what they actually write (MacArthur, Schwartz & Graham, 1991). If their mind is supplying missing information and correcting errors, they are incapable of identifying the error in their own work. For example, if a student uses phonetic spelling to write the word “knife” the student is not going to recognize it as incorrect when he reads “nife”. The peer editor may know the correct spelling of “knife” and be able to identify the error.

The variability in word count leads to two points of discussion. First, in the case of the studies where the count dramatically increased, results may be attributable the request of the peer editor for more information to clarify ambiguities. The second point, refers to the group of studies in which there was little change in word count. Since the quality measures indicate improvement in those studies, it stands to reason that the improvement occurred as a result of refining the text, rather than just adding more. Therefore, the length of a response is not a reliable measure of quality (Calfee & Greitz Miller, 2007).
Although planning and composing times were only examined in one study, it would seem reasonable that more time invested in planning and composing would result in higher quality writing. The inclusion of peer-revision adds to the time investment, so the question would be to determine if the improvement to outcomes merit the investment of time.

**Social Validity**

Social validity is an abstract, subjective construct to measure and is often assessed using a Likert-scale or interview format. As previously reported, only one study formally measured social validity, however, multiple studies reported anecdotal observations and comments relative to social validity (Hallenbeck, 1996; Hine et al., 1990; Morris Kindzierski, 2009; Saddler et al., 2008; Stoddard & MacArthur, 1993).

When assessing the academic benefits of peer-assisted revision students reported that their peers were helpful and that other students would benefit from the same instruction especially in brainstorming ideas, organizing notes, and receiving peer-editors’ suggestions (Hallenbeck, 1996). Saddler et al. (2008) observed that when students work together in a dyad, one student will grasp the concept or new skill first, and then help their partner to learn it. Students reported that working with a peer-revision editor changed the way they approached writing their first drafts. They remembered their editors’ previous comments, and tried to make their subsequent first drafts better by applying their editor’s feedback as they composed (Stoddard & MacArthur, 1993).

A common thread throughout much of this literature is the theory that peer-assistance supports the creation of a community of writers who share a common vocabulary. Establishing a working vocabulary of writing processes language is instrumental in facilitating effective communication between peers. When everyone uses the same language, the clarity of
communication is greatly enhanced, and the likelihood that everyone will be able to participate in the discussion increases.

Several studies reported student commentary on how they felt about working with peers. Students in the Morris Kindzierski (2009) study expressed a preference for working with a peer, and asked their teacher why they couldn't always work with a peer. Additionally, the author reported a positive change in student relationships during peer-revision activities. She describes a reduction in verbal outbursts, inappropriate comments, and personally rude statements. MacArthur, Schwartz & Graham (1991) reported that during self-efficacy interviews, students talked about the value of working with peers and expressed positive feelings about the experience. Hine et al. (1990) reported that much of the verbal exchange was supportive, however students were not always enthusiastic and appreciative of their partner's feedback, and sometimes the exchange took on a negative tone.

**Limitations of Research**

The primary limitation in answering the questions posed in this review is the lack of studies that isolated peer interaction as an independent variable. Without experimental control of peer interaction, it is difficult to attribute affects specifically to peer-assistance.

Measurement of the social validity of the peer interaction was almost completely absent. Given that all fifteen studies incorporated peer interaction, the very limited discussion of social validity is surprising. Only Deatline-Buchman et al., (2006) conducted formal analysis of social validity relative to how students felt about peer-revision, and how the teachers viewed the value of peer-revision from both an academic and a social point of view. Unfortunately, the absence of formal observation not only limits the understanding of academic affects of peer-revision, but also the social implications.
Future Research

Future research in peer-revision involving students with disabilities is limited only by time and available resources. The need to experimentally isolate the peer interaction element of instruction is critically important to understanding the role of peer-revision in the growth of writers. Future work in component analysis, isolating peer interaction is needed to determine if the peer element is a necessary part of the success of a particular strategy. Additionally, further insight would be garnered by recording peer-revision sessions. The transcription and coding of student discussion would be a productive assessment tool. From transcripts, researchers might be able to identify multiple factors that influence writing. For example, what makes some interaction more effective than others, what stages of interaction are most productive, what effect does peer-revision have on planning and composition time, as well as individual component measures of quality?

Another area of further research needed is examination of the effects of peer-revision with students with disabilities other than LD. With the exception of a few students with emotional disorders, and even fewer with mild MR, the subjects in this body of literature were students with LD. Additionally, more work is needed in the area of mixed ability grouping, with examine of the effects on both members of a dyad.

Finally, there is no evidence of experimental examination of the effects of peer-revision on social interaction beyond the writing conference. Further research is needed to examine the effect of academically-structured social interaction on social interaction outside of the writer’s conference.
Conclusion

This review provides encouraging results supporting the use of peer-revision in inclusive settings as well as exclusively special education settings. These strategies provide meaningful support for students with and without disabilities, as well as their teachers working to support their growth as writers. In our current strained economic times, with many states planning widespread teacher layoffs, the demands on remaining teachers will no doubt increase. Writing interventions that include peer-revision may be especially helpful in large classrooms. Peer-revision provides more opportunities for students to receive feedback and a higher level of active engagement in writing since students are not waiting their turn to conference with their teacher.

For students with disabilities, the opportunity to have their work reviewed by someone with a fresh perspective can be helpful in identifying which parts need additional work, rather than rereading their own work and being unable to identify the problems. This review includes evidence that with practice, students begin to internalize their editor’s feedback, increasing their independence as well as the quality of their writing. This is especially good news for students with disabilities who may not have recognized the weaknesses in their own work prior to peer-revision.

Effective peer-revision requires time and support to develop. Teachers must prepare the materials, teach students how to give constructive feedback, model the strategies, and support guided practice through to independence, and monitoring conferences for accuracy and integrity of feedback. Simply pairing students into dyads and leaving them to their own devices is unlikely to result in improved outcomes. Effective peer-revision instruction takes an investment in time, especially at the beginning, but the potential benefits to the classroom community of writers may result in great returns on the investment.
References

References marked with an asterisk indicate studies included in the review. The in-text citations to studies selected are not preceded by asterisks.


*Morris Kindzierski, C. M. (2009)." I like it the way it is!": Peer- revision writing


Appendix B
Assessment Instructions

Phase A-Baseline and Phase B- Post-Instruction POW + TREE Assessment

Assessment overview:

Each student will plan and write a persuasive response based on one of two provided prompts. They will be asked to review and revise their plan prior to writing.

1. Position each student at a desk with a pencil and two pieces of paper. Have them write their name and the date at the top.

2. Please listen carefully.

3. Please select one question. Plan and write a paragraph explaining your answer to the question. You will have ten minutes to plan and write, plus additional time off the clock to review your plan before writing.

4. Read the questions aloud from the prompt slip and then give the slip to the student. Please select one and only one question to answer. You may start planning when I tell you to begin.

When you are finished planning, before you start to write your response, please raise your hand.

Do you have any questions? Are you ready to begin planning?

5. You may begin. (Watch the student to be sure that they don’t start immediately writing a paragraph. If it looks like they are writing, ask them if they have finished planning. If they respond “yes”, stop the clock and proceed to step six.)

6. When student raises hand following planning, pause the clock and say: Please take a few minutes to think about your plan and what you might revise that could make your response stronger. If the student has written a plan on paper, say Mark any changes that you believe
would improve your paragraph using the green pen. When you are ready to begin writing your response, please raise your hand. Replace the student’s pencil with a green pen.

