

USE OF TEACHER-SUPPORTED GOAL SETTING TO IMPROVE WRITING  
QUALITY, QUANTITY AND SELF-EFFICACY IN MIDDLE SCHOOL WRITERS

by

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## DISSERTATION ABSTRACT

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Title: Use of Teacher Supported Goal Setting to Improve Writing Quality, Quantity and Self-Efficacy in Middle School Writers

The purpose of this study was to explore the impact of a writing workshop with a goal setting intervention on writing quality, quantity and self-efficacy. Students in Treatment 1 used the writing workshop process and received a teacher-supported goal setting intervention in the self-edit step of the writing process consistent with the Self-Regulated Strategy Development approach. Students in Treatment 2 received only writing workshop instruction and a generic checklist in the self-edit step. Students in the Comparator group received business-as-usual writing instruction in their language arts/social studies block. Writing measures document quality of writing through a holistic scale, quantity of writing through word counts, and the quantity of writing through parsable units. The Writer Self-Perception Scale, or WSPS, measured students' self-efficacy in writing for the Treatment 1 and Treatment 2 groups. This study expands on existing research that explores strategy interventions in writing workshops to increase student achievement in writing.

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# CHAPTER I

## INTRODUCTION AND LITERATURE REVIEW

Writing is an increasingly important 21st-century skill. Students today must be able to express themselves clearly and cohesively in a technology-driven world. Yet college instructors estimate that 50% of college students are not prepared for the writing demands of higher education (Achieve, Inc., 2005). Employers spend \$3.1 billion per year in writing remediation (National Commission on Writing, 2004). In 2013, the new Common Core State Standards have been adopted by 45 states. At both the middle school and high school levels in language arts, these standards focus heavily on writing in the expository and persuasive modes and aim to provide secondary students with college and career preparation in writing.

The field of writing research has proliferated in the past 20 years. Recent research has found that product-based interventions nested within the writing process approach have the potential to improve writing quality and student self-efficacy, including that of struggling writers, gifted writers and Limited English Proficient students (Graham & Perin, 2007). In spite of the growing body of research in writing, there is still very little research on low-achieving writers from low-income settings.

The purpose of this study is to explore the impact of writing workshop with a goal setting intervention on writing quality, quantity and self-efficacy. Students in Treatment 1 used the writing workshop process and received a teacher-supported goal setting intervention in the self-edit step of the writing process consistent with Self-Regulated Strategy Development approach. Students in Treatment 2 received only writing workshop

instruction and a generic checklist in the self-edit step. Students in the Comparator group received business-as-usual writing instruction in their language arts/social studies block. Writing measures document quality of writing through a holistic scale, quantity of writing through word counts, and the quantity of writing through parsable units. The Writer Self-Perception Scale, or WSPS (1997), measured students' self-efficacy in writing.

The research questions explore the link between treatment conditions and student writing performance on three measures. Student performance between treatment conditions is explored in terms of writing holistic score, writing word count score, and writing parsable units score. Finally, I explore the relationship between treatment conditions and self-efficacy as measured through the Writer Self-Perception Survey for the Treatment 1 and Treatment 2 Groups.

I frame this study examining the writing process model and describe its articulation over time in the research literature. I then describe a series of product-based interventions, focusing specifically on the Self-Regulated Strategy Development (SRSD) model. The most critical elements of the SRSD model include goal setting, self-efficacy, and motivation, which I address both in terms of research methods and outcomes to guide the study. Through this discussion, I argue that increased self-efficacy leads to increased academic motivation in students, which leads to greater student achievement in writing. Finally, I conclude by addressing the implications for practice.

