The Pennsylvania State University

The Graduate School

College of Education

THE EFFECTS OF THE SELF-REGULATED WRITING STRATEGY ON THE WRITING PROCESS OF GENERAL EDUCATION STUDENTS

A Thesis In

Special Education

by

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Abstract

Students struggle throughout the writing process often due to a lack of planning, organization, focus, and meta-cognitive abilities. Students’ with these difficulties generally produce shorter, choppier, and surface level writing riddled with mechanical errors. The efficacy of the Self-Regulated Strategy Development (SRSD) model developed by researchers Graham and Harris on students with learning disabilities has been researched and the results have been positive. However, there has been little research conducted on the effects of SRSD in the general education population. The current study examines the effects of the SRSD model on the writing abilities of five general education students. The study examined success rates from baseline to post-assessment on both length and quality of writing. Students were taught to apply a persuasive writing strategy and self-monitor and regulate their use of the strategy. Instruction was delivered whole group in a series of eight-hour sessions.
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The Effects of the Self-Regulated Writing Strategy on Students in General Education

Introduction

“Writing is perhaps one of the most multifaceted and complex of all human activities. It can serve as a means for sharing information, exploring thought, advocating ideas, solving problems, developing self awareness, and making public the creations of the imagination” (Scheid, 1991, p. 9). Writing is a mode of learning, evaluating and analyzing that people of all ages and nationalities must be able to utilize and effectively create and evaluate. In the United States ineffective writing results are due to a number of reasons such as socioeconomic status, broken families, ineffective educational systems, and faulty teaching (Mason & Graham, 2008). Results of the National Assessment of Educational Progress (NAEP) report (2007) support this claim: there was no significant change in the percentage of students performing at or above proficient since 2002 on a scale of basic to advanced. At most, 55% of 8th graders are at the basic level of writing (Salahu-Din, Persky, & Miller, 2008). The growing number of students with learning disabilities (LD) adds to this deficit. Many students with LD have difficulties producing coherent, thorough writing. Nevertheless, researchers (e.g., Harris, Graham, & Mason, 2006; Lane, Graham, Harris, & Weisenbach, 2006) have shown that strategy instruction for writing increases the quality of writing produced for many students.

Effective writers utilize a variety of skills during the writing process. Good writers have command over writing mechanics and cognitive tools, but also use and monitor strategies for writing and revising their compositions (Scheid, 1991). The process of writing can be broken down into four simple stages including planning,
writing, revising, and publishing. However, each stage involves meta-cognitive activity and therefore makes each stage much more complicated. Meta-cognitive skills are extremely important in the planning stage of writing (Harris et al., 2006; Lane et al., 2006). For instance, one may take the position that writers are first thinkers, and thus must be able to commit to paper scattered ideas and structures of a whole that are unseen and sometimes unknown. Students with LD have particular difficulty in coordinating ideas before creating the whole. Due to these deficits these learners in particular are in need of strategic writing instruction that will help to increase their meta-cognitive processes while planning and composing.

The writing process involves various mental activities, but the heart of the process is described as a “monitor” or “meta-cognitive authority” that serves to control the execution of activities in a synergistic manner until the writer’s intentions are reached (Glaser & Brunstein, 2007). Managing these complex activities that typically occur simultaneously can be difficult task for all learners, but can be especially challenging for learners who struggle with meta-cognitive processes. These activities would include organizing thoughts into sentences, transforming sentences into written text, reviewing written material for errors, and rewriting. Switching modes of thinking is required frequently during the writing process and the ability to think about varying types of thinking can be challenging. Strategies may be needed to teach learners how to develop meta-cognitive thinking processes during writing development. The purpose of this thesis is to (a) review and synthesize research studies that examine the affects of the Self-Regulated Strategy Development (SRSD) model (Graham, Harris, and Mason, 2003) on
students with and without LD and (b) determine the affects of SRSD instruction on five students in the general education population.

Strategy Instruction

Strategy instruction promotes structure and consistency for students, which in turn creates a more supportive environment to help the writer through the complicated writing process. A common model that is used to teach meta-cognitive thinking processes for writing is the SRSD model. The framework of instruction in the SRSD model is outlined in six stages: develop and activate background knowledge, discuss it, model it, memorize it, support it, and independent practice (Harris et al., 2003). SRSD teaches students how to self-regulate their own writing by setting goals, self-monitoring, self-reinforcing, and self-instructing. The instruction and regulation of these strategies shifts from instructor to students and the intention is for students to be actively in charge of their own learning through the writing process. The stages of this model will be discussed below.