7. When student raises hand after revising their plan, replace the green pen with a pencil again. Be sure the student has a clean piece of paper on which to write a response.

8. Say to the student, please use your plan to write a paragraph explaining your answer. You have X (read remaining time from the timer) to complete your response.

9. Tell the student to begin and restart the clock. When there is one minute left, give the student a one minute warning. Ask the student to stop when the timer rings.

10. Collect all materials and thank them for their hard work.

Phase C- Assessment overview Post-Instruction POW + TREE + LEAF – directions specific to this assessment have been highlighted

1. Position each student at a desk with a pencil and two pieces of paper. Have them write their name and the date at the top of each.

2. Please listen carefully.

3. Please select one question. Plan and write a paragraph explaining your answer to the question. You will have ten minutes to plan and write, plus additional time off the clock to review your plan with a peer before writing.

4. Read the questions aloud from the prompt slip and then give the slip to the student. Please select one and only one question to answer. You may start planning when I tell you to begin. When you are finished planning, before you start to write your response, please raise your hand. Do you have any questions? Are you ready to begin planning?

5. You may begin. (Watch the student to be sure that they are recording their plan on paper.)
6. When the students raise their hand following planning, pause the clock and turn their plan face down on the desk. Ask them to wait quietly. When both students have finished planning, give each student a LEAF Peer Revision Guide and a green pen. Have them proceed into a LEAF conference. *Please take a few minutes to review your plans with your partner. Mark any changes that you believe would improve their paragraph using the green pen.*

7. When students complete their conference, allow time for them to mark changes on their plan. *When you are ready to begin writing your response, please raise your hand.*

7. When students raise their hands after revising their plans, replace the green pen with a pencil again. Be sure the student has a clean piece of paper on which to write a response.

8. Say to the student: *Please use your plan to write a paragraph explaining your answer. You have X minutes* (read remaining time from the timer) *to complete your response.*

9. Tell the student to begin and restart the clock. When there is one minute left, give the student a one minute warning. Ask the student to stop when the timer rings.

10. Collect all materials and thank them for their hard work.
Appendix C

Holistic Quality Scoring Guide

**Score of 8.** Persuasive response includes a belief/topic sentence, three or more reasons, an explanation for at least 3 reasons, a counter reason & a refute, and an ending sentence. Response is organized into a paragraph(s) with sentences.

**Score of 7.** Persuasive response includes a belief/topic sentence, three or more reasons, an explanation for at least 3 reasons, a counter reason, and an ending sentence. Response is organized into a paragraph(s) with sentences.

**Score of 6.** Persuasive response includes a belief/topic sentence, three or more reasons, an explanation for at least 3 reasons, and an ending sentence. Response is organized into a paragraph(s) with sentences.

**Score of 5.** Persuasive response includes a belief/topic sentence, 3 or more reasons, 1 or 2 explanations, and an ending sentence. Response is organized into a paragraph(s) with sentences.

**Score of 4.** Persuasive response includes a belief/topic sentence, 2 or more reasons, and 2 or more elements of a persuasive response (i.e. explanation(s), counter reason, ending). Response is organized into a paragraph(s) with sentences.

**Score of 3.** Persuasive response includes a belief/topic sentence, 1 or more reasons, and some other element of a persuasive response (i.e. explanation or ending sentence). Response is organized into a paragraph(s) with sentences.

**Score of 2.** Persuasive response includes a belief/topic sentence with a reason or a list of reasons. Response is not organized using paragraph structure.

**Score of 1.** Persuasive response includes a belief/topic sentence with no other persuasive elements; OR includes a belief/topic sentence, but then argues both sides of the argument (i.e. Student’s position is not clear.)

**Score of 0.** No parts of a persuasive response are provided.
Appendix D
Feedback Quality Rubric

Response #__________
Author________________________
Editor _________________________

2 = Substantial Improvement
   - Change adds new information related to the argument
   - Change adds a new primary trait

1 = Moderate Improvement
   - Change clarifies existing information
   - Change adds new information only vaguely related to the argument

0 = No Improvement
   - Change is unrelated to the topic
   - Change did not add any new information
   - Change was too vague to be useful

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___________Total number of suggestions

___________Number of suggestions incorporated into written responses
Appendix E
POW + TREE Lesson Plans and Materials

POW + TREE Plans adapted from Mason, Kubina, Valasa, & Cramer (2010)

POW + TREE
Lesson 1

Lesson Overview
The purpose of this first lesson is to develop the students’ background knowledge and discuss the strategies. The teacher will introduce the POW+ TREE strategies. The students will find parts in an anchor paper paragraph. It will be important to establish students’ understanding of the term “persuade.” The students will look for TREE parts in a persuasive paragraph that they had previously written. They will graph the correct number of parts on charting paper. It will be important for the teacher to discuss that although a student may have a part, that part could be made better. Students should be given the opportunity to share how they would make their paragraph better.

Student Objectives
- Orally state what makes a good persuasive paragraph
- Find TREE parts in a paragraph read in class
- Locate TREE parts in their own previously written paragraph.

Materials
- POW + TREE CHARTS
- TREE graphic ORGANIZERS
- Paragraph example (City or Country)
- Students’ previously written paragraph
- Transition word chart
- Graphing sheet
- Learning contract
- Paper, green pens, scratch paper
Tell the students that you will be working with them to learn a new strategy. Ask the students to tell you what they know about the word “strategy.” Ask them to provide examples for strategies used in school and in other places (e.g., sports). Tell the students that they will be learning a new writing trick or strategy - one that will help them write a single paragraph that tells the reader what they believe or what they think about something. This is called a persuasive paragraph. Describe and discuss both words to be sure that “persuasive” and “paragraph” makes sense to them.

Develop the Strategy and Self-Regulation

Step One – Develop Background Knowledge

Introduce POW. Put out the POW + TREE CHART so that only POW shows. Tell them that POW gives them POWER when they write because of the 3 steps:

P – Pick my idea.
O – Organize my notes
W – Write and say more

Tell the students that POW is more powerful when combined with other writing strategies.

Describe and discuss what makes a good persuasive paragraph. Some students may not be at all familiar with this. Be sure to tell students that:

A. A good persuasive paragraph tells a reader what I believe, gives a reader at least three reasons why I believe it, an explanation for each reason, and has an ending sentence. The best paragraphs include a counter reason too! A counter reason is the other side of the argument. (You will be practicing this with them, so you just want to be sure they have the idea here).

B. Good persuasive paragraphs make sense and have several parts. Tell the students that they will learn a trick or strategy for remembering the parts of a good persuasive paragraph.
Step Two – Introduce TREE

_____ Introduce TREE. Uncover the rest of the chart. Say, “Let’s look at what the parts of a good persuasive paragraph are.” Tell the students to look at the chart. Go over each part of TREE, describing how it relates to a living TREE.

T The topic sentence is like the trunk – it is strong and every part of the tree is connected to it.

R The reasons are like the roots. They support the trunk. The more roots (or reasons) a tree has the stronger the trunk will be.

E The next part of TREE is “explain.” Explain means to tell more about your reason. The more you explain your reason, the stronger the trunk will be. Explaining why you do not believe in a counter reason (the other side of the argument) makes the trunk stronger too.

E The ending is like the earth. It wraps around the tree (like wrap it up).

Step Three – Find Parts in a Paragraph

_____ Tell the students that now they are going to read a persuasive paragraph to find out if the writer used all of the parts - what I believe, at least three reasons why, an explanation for each reason, a counter reason with explanation, and an ending sentence. (Leave out the TREE CHART where students can see it.)