To locate studies relating to process-based and Self-Regulated Strategy Development, I searched electronic databases (Google Scholar, ERIC, PsychINFO, Academic Search Premier) with variations of the following terms: *writing* and

*adolescent, writing assessment, Self-Regulated Strategy Development, Writing Workshop, writing process, product-based writing, National Writing Project, professional development, struggling adolescent writers, second language and adolescent writing, poverty and adolescent writing, socioeconomic status and adolescent writing, writing skills and college preparedness.* Titles and abstracts were scanned in search of information specific to components of this study. Components included (a) adolescent writers, (b) a description of the attributes of struggling adolescent writers, (c) a description of the attributes of skilled writers, (d) studies that focused on specific writing interventions in an experimental or quasi-experimental research design, (d) a description of Writing Workshop/writing process curriculum, (e) a description of Self-Regulated Strategy Development, (f) specific information relating to goal setting in writing, (g) specific information relating to self-efficacy in writing, and (h) specific information relating to validity of measures used in this study.

### **Writing Process Research**

The writing process has been a subject of scholarly research since the 1970s when theorists explored cognitive models of masterful writing. The late 1970s and 1980s saw the development of research based on curriculum models, leading to widespread usage of the Writing Workshop method in elementary and middle school classrooms.

## **Cognitive Models of the Writing Process**

Research models of thinking skills related to writing emerged in the late 1970s and early 1980s as researchers explored the cognitive aspects of the writing process at different developmental levels. Flower and Hayes' (1980) seminal research on the writing process asked adults to "think-aloud" while writing and revealed the cognitive and psychological processes of writing. Their research revealed that skilled writing consists of a complex set of components, including goal setting, planning, revising, developing concepts and drawing ideas from memory.

Flower and Hayes' (1980) model served as a catalyst for further research on the *architecture* of the writing process. Bereiter and Scardamalia (1987) built upon Flower and Hayes' (1980) framework by comparing less-skilled writers' approaches with those of more skilled counterparts, and found that novice writers employ "knowledge telling" in their writing, limiting the scope of their discussion by ignoring bigger picture concerns of audience, planning, revising, or message. Novice writers also focus on retrieval of ideas in the moment, a method dubbed "retrieve and write" (Page-Voth & Graham, 1999). Cognitive resources are directed towards recall, and not towards skilled writing methods, such as establishing content, rhetorical, or performance goals.

In contrast, Bereiter and Scardamalia (1987) found that expert writers engage in "knowledge transforming." This approach involves planning text with an eye toward rhetorical, communicative and pragmatic concerns. Expert writers commonly employ problem analysis and goal setting to achieve more complex writing products. Both problem analysis and goal setting allow the writer to engage in planning throughout the



writing process to create a match between the writer's intentions and the final product. Alamargot and Chanquoy (2001) have explored knowledge telling and knowledge transforming as two ends of a continuum in skilled writing. The development of writing expertise occurs through progression across intermediate stages.

Finally, Zimmerman and Risemberg (1997) built on the prior models of Flower and Hayes (1980) and Bereiter and Scardamalia (1987) by focusing on self-regulatory strategies employed by skilled writers. Zimmerman and Risemberg examined cognitive and noncognitive skills related to writing performance. Their model added to previous models by exploring writers' beliefs about competence and how writers manage the composing process through self-regulation. Skilled writers shape their personal, environmental, and behavioral processes to regulate their writing behavior. For example, skilled writers may employ a personal time management process to estimate and budget time for writing or to set goals. They may control the environment for writing, such as creating a special place to write. They may also employ a behavioral process to track their own progress, such as keeping track of number of pages written or providing motivating self-rewards.

### **Curriculum Models of the Writing Process**

The focus of research in theoretical models gave rise to qualitative research and curriculum models that applied aspects of these models in elementary and middle school classrooms. In 1973, Donald Graves collected qualitative data on children's writing process, studying their thematic choices, writing frequency, and types of writing. Graves

concluded that multiple variables influence the writing process (Pritchard & Honeycutt, 2006).