Stage one, develop and activate background knowledge, is used to develop any pre-skills necessary in using the strategy effectively, such as vocabulary and writing concepts. The development of self-instructions is also formed within this stage. Self-instructions may include a personalized expression of self-speech. For example, one might choose to use the statement “I can do this if I use my strategy and take my time” (Harris et al., 2003).

Stage two, discuss it, is the explicit teaching of the strategy being used. For example, the strategy may be instructed in the form of a mnemonic such as POW (Pick my ideas, Organize my notes, Write and say more). Students can also be taught a genre-specific strategy. The mnemonic TREE (Tell what you believe, Provide three or more
Reasons, End it, and Examine it), for example, is used for persuasive writing. Stage two includes the element of goal setting based on current performance and desired outcome.

Modeling thought processes and inclusion of all steps of the strategy is part of stage three. The teacher explicitly models each step including self-talk and self-instruction (“What is it I have to do here?,” “First I do…, then I do…,” “Have I used all my parts?”) (Harris et al., 2003). Stage four, memorize it, gives students an opportunity to practice reciting, identifying, and writing the strategy components and mnemonics to ensure ease of use while writing. Stage five, support it, provides opportunity for students to begin using the strategy and opportunity for teachers to fade prompting throughout the strategy usage. Finally, stage six, independent practice, students are able to implement the SRSD model independently and successfully.

Literature Review

The body of research on the SRSD model is extensive. However, most research has been conducted on students with LD. Most researchers have examined the effectiveness of the model for increasing the quality and number of words in a written assessment. The question of whether the SRSD model as the success factor was supported in this review of research.

Best practices in the SRSD model were examined by researchers Lane et al. (2006) and Monroe and Troia (2006) who stated that the SRSD model is not a stand-alone instructional model but is effective as a combined component of a full model of writing instruction. Many writing strategies have been shown to be effective when taught using the SRSD model. Peer support and evaluation has also proved to be an effective tool in combination with these models (Harris et al., 2006).
Meta-cognitive strategies appear to be crucial to the development of composition. The general education population often is able to naturally pick up the structure in a sample of writing. However, students with disabilities in writing are not always able to naturally pick up on written text cues. For these students, strategies must be taught to help form a mental structure for the writer that would otherwise already be in place. The research-based SRSD model has shown many instances of success in improving length and quality in a variety of grade levels and has provided a clear model in which to follow to develop meta-cognitive skills in writers.

SRSD Study Overview

The SRSD process was implemented in similar ways in each of the following research studies. However, some variety in implementation of the SRSD model existed, structure of individual studies varied, and additional elements were added to the writing process. See Appendices A and B for study details. Small modifications were made including the use of peer support and intensity of the use of the model. Complete implementation occurred in studies by Harris et al. (2006), Lane et al. (2006), Mason et al. (2006), and Glaser and Brunstein (2007). Modifications included peer support and evaluation within research conducted by Harris et al. (2006) and Monroe and Troia (2006). Also, researchers Monroe and Troia used the SRSD model as a supplemental model to increase peer self-evaluation and self-talk strategies.

Saddler & Asaro (2007); Lienemann, Graham, Leader-Janssen, and Reid (2006); and Harris, Graham, and Mason (2006) conducted studies on the effects of the SRSD model with second grade students with a variety of disabilities. The three studies used the SRSD model along with mnemonics POW and WWW, W=2, H=2 (Who, Where,
When, What=2, How=2). Research conducted by Chalk, Hagan-Burke, and Burke (2005) and Monroe and Troia (2006) studied the effects of the SRSD model in combination with mnemonic DARE (develop topic sentence, add supporting detail, reject arguments from the other side, end with a conclusion) to teach the basic framework of a persuasive essay to middle school students. Glaser and Brunstein (2007) conducted a study with fourth graders in combination with a three part German mnemonic A-H-A, which helps students remember the three main sections of a story (beginning, main body, ending). Also, a story grammar strategy was taught using the following “7W” mnemonic: Who is the main character, When and Where does the story take place, What is the goal or concern of the main character, What culminating point does the story aim at, What sequence of action leads up to this point, How does the story end?

Instructional time varied and ranged from 115 to 630 minutes, with an average of 351.5 minutes (See Appendix A). Chalk et al. (2005) stated that when 15 students were instructed for a total of 115 minutes, results for both length and quality were positive. Number of words from baseline to post-instruction increased an average of 37.4 words. Quality scores increased on average 1.8 points out of 16 total points. Saddler and Asaro (2007) taught six students for a total of 340 minutes. Length scores were not provided, however, quality scores increases by four points out of eight total points. Gains in length were not documented by Monroe and Troia (2006), however, in each quality category, gains increased from .58 points to 1.2 points.