_____ Introduce transition chart. Tell the students that this chart shows a list of words that can be used to help the author write their paragraph. You will also look for transition words used by the author.

_____ Lay out a TREE GRAPHIC ORGANIZER. Point out the TREE Reminder at the top, and review what it stands for. Point to the boxes and tell them that when they find a part you will write this is the box. In other words, they tell you the part, you (the teacher) write the notes.

______ Give each student a copy of City or Country; ask students to read along silently while you read the paragraph out loud. Tell them to raise their hands when they hear what the writer believes, each reason why, an explanation, and an ending sentence or if they hear/see a transition word. Each time you find a reason why, discuss with the students what words the writer used to show that a reason is being given. Also note how the writer gives the reason and then tells more about the reason (expands on the reason). Be sure to point out the counter reason and how the
author explains it! It is OK to move around the chart out of order as you find the parts - they don’t have to be found in order. Call on students as they raise their hands (each student should have a turn). As they identify each part, you write each in the appropriate space on the graphic organizer: do not use full sentences - do this in note form.

_____ Repeat this for another essay (practice essay #2, Skateboard at Shopping Malls) – DO THIS ONLY IF NEEDED

Step Four – Look at Current Writing Behavior

_____ Next, hand the students their previously written paragraphs (refer to assessment).

_____ Tell students to read their paragraph and see which parts they have. Be sure to note that a counter reason does not count if they have not explained why the counter reason did not change their belief. Have them list their parts in note form on a graphic organizer sheet.

_____ Briefly note, with each student, which parts they have and which they don't. Note transition words. As a group, briefly note common parts missing.

_____ Note also that even though we have a part, we might be able to make that part better next time- this makes paragraphs more fun to write and more fun to read. Discuss examples of how they could do each of the following:
- can give more than 3 reasons
- can use a counter reason but must explain it
- can use good word choice, or “million dollar words”.
- can use an interesting first sentence
- can use an interesting ending sentence

Step Five – Graph Current Level of Performance and Set Goals

_____ Give each student a GRAPHING SHEET - have each student fill in the graph for the number of parts they had in their pretest paragraph. Be very positive by reminding them that you are just now learning the trick of writing good paragraphs. Explain that they fill in one space for each step in TREE: 1 for topic, 1 for each reason, 1 for each explanation, 1 for the counter reason, 1 for explaining the counter reason, and 1 for wrap-up.

_____ Explain goal - to write better persuasive paragraphs with at least 10 TREE parts. Remind the students that good persuasive paragraphs tell the reader what you believe, give at least three
reasons why, give an explanation for each reason, have a counter reason with explanation, and have an ending sentence. Also, good persuasive paragraphs are not only fun for me to write and for others to read but they make sense.

The goal is to have all of the parts and "better" parts the next time we write a persuasive paragraph.

Step Six – Learning Contract

Introduce the learning contract. Tell the students that you will sign the contract indicating that you will do your best to teach them POW+TREE. Ask them to commit to learning POW+TREE. You will add more to this later. For now, get a commitment to just learning the strategy.

Wrap-Up

Tell the students that next time you will ask them to write POW+TREE from memory and will “test” (non-graded) what is means. Let each student write POW+TREE on a scratch piece of paper. Tell the students they can practice with each other to help with memorizing.
Lesson Overview

The teacher models how to use POW + TREE for writing a persuasive paragraph. The teacher models the use of self-statements during the process. Students write personal self-statements. The students revise their previously written paragraph.

Student Objectives

- Orally say the mnemonic for POW + TREE and state what each letter stands for
- Attend to the teacher’s modeling lesson
- Write self-statements for the POW + TREE writing strategy

Materials

- POW + TREE charts
- TREE graphic organizers
- Graphing sheet
- Self-statement sheets
- Transition chart
- Country Living prompt
- Student paragraphs
- Green pens

Set the Context for Student Learning

Test to see if the students remember POW + TREE: do it aloud to save time. It is essential that each student memorize these. If students are having trouble with this, spend a few minutes practicing it. Tell the students you will test them on it each day to make sure they have it.
Step One – Model the Strategy – Is it better to rent a DVD or buy it?

Note: It is OK to ask students to help you generate ideas, but you do all the writing! Be sure to involve the students as much as needed to keep their attention.

Pick my Idea

_____ Lay out a copy of the TREE GRAPHIC CHART, ORGANIZER, and TRANSITION CHART. Then explain: “Remember that the first letter in POW is P - pick my idea. Today we are going to look at how to write a good persuasive paragraph” - review what that means if necessary. “To do this we have to be creative, we have to think free. Today I will show you how to write a paragraph and then we will practice by revising our paragraphs.”

_____ Read aloud the practice prompt: Is it better to rent a DVD or buy it?

Organize my Notes

_____ The second letter in POW is O- ORGANIZE my NOTES. Tell the students that today you are going to write a persuasive paragraph with their help – Say, “I will use POW + TREE to help me. I will use the outline to make notes and organize my thoughts.” Briefly review - point at - the parts of a good paragraph on the graphic. Review - what should my goal be, to write better persuasive paragraphs with all the parts. Remind them that good persuasive paragraphs tell the reader what you believe, give at least three reasons why, give an explanation for each reason, have a counter reason with explanation, and have an ending sentence. Remind them that the transition words will help them organize their reasons too. Also, good persuasive paragraphs can be fun to write and for others to read, and make sense.

_____ Model the entire process for Organizing your Notes. EXPLAIN that you will be talking out loud through all the steps of completing the outline. Use problem definition, planning, MILLION DOLLAR WORDS, self-evaluation, and self-reinforcement self-statements as you go. Follow the steps and statements below, filling in ad lib statements where indicated. Ask the students to help you with ideas and the writing, but be sure you are in charge of the process:

_____ Say, “What is it I have to do? I have to write a good persuasive paragraph. My paragraph needs to make sense and have all the parts. Remember P in POW - pick my idea - let
my mind be free. (Pause) Take my time, think about what I believe and good reasons why will come to me.” (Pause)

_____ Say, “Now I can do O in POW - Organize my Notes. I can write down ideas for each part. I can write ideas down in different parts of this page as I think of ideas” (be sure to model moving out of order during your planning). “First, what do I believe - what do I want to tell the reader I believe?” (Now - talk out and fill in notes for Topic Sentence). “Good I like this idea! Now I better figure out at least 3 reasons and give an explanation for each reason. Let my mind be free, think of good ideas.” (Now talk out and briefly write notes for at least 3 reasons- not in full sentences - use coping statements at least twice.) Be sure to model writing notes and explanations for the counter reason. Say, “I will think of a counter reason--why others might not agree with me--and tell my reader why it doesn’t change my belief.” After generating notes for all paragraph parts say – “Now I can look back at my notes and see if I can add more notes for my paragraph parts” (actually do this - model it - use coping statements). “I will remember to use transition words too” “I can also look for ideas for good word choice or million dollar words” (do this).

Write and Say More

_____ Say, “Now I can do W in POW - write and say more. I can write my persuasive paragraph and think of more good ideas or million dollar words as I write.” Now - talk yourself through writing the paragraph; the students can help. Use a clean piece of paper. Start by saying, "How shall I start? I need to tell the reader what I believe, I need a topic sentence." Then pause and think, then write out the sentence. Then write the first reason, use a transition word (refer to the TRANSITION CHART to help you). Do be sure to add 1-2 more ideas and million dollar words not on your plan as you write. Don't hurry, but don't slow it down unnaturally. Also, at least 2 times, ask yourself, "Am I using good parts and, am I using all my parts so far?" “Did I include a counter reason?” Use coping statement. Also ask yourself, "Does my paragraph make sense? Will the reader buy my reasons?” Model writing the ending sentence.