One member of Graves' team, Lucy Calkins (1986), used direct observations of children composing, interviews with children and teachers, drafts, and video of children composing and conferencing with teachers to explore elements of effective Writing Workshop practices. This led to a 2-year study, published in 1982 and 1983 that explored one child's development in Writing Workshop. This research, though limited to one student, had enormous impact on how the writing process is implemented in the elementary grades. However, as noted by Pritchard and Honeycutt (2006), this type of research did not address specific types of validity that are now expected.

The book *In The Middle: New Understandings About Writing, Reading, and Learning*, by Nancy Atwell (1988), built on Calkins and Graves' framework by exploring the use of Writing Workshop methodology with adolescent writers, which led to further curriculum manuals now in widespread use by teachers of Writing Workshop. As with Calkins and Graves' research, these curriculum materials bridged the gap from theory to practice but lacked research design and experimental controls. Ultimately, findings surrounding these curriculum models have been inconclusive in terms of measurable, empirically-tested research. This lack of conclusive findings has led writing researchers to product-oriented intervention research, which has narrowed their focus to specific elements of the writing process.

## From Writing Workshop Research to Writing Interventions

Today Writing Workshop has been widely implemented in schools, though the approaches within the workshop model appear to be vague and loosely conceptualized by teachers. In the 1990's, researchers asserted that the writing process was best understood as a complex phenomenon encompassing procedures for generating text and for engaging in bigger picture concerns (Pritchard & Honeycutt, 2006). However, empirical studies of the writing process were limited. In response to this gap in the research, empirical research in the late 1990s began to isolate specific skills nested within the Writing Workshop setting through small-scale studies with experimental designs. These studies focused on two broad areas, skill-based interventions and product-based interventions.

The Writing Workshop/writing process environment is often the setting for *skill-based* writing interventions. Though not the focus of this study, skill-based interventions are common in writing research. Skill-based interventions focus on improving the basic skills of writing. This can include transcription skills, such as handwriting, keyboarding, and spelling, in an effort to improve the automaticity of writing. As automaticity builds, a writer gains the freedom to use cognitive effort on higher-order concerns. Another area of skill-based interventions focuses on sentence combining. Writers compose progressively more complex sentences, which improves writing quality overall (Graham, 2011).

The Writing Workshop/writing process environment can also be the context for *product-based* interventions in which explicit instructions are provided about the purpose and characteristics of a writing product and students are directed to reflect on their work in an ongoing, structured manner (Graham & Perin, 2007).

This research approach to isolating specific elements of the writing process has given rise to a rich vein of research known as the Self-Regulated Strategy Development model, pioneered by Harris and Graham (1996, 1999) at Vanderbilt University. Self-Regulated Strategy Development (SRSD) is a cohesive program of interventions designed to enhance strategic behaviors, self-regulation skills, content knowledge and motivational dispositions (Harris & Graham, 1996, 1999).

### **Self-Regulated Strategy Development Overview**

In Self-Regulated Strategy Development, *strategic behaviors* are advanced through instruction on sophisticated strategies for accomplishing an academic task. Children are taught a number of *self-regulation skills*, including goal setting, self-monitoring, self-instructions, and self-reinforcements. *Content knowledge* is enhanced through teaching information or skills needed to use selected strategies. *Motivation* is increased through explicit instruction on the role of effort in learning, clearly explaining positive effects of instruction, and modeling an “I can do” attitude (Graham & Harris, 2003).

SRSD is characterized by explicit teaching, individualized learning, and criterion-based learning. The Self-Regulated Strategy Development model comprises six stages of instruction: *Develop Background Knowledge* (students are taught relevant background knowledge to use a strategy), *Describe It* (the strategy and purpose are discussed), *Model It* (the teacher models how to use the strategy), *Memorize It* (students memorize the steps of the strategy), *Support It* (teacher supports or scaffolds the strategy), and *Independent Use* (students use the strategy on their own; Graham, 2006a). Graham’s (2006a) meta-

analysis of SRSD studies found that investigations of the SRSD model yielded a mean effect size at posttest almost double the average effect size found by researchers using other approaches. Three of the aspects of SRSD relevant to my proposed study—goal setting, self-efficacy, and motivation—are discussed further.