Although all studies showed increases in length from baseline to post-instruction assessments, maintenance assessment results showed decline in length from the post-instruction assessments (Chalk et al., 2005; Harris et al., 2006; Lienemann et. al., 2006;
Sexton et al., 1998; Troia et al., 1999). Maintenance lengths were still higher than baseline assessments for these studies (See Appendix A).

Assessment of quality occurred in many forms throughout the nine studies. However, all rubrics and scales for quality of writing were fairly similar. All rubrics evaluated qualities including focus development, organization, fluency, and conventions such as sentence structure, grammar, and word choice. Glaser and Brunstein (2007) also gave scores for elaboration and originality. Various scales were used and are listed in Appendix B. Changes in quality points from baseline to post-instruction ranged from 0.2 points (Troia, Graham, & Harris, 1999) to 7.81 points (Glaser & Brunstein, 2007). Average increase in quality points from baseline to post-instruction assessment was 2 points across studies. Increases in quality scores from baseline to post-instruction were seen in all studies except for Troia et al. (1999). Narrative (story) assessment score increased by 0.24 points, however, the persuasive essay assessment scores decreased by 0.2 points.

Glaser and Brunstein (2007) found that from pre-test to post-test, overall the group that was instructed in SRSD writing strategies far surpassed the other two groups in the quality of their written compositions. Researchers also concluded that this group was able to generalize and retain the information better than the other two groups. The follow-up test was given five weeks after instruction and students of group one maintained the level in which they were writing, whereas the other two groups’ scores lowered substantially.

Finally, assessment in Monroe and Troia (2006) took the form of analyzing each essay for five quality traits including content, organization, sentence fluency, word
choice, and conventions. When comparing pre-instructed essays to assessment essays, all three students made notable gains in all five quality traits. Most gains were seen in the organization category and the next highest gain was in content (Monroe & Troia).

Overall, maintenance data was lower than post-instruction data in both length and quality assessments. One exception to this pattern was the Troia et al. (1999) study where quality scores increased from post-instruction to maintenance assessments. Assessments were given for both essay and narrative writing. From post-instruction to maintenance assessments, narrative scores increased 0.84 points and essay scores increased 0.9 points.

Maintenance of quality measures results showed slight decreases from post-instruction scores, but maintenance scores were higher than baseline scores. Two studies provided no maintenance measures of quality (Monroe & Troia, 2006; Saddler & Asaro, 2007). However, one study provided qualitative measures of quality during maintenance (Harris et al., 2006). Harris et al. stated that quality scores (as noted by qualitative analysis) were greater than baseline performance but lower than post-instruction scores.

While this research adds to the body of knowledge in the field of writing, there is still much research to be done. These studies show an increase in results in length and quality when using the SRSD model. However, it is difficult to know what the elements of success are within these studies. Many other variables such as the amount of time of instruction, peer support, group size, ethnicity, school location, and writing type could be relevant to success. Future research could include identical studies to specifically test each of these variables separately. Also, research is needed for disability classifications other than LD. Most studies using the SRSD model were done exclusively with students
with LD. However, research should be conducted to evaluate the success of students with other classified and non-classified LD.

To summarize, all studies examined, in this review, indicated success in increasing the quality of writing from baseline assessments to post-instruction assessments. Post-instruction scores and maintenance scores increased from baseline performance supporting the case of the SRSD model in positively affecting length and quality of students’ writing.

SRSD for students in the General Education Population

In research studying students with LD, similar emphases on particular aspects of the writing process are noted. Terminology and strategies may be varied; however, the following basic concepts about meta-cognitive writing strategies all produce higher levels of writing success (Harris et al., 2006; Lane, et al., 2006). Researchers suggest that self-regulated strategies that help students set goals, self-monitor, self-record, and self-evaluate aid in producing reflective and interactive writers (Harris et al.). Also, mnemonic devices which outline reflective and organizational questions lead students through the thought process involved in writing.

However, there are few studies examining the effectiveness of the SRSD model on students in the general education population. In this study, the following research questions are addressed:

1. How does the SRSD instruction affect the length in words of a writing assessment?
2. How does the SRSD instruction affect the number of parts in a writing assessment?
3. How does the SRSD instruction affect the quality of a writing sample assessed by a holistic quality rubric?