_____When the paragraph is done, model counting and graphing your performance. Say, "I got _ parts; I met the goal of 10 or more. Good work, I'm done.”
Step Two – Self-Statements

Ask the students if they can remember: 1) things you said to yourself to get started, 2) things you said while you worked, 3) things you said to yourself when you finished.

Ask the students to write some things they could say on the SELF-STATEMENT SHEET.
- What to say to get started. This must be along the same lines as "What is it I have to do? I have to write a persuasive paragraph using TREE." – be sure students use their own words.
- Things to say while you work: self-evaluation, coping, self-reinforcement, and any others he/she likes (in students’ own words).
- Things to say when you're finished (in students' own words).
- Note that we don't always have to think these things out loud; once we learn them we can think in our heads or whisper to ourselves.

Step Three – Learning contract and peer support

Hand each student their contract. Ask students to add new components to what they can learn “Write a paragraph with 10 parts.”

Wrap-Up

Remind the students of POW + TREE test again next time
Lesson Overview
The students and the teacher collaboratively write an persuasive paragraph using the POW + TREE.

Student Objectives
- Orally state the mnemonic for POW + TREE and what each letter stands for
- Collaboratively write a persuasive paragraph with the teacher
- Identify orally parts of the paragraph that is written.

Materials
- Pencil and paper
- POW + TREE charts
- TREE graphic organizers
- Graphing sheet
- Self-statement sheets
- Transition charts
- Lesson 3 prompts
- Green pens.

Set the Context for Student Learning

Test to see if the students remember POW + TREE: do it aloud to save time. It is essential that each student memorize these. If students are having trouble with this, spend a few minutes practicing it. Tell the students you will test them on it each day to make sure they have it. Discuss how to be peer partners to use POW+TREE in other classes.
Step One – Collaborative Writing – Support It.

_____ Give each student a blank GRAPHIC ORGANIZER AND TRANSITION CHART and ask each student to get out his or her SELF-STATEMENTS SHEET. Put out practice prompts.

_____ Tell the students that during the next couple of lessons you will be writing persuasive paragraphs and that each time, because they have practiced, will be a smoother and they will have more added to the paragraph. Tell them that the goal is to see how many GOOD reasons and explanations they can write. Also they want to be sure to give a counter reason and explain it too. This practice will help them write more in all their assignments.

_____ Say, “Remember that the first letter in POW is P - pick my idea.” Refer students to their self-statements for creativity or thinking free. Help each student decide what they believe and start to think of good reasons why.

_____ Say, “The second letter in POW is O - ORGANIZE my NOTES. I will use TREE to help me. I will use this page to make my notes and organize my notes.” Review “What should my goal be, to write better persuasive paragraphs with at least 10 parts. Good persuasive paragraphs tell the reader what you believe, give at least three good reasons why, give an explanation for each reason, give a counter reason with explanation, and have an ending sentence. Also, good persuasive paragraphs can be fun to write and for others to read, and they make sense.” After students have generated notes for all paragraph parts say – “remember to look back at your notes and see if you can add more notes for your paragraph parts” - help them actually do this. Remind them also to look for more ideas for good word choice or million dollar words - help them do this.

_____ Say, “The last letter in POW is W - write and say more.” Encourage and remind the students to start by saying “What is it I have to do here? I have to write a good paragraph - a good paragraph has at least 10 parts and makes sense. I can write my paragraph and think of more good ideas or million dollar words as I write.” Give each student paper and pencil, and begin writing. Help students as much as they need to do this, but try to let them do as much as they can alone. Encourage them to use other self-statements of their choice while they write. If students do not finish writing today, they can continue at the next lesson.
Step Two – Graph the Paragraph

Have each student count their parts and graph his or her paragraph. Ask each student to determine if their paragraph has at least 10 parts. Let them fill in the graph. Reinforce them for reaching more than the 10 parts.

Wrap-Up

Remind students of POW + TREE test again next time and remind them to think about how they can use POW+TREE in other classes and to help each other as partners.

Repeat this lesson if needed.
Lesson Overview
In this lesson, the students continue to practice the POW + TREE strategies for writing persuasive paragraphs. The focus of this lesson is to wean the students off the graphic organizer and transition chart.

Student Objectives
- write their own organizer
- write a persuasive paragraph with at least 10 paragraph parts.

Materials
Pencil and Paper
Graphing chart
Self-statement sheets
Lesson 4 prompts
Paper
Green pens

Set the Context for Student Learning

Test to see if the students remember POW + TREE. They should have it by now! Ask students about helping each other in other classes and times that they could use POW+TREE in other classes.

Develop the Strategy and Self-Regulation

Step One – Wean off Support Materials
Explain to the students that they won’t usually have TREE or transition word reminder pages with them when they have to write persuasive paragraphs, so they can make their own notes on blank paper. Discuss and model how to write down the reminder at the top of the page:

POW
TREE

Then make a space on the paper for notes for each part.
Step Two – Guided Writing – Support It

_____ Ask each student to get out his or her self-statements list. Put out 2 practice prompts. Each student can select one to write about. This time, let the students lead as much as possible, but prompt and help as much as needed. Students can make notes on the paper they wrote the reminders on.

_____ Say, “Remember that the first letter in POW is P - Pick my Idea. Refer students to their self-statements for creativity or thinking free. Help each student decide what they believe and start to think of good reasons why.

_____ Say, “The second letter in POW is O- ORGANIZE my NOTES. Use the TREE reminder to help you. Use this page to make my notes and organize my notes.” Review – “What should your goal be, to write better persuasive paragraphs with at least 10 parts. Good persuasive paragraphs tell the reader what you believe, give at least three good reasons why, give an explanation for each reason, have a counter reason with explanation, and have an ending sentence. Also, good persuasive paragraphs can be fun to write and for others to read, and make sense.” After students have generated notes for all paragraph parts say, “Remember to look back at the notes and see if you can add more notes for your paragraph parts.” Help them actually do this. Remind them also to look for more ideas for good word choice or million dollar words - help them do this.

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

_____ Have each student graph his or her paragraph. Ask each student to determine if their paragraph has at least 10 parts. Let them fill in the graph. Reinforce them for reaching 10 or more.
Wrap-Up

Remind them to help each other to use POW+TREE in other classes.

*Repeat this lesson if necessary.* If you believe they have it, celebrate student learning!
POW + TREE
Lesson 5

Lesson Overview
In this lesson, the students will use POW + TREE strategies for writing a persuasive paragraph. The focus of this lesson is to establish the students independence.

Student Objectives
- Write their own organizer
- Write a persuasive paragraph.

Materials
- Paper and pencil
- Graphing chart
- Lesson 5 prompts
- Paper
- Green pens

Set the Context for Student Learning

Tell the students that today they will write a persuasive paragraph for you. They are to remember what they learned with you when another teacher asks them to write. Ask the students to be sure to help each other in other classes.

Test the Strategy and Self-Regulation

Step One – Materials
- Give students paper and pencil

Step Two -- Student practice
- Hand students a practice prompt set and a piece of blank paper for planning. Ask each student to select a prompt to write about. Tell them you want them to try on their own, but you will be watching carefully.
- Help students as need by asking them to write more reasons, check their work etc.
Step Three – Graph performance
_____ Have students graph performance. Then spend some time discussing how they performed in the independent practice. Ask them to tell you what they think they did well and what they could do better.