### **Goal Setting**

SRSD researchers have found that goal setting is a key component of skilled writing. Graham, MacArthur, Schwartz, and Page-Voth (1992) note that goals affect student performance by directing attention to specific elements, marshaling effort, raising persistence, and stimulating the use of strategies for goal attainment. Through goals, writers can plan their work effectively, set output goals, and incorporate feedback. By contrast, struggling writers often begin an assignment without goals and have difficulty completing or revising (Scardamilia & Bereiter, 1986). Flower and Hayes (1980) found that skilled writers develop both product (content generation) and process (strategy use) goals when writing. SRSD researchers have focused on the importance of goal setting in general and have also narrowed in on specific elements of the writing process. The two elements most relevant to this study are planning goals and product goals. The use of a checklist, as in this study, encompasses planning goals and product goals. Students are asked to spend more time in planning through the use of the checklist tool, and the goal-setting step on the checklist directs specific attention to key aspects of the writing product.

## **Planning Goals**

Planning goals allow writers to focus on what they plan to say in a paper (Flower & Hayes, 1980). Specific studies of planning have contrasted the planning habits of skilled writers with those of struggling writers. Younger writers tend to focus on content generation for planning, while older writers focus on conceptual planning, including setting goals related to ideas, audience, content or organization (McCutchen, 2006). Conceptual planning, focusing on quality of ideas, audience, content or organization, can be achieved with considerable instructional support, such as using SRSD strategies (Page-Voth & Graham, 1999).

When planning occurs, novice writers often focus on retrieving content from memory, such as saying words aloud as they write (Flower & Hayes, 1980; McCutchen, 2006). Novice writers also devote little time to planning: Cameron and Moshenko (1996) report that students spent slightly over two minutes planning before beginning to write, while Bereiter and Scardamilia (1987) reveal that students often begin writing within a minute of receiving a writing task. By contrast, skilled undergraduate writers plan compositions in advance, by crafting detailed outlines and lists of ideas prior to composing (Bereiter & Scardamilia, 1987).

Instruction that focuses on deliberate conceptual planning—e.g., quality of ideas, audience, content or organization—can help novice writers improve their writing (Page-Voth & Graham, 1999). In their study of seventh- and eighth-grade students with learning disabilities, Page-Voth and Graham (1999) had students compose three essays, responding to a different goal when writing each paper. The first essay focused on a goal

of increasing the number of supporting reasons, the second essay focused on increasing the refutation of counterarguments, and the third focused on increasing both types of elements. Students in the experimental Group were given explicit prewriting instructions to set a goal and this goal was referred to again in the postwriting conference. Students in the treatment Group simply discussed how they were feeling that day in the prewriting step and received general feedback in the postwriting conference. Their research showed that the establishment of goals specifying what will be included in a paper prior to composition significantly improved the writing performance of students with writing and learning difficulties.

### **Product Goals**

Setting specific product goals allows writers to know what they are striving to accomplish and directs attention to important aspects of a piece (Graham et al., 1992; Scardamalia & Bereiter, 1986). Setting product goals within the writing process has a proven effect on students' writing quality. Like Page-Voth and Graham (1999), Ferretti, MacArthur and Dowdy (2000) found that the use of a specific, product-oriented goal in a persuasive writing assignment for students with learning disabilities allowed them to write more persuasively as compared to a Comparator Group provided with a more general composing goal. Students in the general goal condition were asked to take a position and write a letter to persuade an audience. Students in the elaborated goal condition were given the same general goal plus explicit sub goals that directed them to include (a) a statement of their beliefs, (b) two or three reasons for their belief, (c)

examples or supporting information for each reason, (d) two or three reasons why others might disagree, and (e) why those reasons are wrong.