Method

Study Design

This study is a descriptive case study used to assess the effectiveness of the SRSD model with five fourth-grade students in writing a persuasive essay. This model included the POW + TREE strategy. Strategy effectiveness was measured by student performance in length of writing, number of parts within the structure of a persuasive essay, and quality of writing.

Setting

The study took place in an urban Elementary Charter School in Chester, Pennsylvania. The school’s population of 2,376 students is represented predominately by the African American race. Twenty-nine percent of students are classified as receiving special education services, including those in full resource classes, partial resource support, speech, and occupational therapy support.

Participants

Participant characteristics can be viewed in Appendix D. Student participants were selected based on a number of criteria. Students were in the fourth grade without being retained or promoted during their school years. Participants were also placed in full-time general education classes and were not serviced for any learning disabilities, speech and language impairment, or any other health impairment. Students were not receiving occupational therapy services. Students were also chosen based on availability to meet before school hours on Tuesday and Thursday mornings for the two months of
the study. These requirements were verified by the parents as well as the current teachers of the participants. Formal IRB approval and consent from all participants and parents was obtained.

Of the participants, 3 were male and 2 were female. All participants were African American. This ethnic composition is representative of the population of the entire school. The mean chronological age if the group was 9.5 years ranging from 9.1 to 10.4 years. Student names (changed to protect identity) were Susan, Timothy, Denise, Louis, and Todd.

**Strategy Instruction Lessons**

**Session 1:** Students were told about the study and briefly described the process. Students were then given 5 persuasive essay prompts and were asked to write 3 baseline assessments.

**Session 2:** The teacher introduced the terms “persuasive essay,” and “opinion.” The teacher explained that students were going to learn a strategy to help them improve their persuasive writing. Students were introduced to the mnemonic POW (Pick My Ideas, Organize My Notes, Write and Say More.) See Appendix I for POW + TREE mnemonic chart. The teacher modeled use of the mnemonic and had students write the mnemonic for memorization.

**Session 3:** Students wrote the mnemonic POW for a review assessment. Students orally reviewed the terms “essay,” and “opinion.” The teacher introduced the TREE (Topic Sentence, Reasons, Ending Sentence, Examine) mnemonic and related it to a real tree to help students remember. The teacher and students read one example of a persuasive essay and discussed and highlighted the parts of the essay. Transition words were
discussed and circled within the example. The essay organizer was introduced and the teacher modeled writing the elements from the example onto the organizer. Students read and highlighted the parts in another example essay and transferred the parts together onto an organizer. Finally, the teacher and students discussed generalization of the strategy.

Session 4: Students were given a second mini-assessment on mnemonics POW, TREE, and the definitions of “opinion,” and “essay.” The teacher and students worked through two more examples of persuasive essays. The teacher provided prompting for the first essay. Students worked independently on the second example. Students orally shared the identified parts, transition words, and “million dollar” words. Students then examined their baseline assessments and discussed the parts of an essay that were included and the parts that they should have added. Students also graphed their performance on the baseline assessments on the “Essay Rockets” and set a goal for themselves for an increased number of points of their upcoming assessments. Finally, skills were reviewed.

Session 5: Another quiz was given on POW, TREE, “opinion,” and “essay.” The teacher modeled the strategy using self-talk and self statements. See Appendix J for the self statement sheet. Transforming the organizer into complete sentences for writing an essay was modeled. Each step of the strategy was discussed so that students followed the strategy thoroughly. Students helped the teacher grade and graph the model exercise. Students then developed self-statements. Material covered during this lesson was then reviewed.

Session 6: Another quiz was given on POW, TREE, “opinion,” and “essay” to insure students remember these skills. Students were then given time to work through a sample
prompt collaboratively with the teacher and other students. Results were shared and discussed. Suggestions for improvement were given. Students graphed the score of this sample on their essay rockets. Material covered during this lesson was then reviewed.

Session 7: Another quiz was given on POW, TREE, “opinion,” and “essay” to insure students remember these skills. Students were then given time to work through a sample prompt independently and without the graphic organizer. Students’ writing was shared and peers helped score and provide suggestions for improvement. Material was then reviewed.

Session 8: Students were introduced to the Six Steps for Revising Checklist [Read your essay, Find the sentence that tells what you believe, Two reasons, SCAN (Make sense, Connected to my belief, Add more, Note Errors with COPS-Capitalization, Overall appearance, Punctuation, Spelling each sentence), Make changes, Read your essay and make final changes]. Students used their independent practice essay to use the six steps for revising checklist, SCAN, and COPS. Material was then reviewed.