Step Four—Model Quick Write
_______ Explicitly model planning and writing a response in ten minutes, and allowing for revision time between planning and writing.
_______ Have students practice planning and writing a response in ten minutes.

Wrap-Up
_____ Remind students to help each other with POW+TREE in other classes.

Appendix D
POW + TREE Lesson Plans
Appendix F

TREE Mnemonic Graph

POW
P  Pick my Idea
O  Organize my Notes
W  Write and Say More

TOPIC Sentence
Tell what you believe!

REASONS - 3 or More
Why do I believe this?
Will my readers believe this?
Do I have a counter reason?
Does it change my belief?

EXPLAIN Reasons
Say more about each reason.

ENDING
Wrap it up right!
Appendix G

POW + TREE Planning Organizer

TOCIC Sentence
Tell what you believe!

<table>
<thead>
<tr>
<th>Transition Words</th>
<th>R Reasons -3 or More</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Why do I believe this?</td>
</tr>
<tr>
<td></td>
<td>Will my readers believe this?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>E EXPLAIN Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Say more about each reason</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>R Do I have a counter reason?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E Does it change my belief?</td>
</tr>
</tbody>
</table>

E ENDING
Wrap it up right! DID YOU? _________
Appendix H

Graphing Organizer

Are You Inclined to Get to the Top?
Appendix I

POW + TREE Learning Contract

LEARNING STRATEGIES CONTRACT

STRATEGY: __________________________

Student __________________________ Date __________

Teacher __________________________ Date __________

Goal: _____________________________________________

________________________________________________________________________

________________________________________________________________________

How to meet this goal: __________________________________

________________________________________________________________________

________________________________________________________________________

Signatures: Student __________________________

Teacher __________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

______________________________ has successfully completed instruction in the __________________________ Strategy and agrees to use it in __________________________

________________________________________________________________________

________________________________________________________________________

Date __________ Student __________________________

Teacher __________________________
Appendix J

Self-Regulation Diagram
Transition words help readers understand what’s coming next, like a road sign helps people understand where they need to go.

first
second
third
next
also
another
in addition
because
for example
finally
in conclusion
in summary
therefore
however
Appendix L

POW + TREE Self-Statements

My Self-Statements

To think of good ideas:


While I work:


To check my work:


Lesson Overview
The purpose of this lesson is to increase the editors’ awareness of writer sensitivity and appropriate delivery of feedback. This lesson includes discussion of the purpose of feedback and how to provide feedback that is specific, constructive, and appropriate. Approximately 15 minutes

Student Objectives
- Students will use a hand signal to indicate the difference between feedback using constructive words (Thumbs-Up), and destructive words (Thumbs-Down).
- Students will use a hand signal to indicate the difference between feedback using appropriate tone (Thumbs-Up) and inappropriate tone (Thumbs-Down).
- Students will orally identify characteristics of specific, constructive and appropriate feedback: Wording, tone, specificity.

Materials
- Feedback Samples worksheet
- Green pens

Set the Context for Student Learning

"The beautiful part of writing is that you don't have to get it right the first time, unlike, say, a brain surgeon. You can always do it better, find the exact word, the apt phrase, the leaping simile." Robert Cormier

Tell the students that even a good piece of writing can get better through revision. Whenever an author changes a word, a phrase, or adds new ideas, the author is revising. This can happen during planning, writing and between drafts. We’re going to be focusing on revising after a first draft with the help of a peer-editor. A good editor gives the author feedback that is specific, constructive and appropriate. Explain that an editor’s job is to give the author feedback on their writing to help them make their writing stronger, clearer, more interesting and more effective. In the case of persuasive writing, more effective writing means more persuasive writing. Our next step is to learn HOW to give feedback to authors.
Discuss prior experience with assessment, peer feedback and teacher feedback. How do we like to feel about our work, and what kinds of things make us feel good and what kinds of things make us feel bad.

Explain that for feedback to be most helpful it should be specific, constructive, and appropriate. Discuss the meaning of these words.

Discuss why authors need to hear both compliments and corrections about their writing. Explain that if all authors hear are compliments, the writing never gets better, because we don’t know what parts need more work. On the other hand, if all an author hears are corrections, the author can get frustrated and lose interest in writing. A good editor knows how to help the author by identifying areas of strength, as well as areas that could be stronger.

Give students a copy of the feedback samples below and have them do choral responding to indicate their answer. Say, “Listen, and read along as I pretend that I’m giving feedback to someone about their writing. After hearing each example, circle the symbol for “Thumbs UP” which means that it would be helpful to an author, or a “Thumbs DOWN” if it would not be helpful. Have student show their answers with their own thumbs.

1. I really liked the ending because it reviewed all the reasons.
   (Pause and let students circle the thumbs up symbol, then indicate their answers with their own thumbs. Repeat with the remaining ten pieces of feedback.)

2. Yeah, it was good.

3. The second reason is the best reason because it sounds like something my mom would think, and that’s who the reader would be.

4. That’s a stupid explanation! Nobody would say that! (Condescending tone)

5. I don’t have any idea what you’re talking about! (annoyed)

6. I think that the first two reasons are good, but the third reason sounds like something another kid would argue about, not a principal. Who is the intended reader?

7. This is just perfect, you shouldn’t change a word.

8. The paragraph has almost all the parts, but you didn’t refute the counter argument to say why it didn’t change your mind.

9. I think there are some good ideas here, but it’s a little confusing. Maybe some transition words between reasons would help the reader to follow more easily.

10. I especially like the explanation for the third reason, because I wasn’t sure what you meant by that until I read the explanation.
(If students are still struggling, add more examples.)

_____ Look at the “Thumbs-Up” feedback. Discuss what makes that feedback specific, constructive, appropriate and helpful even when it is corrective. (1, 3, 6, 8, 9, 10)

_____ Look at the thumbs down feedback and brainstorm ideas of how that feedback could be changed to be specific, constructive and helpful. (2, 4, 5, 7)

_____ Discuss word choice and tone for providing corrective feedback. Discuss why very harsh feedback is not only hurtful but not helpful either (e.g., this stinks, that part is stupid, you’re wrong, etc.)

_____ Discuss why generic positive feedback (e.g., that’s good, I like it, nice work…) while nice, is not very helpful to the author because the author doesn’t know WHY the reader likes that part.

Wrap-Up

Feedback needs to be specific so the author knows exactly what makes the writing good and what is unclear. Feedback needs to be constructive so the author can decide what and how to change the writing to make it stronger. Feedback needs to be appropriate so that the author is helpfully supported. Next we will learn the strategy that will guide editors in assessing the author’s paper.
Lesson Overview
The purpose of this lesson is to introduce, model the LEAF strategy. Discuss components of LEAF, review terminology, and model both the role of author and editor.
Approximately 30 minutes

Student Objectives
- Discuss the components of the LEAF strategy
- Observe modeling of the LEAF strategy

Materials
- LEAF Mnemonic chart
- LEAF review guide
- LEAF Self-Statements
- LEAF Learning Contract
- Sample persuasive paragraphs

Set the Context for Student Learning
Discuss what you have learned about the importance of reader and writer sensitivity.