Students were given two prompts on two different occasions regarding controversial topics, and the essays were scored on overall persuasiveness and for the existence of elements of argumentative discourse. Sixth-grade students in the elaborated goal condition performed better than sixth-grade students in the general goal condition in terms of overall persuasiveness. Notably, there was no significant difference for fourth-grade students in both conditions, suggesting that product goals might be more effective for older students, who may have more experience with essay writing in general.

In a meta-analysis, Graham and Perin (2007) examined studies that incorporated a product-based intervention using goal setting, such as adding more ideas to a paper, establishing a goal to write a specific kind of paper, or assigning goals for specific structural elements in a composition. Graham and Perin found that explicitly teaching planning, revising and editing skills was highly effective for students in grades 4-10 with an effect size of .82 overall, and an effect size of 1.02 for struggling writers in particular. In studies where adolescents set clear and specific goals for the existence of various attributes of a writing product, the strategies yielded an effect size of .80.

### **Self-Efficacy**

As explored by Flower and Hayes' (1980) model, skilled writers use goals to monitor progress throughout the writing process towards the eventual goal of completing a composition. Zimmerman and Risemberg (1997) further explored self-regulation



domains of effective writers, hypothesizing that self-regulating strategies are essential to successful writing. Self-influence can enhance an individual's learning experiences. It would follow that these strategies and behaviors inspire greater motivation to improve and complete compositions, which, in cyclical fashion, tends to improve the learner's self-efficacy when writing. This section of the literature review will explore the relation between self-efficacy, motivation and writing achievement, then synthesize those findings with an exploration of the effect of SRSD strategies on self-efficacy and motivation.

Bandura (1986) set forth a compelling definition of self-efficacy as part of a larger social cognitive theory. Self-efficacy beliefs are conclusions regarding "capabilities to organize and execute the courses of action required to attain designated types of performances" (p. 391). Bandura established that students derive self-efficacy beliefs from four sources: (a) enactive mastery experience, or interpreted result of previous performance; (b) vicarious experience of observing others; (c) social persuasions from others; and (d) somatic and emotional states such as anxiety, stress, arousal and mood.

The enactive mastery experience is the most influential source of self-efficacy beliefs and the one most applicable to this study. Enactive mastery experiences, as explored by Bandura (1997), are the "most influential source of efficacy information because they provide the most authentic evidence of whether one can muster whatever it takes to succeed" (p. 80). Bandura further notes that complex performances, such as those we see in writing, are largely organized and controlled through employing self-regulative sub skills.

## **Motivation as a Mediating Variable on Student Achievement**

Student beliefs about their ability to produce desired outcomes are the foundation for academic motivation. Increased self-efficacy leads to increased motivation, which raises student achievement overall (Bandura, 1997). As noted by Bandura (1997), academic performance is the “product of cognitive capability implemented through motivational and other self-regulatory skills” (p. 216). Therefore, efficacy beliefs influence intellectual performance. Perceived efficacy influences academic performance indirectly by increasing persistence in the search for solutions. Bandura and Schunk (1981) note that when success is more difficult to attain, individuals with high degrees of self-efficacy are more likely to persist while those with low degrees of efficacy are more likely to quit.

Beliefs about ability and the possibility of success give students the incentive to take action and overcome challenges (Pajares & Valiante, 2006). Self-efficacy beliefs influence action (or inaction) because students select tasks that reinforce their competence and avoid tasks that do not reinforce competence (Bandura, 1986). As noted by Pajares and Valiante (2006), “Students with a strong sense of personal competence in an academic task will approach difficult tasks as challenges to be mastered rather than as threats to be avoided” (p. 159). Self-efficacy beliefs also influence thoughts and emotions, as students with low self-efficacy often experience anxiety and stress in the face of challenges. These negative reactions can influence the level of accomplishment experienced by students, leading to a domino effect of low expectations, low effort and low ensuing achievement. By contrast, high self-efficacy can provide encouragement and

perseverance that lead to better outcomes, creating a virtuous cycle of effort and accomplishment (Bandura, 1986).