Session 9: Students were given the same 5 persuasive writing prompts as given for baseline assessments. They were asked to write 3 post-instruction assessments.

Assessment

Testing sessions were held twice during the study; one hour for three baseline assessments, and one hour for three post-instruction assessments. Students were timed for each baseline and post-instruction assessment. See Appendix E for results. Students were given five persuasive prompts written by Harris, Graham, Mason, and Friedlander (2008) to choose three to write for both baseline and post-instruction assessments. There was no time limit for each assessment.
Measures

Story Length. To assess the length of the baseline and post-instruction assessments, the writing assessments were typed into a Microsoft Word document and the word counter feature was used for accuracy. Students writing samples were typed using exact spelling and word and sentence structure. Words that were unknown due to spelling errors were typed and counted as one word.

Story Parts. The teacher and a Pennsylvania State University professor scored each assessment according to the SRSD criteria for each part within an essay. Parts included topic sentence, reasons, explanations, counter-argument, and ending sentence. Students were allocated one “part” for each included element within the SRSD persuasive essay structure.

Story Quality. The teacher and a Pennsylvania State University professor scored each assessment according to the SRSD model’s holistic quality rubric based on a 7 point score. See Appendix K for rubric.

Reliability

Reliability for total parts was 73%, with 22 agreements out of 30 total scores. Reliability for quality was 76%, with 23 agreements out of 30 total scores. Scorers scores were averaged together to arrive at the current scores represented in Appendices G and H.

Results

Participants benefitted from the use of the SRSD strategy. Increases in number of words, parts written and quality were noted across all assessments. Students’ writing was more structured and understandable following instruction. All students except Denise
spent more time writing each prompt during the post-instruction assessments. See Appendix E for details regarding length of assessment time.

*Number of words written*

Almost all students made increases in number of words from baseline to post-instruction assessments (see Appendix F). Number of words ranged from 2 to 65 for baseline and from 55 to 139 words for post-instruction assessments. All students made increases of at least 35 words from baseline to post-instruction except for Denise who made increases on average 17.5 words on two assessments. Denise wrote 87 words on her first baseline assessment and her performance decreased by 10 words on post-instruction assessment 1. Susan made the highest gains in number of words with an increase of 74 words. At baseline her number of words ranged from 49 to 65 and on post-instruction assessments her number of words ranged from 131 to 141. Louis began the study writing 2 words on each of his baseline assessments and ended up writing more than 55 words on his post-instruction assessments. Todd’s scores ranged from 15 to 109 (the highest spread of data in number of words.)

*Number of parts written*

For mostly all students, the number of parts written increased by at least one part (See Appendix G). However, Denise decreased by one part from baseline 3 to post-instruction 3. Although Denise had the highest baseline average (4.5) she had the lowest average increase in parts (an increase of .83) from baseline to post-instruction assessments. The remainder of data remains positive. Louis made the highest gains in number of parts ranging from 0 to 9 parts. His average number of parts ranged from 0 to 6.33 parts in post-instruction assessments. Susan had the highest post-instruction average
of 8.83 parts. All post-instruction assessments included a topic and ending sentence. Most included at least three reasons why they supported the chosen side. Students lacked parts including writing explanations for each reason, and counter-arguments.

**Quality of responses**

All students increased the quality of writing from baseline to post-instruction assessments by at least 1 point (See Appendix H). Most students increased the quality by 2 points or more. Baseline average scores ranged from 0 to 3.83, while post-instruction scores ranged from 4.5 to 6 points. Average growth in quality from baseline to post-instruction ranged from .83 to 3.34 points. Susan achieved the highest success in average quality scores with an average of 6 points. While Susan’s baseline to post-instruction gain was 3.34 points, Louis had the highest average gain of 4.5 points. His baseline scores were all 0 points; therefore, his growth was very successful and ranged from 4 to 5.5 points on post-instruction scores. Interestingly, Timothy, Denise, and Todd averaged the same post-instruction quality score of 4.66. However, their growth varied greatly. Timothy increased his quality score by 2.16 points, while Denise increased .83 points and Todd increased 2.66 points.

**Discussion**

It is evident by the data collected that there was need for instruction and improvements were made by SRSD instruction. Students clearly understood the instruction and grasped the concepts and benefits of the curriculum. The success in both number of parts and quality scores is evident since the quality rubric provides scores for increased number of parts. Quality scores were somewhat depressed. Although some
parts were indentified within an assessment, they were not necessarily considered due to clarity of the thought and repetition within the assessment.