Tell the students that you will be working with them to learn a new strategy. Ask the students to tell you what they remember about the word “strategy.” Tell the students that they will be learning a new strategy for revision. This strategy will help them to revise, or change, their persuasive plans for paragraphs to make them stronger and more persuasive.

Tell them that revising is different than editing. Revising is the process of changing the ideas, meanings to make a plan stronger. Revising happens at different stages in writing as authors change their minds about what they want to say, or how to say it. Tell them that you will teach them how to work with a partner to change their plans to make them stronger and more persuasive.

The process of fixing mechanical errors like spelling, punctuation and grammar is called editing. We will not be specifically looking for these types of errors, but if you find them in your own work, or your partner’s work, it’s fine to correct it. Even though we will call the person helping you with your paper the “Editor”, they will be helping you primarily with revisions that make your paragraph stronger.
Step One – Introduce LEAF

Introduce LEAF. Pull out the LEAF Mnemonic chart and identify how it works with TREE, and point out the connection between the two mnemonics. Leaves make the tree stronger because they generate food for the tree. Revision generates food for thought for your paragraph. Just like a tree has some leaves that are perfect and some that have holes nibbled in them, essays also have some parts that are perfect, and some parts that have holes or need repairs.

Review/teach the meaning of the words strongest, persuade, convinced, logical, support, clarity.

Describe and discuss the four letters in LEAF and how they represent different functions:

- Listening, complimenting, assessing, and discussing.

Describe and discuss each component of LEAF.

Step Two – Model LEAF

It is ideal if there is another adult to play the role of author, but if not, an empty chair can represent the author. These directions will be written for one teacher, but if you have help, terrific! (Suggestion: Have fun with this. If you are alone, move back and forth between the two chairs and use distinct voices to represent each role. Wear a hat when playing one of the roles to help the students keep it straight and to add some fun.) Say, “I’m going to model how to use the LEAF strategy to guide a peer-revision conference. I’ll be playing both author and editor, and I’ll be saying aloud the things an editor would usually just think inside their head. As the editor, it is my job to help the author make their argument stronger. I’ll start as the author.” Put on a hat and begin.

LISTEN

Lay out a copy of the LEAF Mnemonic chart, the LEAF Peer Revision Guide and the sample plan for “Car at 16”.

Sit in the author’s chair and read aloud the practice prompt: “Car at 16” and review the plan.

T: Have own car at 16
R1: Teens and parents busy       E1: Wouldn’t have to wait
R2: Learn responsibility       E2: Pay for own gas/repairs
R3: Minivans not cool       E3: Embarrassing
C: Parents think kids would get into trouble CE:
End: A teenager should have their own cool car.
EXPLAIN

______ Quickly move to the editor’s chair (take off the hat and leave it on the table by the empty seat). Look at the Guide and state the first step aloud, “Listen to the author read their paragraph.” Then say, “CHECK, now put a check mark in the green circle” and place a check mark in the green circle beside that step.

______ Read the second step in the Editor’s voice, “Explain what you liked best.” Stop for a moment, reach across the table and mime drawing a box around the author. Explain to students that the box you just drew around your imaginary author is an imaginary sound proof booth. That’s so the author cannot hear the thoughts you are going to be saying aloud. When the box is closed, the author cannot hear your thoughts. Say, “Now, let’s look at this again. “Explain what you liked best.” Hmmm…parts of it were good. Oh, that’s not very specific. Read: ‘Which reasons were strongest? Why?’ Well, I think the best reason in this paragraph is that teenagers are busy. That’s a good reason because it’s true. Teenagers have after school stuff, like sports and jobs. They like to go do things with friends on weekends. My mom is always driving me places, so it would be easier if I had my own car to drive myself where I need to go. The other reason that I think is a good, strong reason is that it will help teenagers learn to be responsible. They’ll be more careful if it’s their car, and if they have to buy the gas, they won’t waste gas just driving around. That last reason is not really very strong. It might be true that a kid would want to look cool driving, but adults wouldn’t care if the kid looks cool or not.” Reach across the table and mime undoing the sound proof booth. Tell the author what you thought his best reason was and why you liked it. DO NOT MENTION THE BAD REASON TO THE AUTHOR AT THIS STAGE. THIS IS THE TIME FOR COMPLIMENTS. Smile, nod, and gesture being encouraging.

ASK

______ “Ask evaluation questions (after reading).” Oh, all the questions are on the guide. It says, after reading. So I need to read the author’s plan.” Reach across the table, pick up the plan, hand another plan to the author and redraw the sound proof booth and read the plan to the students, this time as the editor.

______ PARTS? Say, “Now, ask myself these questions. ‘Parts? Did the author include all the parts?’” Model counting the parts and talk aloud as you do. Notice that the counter argument is missing an explanation and mention it and note it on the LEAF Peer-revision Guide.

______ LOGICAL? ‘Is it logical? Who is the author trying to persuade? Will the reader be convinced?’ Well, I think parts of it are logical. I think the author is trying to persuade a parent. I think the first two reasons will be persuasive to a parent, but the third one won’t. So I need to write this on the form. Is it logical? I’ll write, ‘parts are logical (R1 & R2), so I remember to tell him which parts are logical. Then, ‘who is the author trying to persuade?’ I’ll write ‘a parent’. Finally, ‘will the reader be convinced?’ I’ll write, ‘partly (3)’ so I remember to tell him the third reason is not very persuasive to a parent.’

______ Details? Okay, ‘Do the explanations support the reasons?’ Let’s see. I need to look at them again. The first reason about being busy. The explanation he wrote says that sharing would be difficult and if the kid had their own car, no one would have to wait. Yeah, that explanation supports the reason. The second reason was about responsibility. The explanation is about paying for gas and repairs. Yes, that one makes sense too. The last one is about being cool. The explanation says the kid would be embarrassed to drive the minivan. That does
support his reason, but it’s not a strong reason. I hope the author will decide to change that one. Now, for the counter argument, the explanation is missing, so I’ll note that again here under ‘Where could more details be added?’ Write, ‘missing counter explanation’ on the guide.

_____ Clarity? Is there any part that is hard to understand? No, I think this paragraph is clear. I’m not confused about anything.

Finalize

_____ ‘Finalize your comments.’ Okay, ‘Discuss questions and suggestions.’ Reach over and unbox the sound proof booth. Smile and greet the author. Ask the imaginary author if he is ready to discuss revisions. Your conversation will go something like this, “Okay. So, I think your two strongest reasons are #1 and #2 (restate the kind comments you made about R1 and R2 when self-talking. Continue through your notes on the guide explaining your feedback in specific, constructive and appropriate terms. Offer two suggestions for a stronger Reason 3 and Explanation 3. Make a suggestion for a counter argument for the counter argument. Thank the author for sharing his paragraph with you.

_____ Write suggestions on guide. Check guide to be sure that your suggestions are noted.

_____ Give the imaginary author your revision guide and their plan. Thank them for their feedback. Tell students that you would then take the review your editor did of your plan mark any changes you would like to include.

_____ Authors are not required to follow ALL of an editor’s suggestions. They can decide which of the suggestions they believe would make their paragraph stronger.

Step Two – Self-Statements

_____ Ask the students if they can remember:
  1) things you said to yourself ,
  2) things you said while you worked,
  3) things you said to yourself and the author when you finished.

_____ Ask the students to write some things they could say on the SELF-STATEMENT SHEET.

-What to say to get started: This must be along the same lines as “What is it I have to do? I have to find strengths and areas that could be stronger in my partner’s paper.” – be sure students use their own words.