Goal setting is an important sub skill of self-efficacy in terms of motivational behaviors. As noted in Bandura (1986), “Considerable research shows that both children and adults accomplish much more with the exercise of self-regulative influence than without it” (p. 229). Bandura then cites the writing habits of successful novelists as a compelling example of the power of motivational habits to accomplish a self-regulated goal. Many novelists set small daily goals, institute lengths of time for writing, and deliver product goals in terms of pages or words written per session.

### **Writing and Self-Efficacy**

Self-efficacy in the area of writing relates to students’ perception of their ability to perform writing and utilize the attendant strategies required in the composing process (Pajares, 2003). Students develop ideas about their academic abilities as a result of their success with self-regulatory strategies (Bandura & Schunk, 1981). Multiple researchers have explored the effect of strategy goals and regular feedback on strategy use and self-efficacy. Schunk and Swartz (1993) theorized that learners with greater self-efficacy should be more likely to choose to write, expend effort and follow through with writing tasks than students with doubts about their capabilities. In their study of fourth- and fifth-grade students’ self-efficacy and writing skills, Schunk and Swartz noted that self-efficacy was highly predictive of writing skill and strategy use. According to Pajares and Valiante (2006), several studies reveal that writing self-efficacy “makes an independent

contribution to the prediction of writing outcomes” (p. 162). Their review also found a strong link between beliefs and performance.

Students’ writing confidence and competence increase with the use of process goals and regular feedback on strategy use (Graham et al., 1992; Schunk & Swartz, 1993). Bandura (1986) notes that effective goal-setters create proximal challenges on their own through adopting goals and soliciting feedback, while less successful students set no goals and achieve no change (Bandura, 1986). Schunk and Swartz (1993) found that when process goals are linked with feedback, writing competence increases further and strategy use increases. By contrast, struggling writers often begin an assignment without goals and have difficulty completing or revising a piece (Scardamilia & Bereiter, 1986). According to a meta-analysis conducted by Pajares (2003), multiple researchers have linked student confidence in self-regulatory strategy use with higher intrinsic motivation and elevated academic achievement.

### **Summary of Relevant Literature**

Current research is mixed on the links between goal setting, self-efficacy and motivation. One reason is measurement constraints: Students must either self-report their self-efficacy or teachers must assess students’ intrinsic motivation based on their own subjective observations (Harris, Graham, & Mason, 2006). Several studies have shown increases in self-efficacy and persistence after SRSD instruction (Graham & Harris, 1989a, 1989b; Graham et al., 2006). However, other experimental research shows no link between measures of self-efficacy and motivation relative to writing quality (Harris et al.,

2006). Furthermore, in studies of learning-disabled students, students often overestimate their self-efficacy when this measure is compared to their holistic writing score as they overestimate their writing skill (Graham & Harris, 1989b). Given the disconnect between perceived self-efficacy and composition quality, researchers highlight the need for more research in this area, particularly in terms of the self-efficacy and motivation of struggling learners (Harris et al., 2006).

The use of the writing process model is widespread in today's classrooms, but specific elements of the model merit further research and exploration in empirical studies. Self-Regulated Strategy Development is a promising vein of research related to skills within the writing process approach. This literature review explored methodological research related to Self-Regulated Strategy Development, with particular emphasis on studies of goal setting. The literature review also examined the related constructs of self-efficacy and motivation, along with empirical studies of the effect on writing achievement. Using the logic of current writing instruction literature, the importance of goal setting within the writing process has been established. Researchers posit that goal setting in the writing process allows students to direct attention to important aspects of the writing task and to self-regulate their progress. In turn, successful completion of goals positively influences student self-efficacy, which can impact students' motivation to persevere with writing tasks. With the research literature in mind, this study's specific research questions explore the link between goal setting and writing holistic score, word count score, parsable units score, and assessment of self-efficacy.