One student, Denise, struggled a little more than other participants, resulting in less growth. Reasons for the decline of some of her data are unknown. Possible answers may include lack of motivation, lack of planning, or misunderstanding of the strategy. Denise’s average quality score and number of parts increased minimally, which may lead to these assumptions.

Also, the length in minutes for each assessment varied from baseline to post-instruction assessments. See Appendix E. There is not much consistency in time for any participant. Length ranged from 1 to 19 minutes. Conclusions cannot be drawn from this information.

It is not determined which part of the model lead to student success. However, many elements would be considered “special,” including the elements of self-monitoring, setting goals and graphing progress, and the use of self statements to keep students focused and motivated.

Overall, all participants were successful in increasing number of words, number of parts, and quality of writing. This study adds to the body of successful research conducted on students in the general education population. This success would suggest that the SRSD strategy would be a beneficial writing tool for all general education students.

Limitations and future research

This study is limited by many factors. The group size was small and therefore generalization for a larger population is difficult. Maintenance and generalization data
was not collected due to time and participant circumstances. Also, both scorers were not blind to the purpose of the study and one scorer did not receive training on the scoring process. Therefore, scoring reliability was weak. Future research should be conducted on small and large groups of general education students to further the body of research in this area. Also, general education studies should be analyzed with studies done with special education populations to compare rates of improvement. Finally, it is unclear which parts of the strategy are the elements of success. The body of research would benefit from a number of studies which break apart certain elements (amount of time instructed, amount of planning time, graphing and goal setting, self-statements) to examine the success factors.

Summary

Writing is challenging for many people, regardless of learning ability and culture. It requires skills that are difficult to teach because of the meta-cognitive nature of writing. Though more research is needed across learning areas, ages, and cultures, the SRSD model has proven to be effective in many cases. The present research indicated success for all five fourth-grade general education participants using the SRSD model for persuasive writing, including use of mnemonics POW + TREE, the six steps to revising, SCAN, and COPS. Students writing improved in areas of length, structure parts, and quality.
References


## Appendix A. SPLED participants, instructional time, and method

<table>
<thead>
<tr>
<th>Authors</th>
<th>Participants Number/Grade</th>
<th>Instruction Time</th>
<th>Type of Writing</th>
<th>Mnemonic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chalk, Hagan-Burke, &amp; Burke (2005)</td>
<td>15/10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>115 min.</td>
<td>Essay</td>
<td>DARE</td>
</tr>
<tr>
<td>Glaser &amp; Brunstein (2007)</td>
<td>41/4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>180 min.</td>
<td>Narrative</td>
<td>AHA, 7 W’s</td>
</tr>
<tr>
<td>Harris, Graham, &amp; Mason (2006)</td>
<td>22/2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>378 min.</td>
<td>Narrative</td>
<td>WWW, What=2, How=2, Who =2, POW+TREE</td>
</tr>
<tr>
<td>Monroe &amp; Troia (2006)</td>
<td>3/6&lt;sup&gt;th&lt;/sup&gt;, 7&lt;sup&gt;th&lt;/sup&gt;, &amp; 8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>630 min.</td>
<td>Opinion Essay</td>
<td>DARE, SPACE, CDO, SEARCH</td>
</tr>
<tr>
<td>Saddler &amp; Asaro (2007)</td>
<td>6/2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>340 min.</td>
<td>Persuasive</td>
<td>POW+TREE</td>
</tr>
<tr>
<td>Sawyer, Graham, &amp; Harris (1992)</td>
<td>11/5&lt;sup&gt;th&lt;/sup&gt; &amp; 6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>323 min.</td>
<td>Narrative</td>
<td>WWW, What=2, How=2, Who =2, POW+TREE</td>
</tr>
<tr>
<td>Sexton, Harris, &amp; Graham (1998)</td>
<td>6/5&lt;sup&gt;th&lt;/sup&gt; &amp; 6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>432 min.</td>
<td>Persuasive</td>
<td>TREE</td>
</tr>
<tr>
<td>Troia, Graham, &amp; Harris (1999)</td>
<td>3/5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>525 min.</td>
<td>Narrative Persuasive</td>
<td>SPACE, DARE</td>
</tr>
</tbody>
</table>
## Appendix B. SPLED average scores of number of words in assessments