-Things to say while you work: “I have to be specific”, “I want my feedback to be appropriate,” “I need to find a way to constructively make suggestions to make sense so make my partner’s paragraph stronger.” “Be sure to tell him what I liked.” “Be honest that this part doesn’t fit his reader.”

-Things to say when you're finished (in students' own words): “Thanks for sharing your ideas.” “You have some good ideas.” “I look forward to hearing your final paragraph.”

-Note that we don't always have to think these things out loud; once we learn them we can think in our heads or whisper to ourselves.

Step Four – Learning contract

_____ Hand each student their “Training Contract”. Ask students to add new components to what they can learn

  “I can learn to give constructive feedback.”
  “I can learn to give specific feedback.”
“I can learn to discuss ideas with my editor.”
“I can learn to make final decisions on my own work.”

Wrap-Up

Remind the students that the feedback they get from their editors are suggestions, not orders. Good writers carefully consider their editor’s suggestions and make the changes that they believe will make their writing stronger. Next we’ll practice being an editor together.
Lesson Overview

The purpose of this lesson is to provide collaborative, guided and independent practice with the LEAF strategy reviewing persuasive plans. Minimum 30 minutes. Time will vary depending on the number of repetitions students need to become fluent with completing the revision guide and stating their feedback appropriately.

Student Objectives

- Practice LEAF strategy (collaboratively with the teacher)
- Practice LEAF strategy with a peer (with guided practice)
- Practice LEAF strategy with a peer (independently)

Materials

- Sample persuasive plan
- Previously written student plans
- LEAF Mnemonic Charts
- LEAF Revision Guides (Enough copies for multiple conferences)
- LEAF Self-Statements
- Green pens

Set the Context for Student Learning

______ Review difference between revision and just editing.
______ Review the meaning of the words strongest, persuade, convinced, logical, support, Clarity, specific, constructive, appropriate.
______ Review LEAF Mnemonic and the steps of peer-revision.
______ Tell students that a LEAF revision conferences should take no more than five minutes.
______ Tell students that they are ready to practice being editors. First they will work with you, and then practice with a peer.

Collaborative Practice

______ Have the students get out their LEAF mnemonic chart, the LEAF revision guide, their self-statements, and green pen.
______ Tell the students that now we are going to read a persuasive plan and revise it together.
T: Camping not hotel
R1: sleep outdoors  E1: hear crickets
R2: Like camping better than hotel  E2: more fun
R3: campfire treats  E3: s'mores, mountain pies
C: Bugs  CE: bug spray and long sleeves
End: Take bug spray

Work through the steps of the revision guide with the students to identify strengths and areas that could be stronger. Use highlighter to point out specific areas as you discuss the steps of revision. Record feedback on the revision guide.
Strengths: Topic sentence, R1 & R3, counter argument, supporting details for R1, R3 and counter Areas that could be stronger: R2 and Exp2, no closing.
Repeat this for another plan (practice prompt #2, Designer Labels)

Designer vs. Generic label clothes
T: generic label
R1: dumb to waste money  E1: Why would you do that?
R2: more outfits  E2: won't get bored
R3: extra money  E3: spend on other stuff
C: not as good  CE: no difference – look fine
End: Better to buy generic

Guided to Independent Practice

Have students get out a previously written plan.
Give students a clean copy of the peer-revision guide.
Walk students through each step and stop to discuss the feedback they received following each step. Monitor carefully for feedback that is specific, constructive and appropriate and provide support as necessary.
Note also that even though we have a complete plan, it can always revised to be stronger.
- can give more than 3 reasons or add more explanations and details
- can use good word choice, or “million dollar words”.
- can use an interesting first sentence
- can use an interesting ending sentence
Have students take revision guides completed by their partners and make revisions to their plan and write a new draft.
Repeat with additional previously written prompts gradually shifting responsibility to the peer-dyads.
INDEPENDENT PRACTICE
Students will write a new plan and quick write.

Student Objectives
■ Students will write a new plan using the POW + TREE strategy and use LEAF to revise plan, then write a final draft.

Materials
■ Graphic organizers for TREE and LEAF, Revision Guides, Self Statements, Green Pens, Pencils

Set the Context for Student Learning
Tell the students that they will plan, revise and write a persuasive paragraph.

Test the Strategy and Self-Regulation

Independent Practice:
Step One – Set up new documents
 Provide each student with paper and pencil.

Step Two -- Student practice
 Hand students a practice prompt set. Ask each student to select a prompt to write about.
 Tell them you want them to try on their own, but you will be watching carefully.
 Move them into the LEAF Peer-Revision processs after planning

Step Three – Make changes
 Have students record the changes they intend to make on their plan using the green pen.
 Have students write final quick write.

Wrap-Up
 Tell them that they did a great job helping each other, you appreciate their hard work, and that you will be continuing to practice writing and revising.
Appendix N
LEAF Feedback Samples

1. I really liked the ending because it reviewed all the reasons.

2. Yeah, it was good.

3. The second reason is the best reason because it sounds like something my mom would think, and that's who the reader would be.

4. That's a stupid explanation! Nobody would say that!

5. I don't have any idea what you're talking about!

6. I think that the first two reasons are good, but the third reason sounds like something another kid would argue about, not a principal. Who is the intended reader?

7. This is just perfect, you shouldn't change a word.

8. The paragraph has almost all the parts, but you didn't refute the counter argument to say why it didn't change your mind.

9. I think there are some good ideas here, but it's a little confusing. Maybe some transition words between reasons would help the reader to follow more easily.

10. I especially like the explanation for the third reason, because I wasn't sure what you meant at first but after I read the explanation, I knew just what you meant.
Appendix O

LEAF Mnemonic Chart

POW + TREE

with

LEAF

Revision Strategy

LEAF

Listen Take turns listening to each other

Read your planners.

Explain what you liked best.

- Which reasons are strongest?
- What makes them good reasons?

Ask yourself

Evaluation questions based on
your partner’s planner and
record your thoughts below.

- Parts? Is the author’s planner
complete?

- Is it logical? Who is the author
trying to persuade? What could
the author add to make it more
persuasive?

- Details? Where could the author
add more details?

- Clarity? Is there any part that is
hard to understand?

- Could something be clearer?

Finalize your comments

- Discuss questions and suggestions
with the author. Give the author
back their planner.
HELP WANTED: EDITOR
Training Contract

Student: ____________________________
Teacher: ____________________________
Starting Date: ____________________________
Deadline: ____________________________

Goal (What I can learn):


How to meet this goal:


Signature:
Senior Editor: ____________________________

Junior Editor: ____________________________

-------------------------------------------------------------------------------------------------

has successfully completed job training as an editor on ____________________________ and agrees to use professional editorial skills to provide authors with feedback that is specific, constructive and appropriate.