## Research Questions

Measures in this study were designed to provide data to answer the following research questions:

- 1) What is the relationship between performance on each writing measure and the other writing measures (writing quality holistic score, writing word count score, and writing parsable unit score)?
- 2) What is the relationship between participation in persuasive essay instruction with goal-setting instruction, participation in persuasive essay instruction with no goal-setting instruction, and business-as-usual writing instruction and (a) writing quality as measured on the writing holistic score, (b) writing quantity as measured on the writing word count score, and (c) writing quantity as measured on the writing parsable units score?
- 3) What is the relationship between instructional conditions and writing self-efficacy as measured by the five subdomains of the Writer Self-Perception Scale (WSPS)?

## CHAPTER II

### METHODOLOGY

The results of this study provide data for researchers, scholars, and educators interested in exploring writing quality and quantity at the middle school level, and exploring the role of perceived self-efficacy in writing achievement. Given the lack of writing research on low-achieving and low-income populations, the results of this study may add to a needed area of future writing research with implications for policy design, curriculum adoption, and instructional strategies.

#### **Research Design**

The study was designed to examine the effect of an SRSD goal setting intervention using a quasi-experimental design in which performance on the pre-, and post-administrations of a persuasive writing sample, as well as the pre- and post-administrations of a self-efficacy student survey were compared to determine the effectiveness of the treatment.

Two treatment groups and one comparator group were used in the study. The Treatment 1 Group and Treatment 2 Group underwent focused writing workshop instruction during an eight-week period in September-November of 2012. The Comparator Group completed pre- and post- writing measures during the late fall 2012-winter 2013 school term to provide baseline data regarding student growth, and received regular writing instruction according to the school's language arts and social studies

program. While the original proposal had specified a shorter time period for the Comparator Group, scheduling difficulties prompted the adjustment of the schedule to meet the teacher's scheduling and time needs. Scheduling authority was beyond the scope of the researcher's responsibilities. With this limitation, there was very little significant time difference in terms of writing instruction between the Treatment 1 and Treatment 2 Groups and the Comparator Group due to the use of the block schedule.

The Treatment 1 and Treatment 2 Groups received intensive writing instruction for 90 minutes two days per week for eight weeks. The Comparator Group was on a different long-term schedule without intensive focus on writing from late fall through the winter term. They did not have specified writing instruction and instead received the regular language arts and social studies classes, which embed the writing process and writing assignments in these subjects.

Based on prior research, I hypothesized that sixth-grade students who performed at a higher level on one of the writing measures will perform at a higher level on another measure. I hypothesized that sixth-grade students who received writing workshop instruction plus a goal setting intervention would perform at a higher level in writing as measured on a holistic writing quality scale, word count, and parsable units. They would also demonstrate a higher level of self-efficacy as measured by the WSPS.

Measures in this study were designed to provide data to explore the link between treatment conditions and student writing performance. Performance between measures was explored. Student performance between treatment conditions was explored in terms of writing holistic score, writing word count score, and writing parsable units score. Finally, I explored the relation between treatment conditions and self-efficacy.



## Setting and Participants

The participants were 91 sixth graders from a middle school in an urban area of the Pacific Northwest. The school implemented both a writing-enrichment curriculum and a writing-across-the-curriculum program in the year before the study. Student participants were selected from the school's existing four sixth grade classes. The same teacher taught the Treatment 1 and Treatment 2 groups. A different teacher taught the Comparator Group. The Treatment 1 Group was chosen at random with a coin toss before pre-assessment.

School wide, 70% qualify for federal Free or Reduced Lunch assistance. (2012 Oregon Department of Education Report Card, 10/11/12). In the 6<sup>th</sup> grade, 66% of students qualify for Free or Reduced Lunch assistance (school data, February 2013). English Language Learner students comprised 7% of the total school population, with 13% of students at the school eligible for Special Education Services (2012 Oregon Department of Education Report Card, 10/11/12). Gender, Special Education (SpEd) status, and English Language Learner (ELL) status were considered as demographic variables. Each of the variables was coded as either yes or no with relation to SpEd or ELL. Gender was coded as either male or female. Participation in the study consisted of 33 out of 35 students (94%) in the Treatment 1 Group, 31 out of 36 students (86%) in the Treatment 2 Group, and 29 out of 34 students (85%) in the Comparator Group.