<table>
<thead>
<tr>
<th>Authors</th>
<th>Baseline</th>
<th>Post-Instruction</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chalk, Hagan-Burke, &amp; Burke (2005)</td>
<td>95.6</td>
<td>133.0</td>
<td>128.0</td>
</tr>
<tr>
<td>Glaser &amp; Brunstein (2007)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Harris, Graham, &amp; Mason (2006)</td>
<td>37.32 (Narrative)</td>
<td>49.50 (Narrative)</td>
<td>Stories were longer than baseline but shorter than post-instr.</td>
</tr>
<tr>
<td></td>
<td>39.82 (Informative)</td>
<td>52.86 (Informative)</td>
<td></td>
</tr>
<tr>
<td>Lienemann, Graham, Leader-Janssen, &amp; Reid (2006)</td>
<td>28.0</td>
<td>55.8</td>
<td>47.4</td>
</tr>
<tr>
<td>Monroe &amp; Troia (2006)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Saddler &amp; Asaro (2007)</td>
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<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Sawyer, Graham, &amp; Harris (1992)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Sexton, Harris, &amp; Graham (1998)</td>
<td>32.3 (21-76)</td>
<td>59.16(31-91)</td>
<td>N/A</td>
</tr>
<tr>
<td>Troia, Graham, &amp; Harris (1999)</td>
<td>97.2 (Story)</td>
<td>142.0 (Story)</td>
<td>108.3 (Story)</td>
</tr>
<tr>
<td></td>
<td>70.5 (Essay)</td>
<td>102.3 (Essay)</td>
<td>91.6 (Essay)</td>
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</table>
### Appendix C. SPLED quality methods and average quality scores

<table>
<thead>
<tr>
<th>Authors</th>
<th>Method</th>
<th>Baseline</th>
<th>Post-Instruction</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chalk, Hagan-Burke, &amp; Burke (2005)</td>
<td>Four – 6 point categories, 24 total points</td>
<td>9.9</td>
<td>11.7</td>
<td>11.5</td>
</tr>
<tr>
<td>Harris, Graham,&amp; Mason (2006)</td>
<td>8 point scale, 8 total points</td>
<td>1.73(Narrative)</td>
<td>2.59( Narrative)</td>
<td>Quality was greater than baseline but lower than post-instr.</td>
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<tr>
<td>Lienemann, Graham, Leader-Janssen, &amp; Reid (2006)</td>
<td>7 point scale, 7 total points</td>
<td>1.8</td>
<td>3.26</td>
<td>3.21</td>
</tr>
<tr>
<td>Monroe &amp;Troia (2006)</td>
<td>5 - 6 point categories, 30 total points</td>
<td>1.94(point/ category)</td>
<td>2.96(point/ category)</td>
<td>none</td>
</tr>
<tr>
<td>Saddler &amp; Asaro (2007)</td>
<td>8 point scale, 8 total points</td>
<td>2.46</td>
<td>6.36</td>
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<tr>
<td>Sawyer, Graham, &amp; Harris (1992)</td>
<td>7 point scale, 7 total points</td>
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<td>3.80</td>
<td>3.58 (2-wk.)</td>
</tr>
<tr>
<td>Sexton, Harris, &amp; Graham (1998)</td>
<td>8 point scale, 8 total points</td>
<td>2.1</td>
<td>4.65</td>
<td>3.46 (4-wk.)</td>
</tr>
<tr>
<td>Troia, Graham, &amp; Harris (1999)</td>
<td>2-8 point quality scores (Essay and story writing)</td>
<td>3.2(Story)</td>
<td>3.46(Story)</td>
<td>4.3(Story)</td>
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<tr>
<td></td>
<td></td>
<td>4.3(Essay)</td>
<td>4.1(Essay)</td>
<td>5(Essay)</td>
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### Appendix D. Research participant characteristics

<table>
<thead>
<tr>
<th>Student</th>
<th>Grade</th>
<th>Age</th>
<th>Sex</th>
<th>Race</th>
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<td>Susan</td>
<td>4</td>
<td>9.3</td>
<td>F</td>
<td>African American</td>
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<tr>
<td>Timothy</td>
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<td>9.3</td>
<td>M</td>
<td>African American</td>
</tr>
<tr>
<td>Denise</td>
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<td>9.11</td>
<td>F</td>
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</tr>
<tr>
<td>Louis</td>
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<td>10.4</td>
<td>M</td>
<td>African American</td>
</tr>
<tr>
<td>Todd</td>
<td>4</td>
<td>9.1</td>
<td>M</td>
<td>African American</td>
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## Appendix E. Writing time in minutes