Senior Editor: ____________________________
Appendix Q

LEAF Peer Revision Guide (Front)
LEAF Peer Revision Guide (Back)

Who is the author trying to persuade?
__________________________________________

What could the author do to make it more persuasive?
__________________________________________

__________________________________________

Details? Where could the author add more details? ______________________________________

__________________________________________

Do you have any suggestions?
__________________________________________

__________________________________________

Clarity. Is there anything that’s hard to understand? Could something be clearer? ____________
__________________________________________

Discuss your questions and suggestions with the author
Appendix R

LEAF Self-Statements
### Appendix S

#### Treatment Acceptability

1. **Do you think students your age should be taught POW + TREE? Why?**

<table>
<thead>
<tr>
<th>Name</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaron</td>
<td>Yes. I think it’s a good method. When I learned from it, it helped me expand my vocabulary and made me write stories better for English class.</td>
</tr>
<tr>
<td>Adam R.</td>
<td>Yes, because it helps explain in detail more writing and if they like to do writing, it will help them be a better writer.</td>
</tr>
<tr>
<td>Brian</td>
<td>Yeah, actually, I do, because it could be very useful. Actually, I used it quite a lot whenever I’m writing.</td>
</tr>
<tr>
<td>Chaz</td>
<td>Yes, because when Miss Anne taught me how to do it, it worked effectively, and I got better and it was easier for me to write stories and paragraphs easier.</td>
</tr>
<tr>
<td>Darren</td>
<td>Yes, because it helped me.</td>
</tr>
</tbody>
</table>

2. **Was POW + TREE helpful to you when you were planning? When you were writing? When you were revising? How?**

<table>
<thead>
<tr>
<th>Name</th>
<th>Planning</th>
<th>Writing</th>
<th>Revising</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaron</td>
<td>Yes, it helped me think of more things and explain how to take more notes and stuff. Yes, once again, it helped me with my vocabulary… and it just helped.</td>
<td>Yes, once again, it helped me with my vocabulary… and it just helped.</td>
<td>No, I don’t know.</td>
</tr>
<tr>
<td>Adam R.</td>
<td>Yes, it helped me get all my thoughts on paper. Yes, it helped my writing to be more detailed and explain my thoughts better.</td>
<td>Yes, it helped my writing to be more detailed and explain my thoughts better.</td>
<td>Yeah, because it helped go over what people didn’t understand in my writing.</td>
</tr>
<tr>
<td>Brian</td>
<td>I just remembered TREE and I used that a lot. I remembered that T is topic and I wrote the topic, and R is reasons, and then, E is explanations, and the other E is ending.</td>
<td>I just remembered it and did it, I guess. The parts all worked.</td>
<td></td>
</tr>
<tr>
<td>Chaz</td>
<td>It made it easier and less complicated, like to think of a subject, like if you knew what the subject was, it made it less complicated, like to get the things in your mind to write it down.</td>
<td>Yes, it made my sentences stronger, and like the reader would get more inspired to it, like, attracted.</td>
<td>Yes, when I went over it, I could know what mistakes I did easier. Like, it wasn’t like…like, how before, I couldn’t…I had to think about what I did wrong, and then I could just look at it and see what I did, and where I made mistakes.</td>
</tr>
<tr>
<td>Darren</td>
<td>It helped me write better.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. **What part of POW + TREE was most helpful to you? Why?**

<table>
<thead>
<tr>
<th>Name</th>
<th>Planning</th>
<th>Writing</th>
<th>Revising</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaron</td>
<td>The planning, because it helps me in class when the teacher’s saying something, or when we’re reading over books, it helps me take notes in my mind.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adam R.</td>
<td>The revising, because before writers publish, they don't really know what others think about their writing, so that helped explain my writing better.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brian</td>
<td>TREE, the planning.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chaz</td>
<td>I think both of them, because TREE helps you get more examples into it, and then POW., it just, like, gives you the diagram in which to make it better.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darren</td>
<td>I don’t know?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. **Did you think it was helpful to get advice from another student? Why?**

<table>
<thead>
<tr>
<th>Name</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaron</td>
<td>Yes, because with other student’s advice, it can help me to do better work and keep on going.</td>
</tr>
<tr>
<td>Adam R.</td>
<td>Yes, because…I don’t know.</td>
</tr>
<tr>
<td>Brian</td>
<td>Yeah, two heads are better than one</td>
</tr>
</tbody>
</table>
5. Did that advice make your writing better? How?

<table>
<thead>
<tr>
<th>Name</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chaz</td>
<td>Yes, because advice…You could always use advice that people can give you to make your stories better, and edit it.</td>
</tr>
<tr>
<td>Darren</td>
<td>Not really.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Aaron</td>
<td>Yes, it expanded my vocabulary and it helped.</td>
</tr>
<tr>
<td>Adam R.</td>
<td>Yes, if people didn’t understand a part, it helped me fix it.</td>
</tr>
<tr>
<td>Brian</td>
<td>Yes, it gave me more idea that I wouldn’t think about</td>
</tr>
<tr>
<td>Chaz</td>
<td>Yes, because, like, I can now write sentences and paragraphs faster than I could before and now they’re a lot stronger and deeper into depth with it.</td>
</tr>
<tr>
<td>Darren</td>
<td>Yeah. It made me think of, “Oh, maybe I messed up. Maybe I should work on that, so I guess I did like getting advice.</td>
</tr>
</tbody>
</table>

6. Would you rather revise alone or with another student? Why?

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Aaron</td>
<td>Alone, because I can work better.</td>
</tr>
<tr>
<td>Adam R.</td>
<td>With another student, because when there’s another student, I get another side and more ideas.</td>
</tr>
<tr>
<td>Brian</td>
<td>Another student. Like I said, two heads are better than one.</td>
</tr>
<tr>
<td>Chaz</td>
<td>Either way, it really doesn’t matter, I can do it by myself, or with another kid.</td>
</tr>
<tr>
<td>Darren</td>
<td>Alone, so I can concentrate.</td>
</tr>
</tbody>
</table>

7. Did using LEAF improve your writing? How?

<table>
<thead>
<tr>
<th>Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Aaron</td>
<td>Yes, it helped me, I don’t know, it just helped.</td>
</tr>
<tr>
<td>Adam R.</td>
<td>Yes, it helped me if I didn’t have another reason, it helped me get another reason, get ideas, and fix mistakes that I made.</td>
</tr>
<tr>
<td>Brian</td>
<td>Whenever I’m at school, and I need to write something, I use that.</td>
</tr>
<tr>
<td>Chaz</td>
<td>Yes, it helped me make my writing neater and it, like, made the sentences longer and faster to write, because we got time to help me get it down-pat faster, and now I can write sentences faster.</td>
</tr>
<tr>
<td>Darren</td>
<td>I don’t know. This is confusing</td>
</tr>
</tbody>
</table>

Note: Celia, Ben, and Doug were moved into new placements prior to the completion of this interview
CURRICULUM VITAE 2011
ANNE MONG CRAMER

DEGREES
Ph.D.  Special Education, Pennsylvania State University, 2011 (Anticipated)
M.Ed.  Special Education, Pennsylvania State University, 2006
B.S.  Elementary Education, Pennsylvania State University, 1992

PROFESSIONAL EXPERIENCE
Spring 2011  Assistant Professor, Indiana University of Pennsylvania
Spring 2009  Supervisor: Pre-Student Teaching Practicum
Fall 2008  Instructor: SPLED 409B: Literacy for students with special needs

Research
2009 – 2010  Project Coordinator, Project SPLED (Dr. Linda Mason & Dr.Rick Kubina)
2008 – 2010  Scoring Coordinator, Project REAL (Dr. Linda Mason & Dr. Tom Farmer)
2005  Research Assistant, Positive Classroom Climate Study (Dr. David Lee)
2005  Research Assistant, Rural Leadership Conference (Dr. Dana Mitra)

JOURNAL PUBLICATIONS
instructional approach that supports students' motivation in writing about content
material. Reading and Writing Quarterly.

Mason, L.,& Mong Cramer, A. (2008). Rarely had the words poured: Teaching
persuasive writing. Insights on Learning Disabilities: From Prevailing Theories

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support setting. Behavioral Disorders, 35, 140- 156.