<table>
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<tr>
<th>Time</th>
<th>Baseline1</th>
<th>Baseline2</th>
<th>Baseline 3</th>
<th>PostInst.1</th>
<th>PostInst.2</th>
<th>PostInst.3</th>
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<td>Susan</td>
<td>12</td>
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<td>4</td>
<td>22</td>
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<td>9</td>
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<tr>
<td>Timothy</td>
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<td>4</td>
<td>7</td>
<td>19</td>
<td>10</td>
<td>10</td>
</tr>
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<td>7</td>
<td>8</td>
<td>6</td>
<td>7</td>
</tr>
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<td>1</td>
<td>1</td>
<td>16</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>Todd</td>
<td>10</td>
<td>3</td>
<td>3</td>
<td>14</td>
<td>10</td>
<td>13</td>
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Appendix F. Mean scores of number of words written

<table>
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<tr>
<th>Participants</th>
<th>Baseline1</th>
<th>Baseline2</th>
<th>Baseline3</th>
<th>Post-Instr.1</th>
<th>Post-Instr.2</th>
<th>Post-Instr.3</th>
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<tbody>
<tr>
<td>Susan</td>
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<td>49</td>
<td>55</td>
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<td>131</td>
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<td>48</td>
<td>80</td>
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<td>77</td>
<td>80</td>
<td>77</td>
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<td>2</td>
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<td>79</td>
<td>55</td>
<td>62</td>
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<tr>
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<td>18</td>
<td>20</td>
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Appendix G. Means and standard deviations of parts written

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<tr>
<th>Participants</th>
<th>Baseline1</th>
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<th>Baseline3</th>
<th>Baseline Mean</th>
<th>Post-Instr.1</th>
<th>Post-Instr.2</th>
<th>Post-Instr.3</th>
<th>Post-Instruction Mean</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Baseline SD)</td>
<td></td>
<td></td>
<td></td>
<td>(Post-Instruction SD)</td>
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<tr>
<td>Susan</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td>4</td>
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<td>10.5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>(.68)</td>
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<tr>
<td>Timothy</td>
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<td>2</td>
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<td>2.83</td>
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<td></td>
<td>(.84)</td>
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<tr>
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<td>6</td>
<td>4.5</td>
<td>5.33</td>
</tr>
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<td></td>
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<td></td>
<td>(.70)</td>
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<td>(.62)</td>
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<td>4.5</td>
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<td>2.33</td>
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<td>6.5</td>
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<td></td>
<td>(.47)</td>
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### Appendix H. Means and standard deviations of quality scores

<table>
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<tr>
<th>Participants</th>
<th>Baseline1</th>
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<th>Baseline3</th>
<th>Baseline Mean (Baseline SD)</th>
<th>Post-Instr.1</th>
<th>Post-Instr.2</th>
<th>Post-Instr.3</th>
<th>Post-Instruction Mean (Post-Instruction SD)</th>
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<tr>
<td>Susan</td>
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<td>2</td>
<td>2</td>
<td>2.66 (.94)</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>6 (.81)</td>
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<tr>
<td>Timothy</td>
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<td>2</td>
<td>3</td>
<td>2.5 (.40)</td>
<td>4.5</td>
<td>5</td>
<td>4.5</td>
<td>4.66 (.23)</td>
</tr>
<tr>
<td>Denise</td>
<td>4</td>
<td>3.5</td>
<td>4</td>
<td>3.83 (.23)</td>
<td>4.5</td>
<td>5</td>
<td>4.5</td>
<td>4.66 (.23)</td>
</tr>
<tr>
<td>Louis</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0)</td>
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<td>4</td>
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<td>2 (0)</td>
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<td>4</td>
<td>5</td>
<td>4.66 (.47)</td>
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</tbody>
</table>
Appendix I

POW + TREE Mnemonic Chart

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

**TREE**

**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 J

Self-Statement Sheet

My Self-Statements

To think of good ideas:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

While I work:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

To check my work:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Appendix K

Holistic Quality Scoring Guide

Score of 5. Persuasive essay includes topic sentence, three or more reasons, an explanation for each reason and ending sentence. Essay is organized and includes a counter reason.

Score of 4. Persuasive essay includes a topic, three or more reasons, explanations, an ending and is organized.

Score of 3. Persuasive essay includes a belief with reasons and has some other elements of a persuasive response (i.e. explanation or ending).

Score of 2. Persuasive essay includes a belief with a list of reasons.

Score of 1. Persuasive essay includes a belief.

Score of 0. No essay parts. Student’s beliefs are unclear or the student argues both sides of an argument.