The school adhered to a block schedule, in which students attended three 90-minute classes on alternating days, known as "A" and "B" days. Subjects include social

studies, science, math, language arts/social studies in a block period, a supplementary elective (foreign language, PE, art, or a literacy supplemental class), math and science.

Table 1  
*Demographics of Participants for Treatment and Comparator Groups*

Group	<i>n</i>	ELL	%	SpEd	%	Boys	%	Girls	%
Treatment 1	33	0	0	3	9	15	45	18	55
Treatment 2	30	2	7	3	10	14	47	16	53
Comparator	28	2	7	7	25	14	50	14	50
Total	91	4	4	13	14	43	47	48	53

### Procedures

Table 2 shows a summary of procedures for treatment and Comparator Groups. There were three levels of treatment: Treatment 1, Treatment 2, and Comparator. For the Treatment 1 and Treatment 2 Groups, instruction took place during the special writing block instructional period, a 90-minute class that met Tuesdays and Thursdays. Each student participated in four modules led by the study’s author, a teacher with eight years of classroom experience.

Table 2

*Summary of Procedures for Treatment and Comparator Groups*

Stage	Group		
	Treatment 1	Treatment 2	Comparator
Pretest	Two 90-minute classes		One 90-minute class
	Research explained		
	Permission slips collected		
	Pre-assessment essay prompt administered		
Module One: Introduction to Persuasive Writing	Pre-assessment self efficacy scale administered		----
	Six 90 minute classes over three weeks		Writing instruction embedded in social studies and language arts classes
	Students wrote persuasive essay		
	Basic instruction on parts of a persuasive essay		---
	Checklist introduced		
	Goal-setting introduced (45 min)	---	---
Specific feedback given during the self-edit and teacher conference steps	General feedback given during the self-edit and teacher conference steps	---	
Module Two: Advanced Persuasive Writing	Six 90 minute classes over three weeks		Writing instruction embedded in social studies and language arts classes
	Students wrote persuasive essay		
	Basic instruction on parts of a persuasive essay		----
	Checklist introduced		
	Goal-setting reviewed (45 min)	---	---
	Specific feedback given during the self-edit and teacher conference steps	General feedback given during the self-edit and teacher conference steps	---
Posttest	Two 90-minute classes		One 90-minute class
	Post-assessment essay prompt administered		
	Post-assessment self-efficacy scale administered		---

## **Pretest**

The pretest consisted of two 90-minute class sessions for the Treatment 1 and Treatment 2 Groups. Research was explained and IRB permission slips were collected. During the first module, each student completed the self-efficacy scale. The instructor then presented an essay topic and asked the students to write about it.

The pretest for the Comparator Group was one 90-minute session. Research was explained and IRB permission slips were collected. Students did not complete the self-efficacy scale due to time constraints. The instructor then presented an essay topic and asked the students to write about it.

## **Module One: Introduction to Persuasive Writing**

Module One for the Treatment 1 and Treatment 2 Groups consisted of six 90-minute class sessions. During the Writing Workshop, students in both groups received all-group instruction on the parts of a persuasive essay, wrote one essay, and conducted a post-writing conference with the instructor. The Comparator Group received business-as-usual writing instruction during this time.

During Module One, the Treatment 1 Group received basic instruction on the parts of a persuasive essay plus a 45-minute lesson on goal setting. They wrote one persuasive essay and used a goal-setting checklist during the self-edit step of the writing workshop.

Four sample goals were presented to students as examples of acceptable planning/product goals, each of which focused on either quantity or quality of ideas.

The sample goals were: (a) I want to add one brand new supporting idea and take out one of the old supporting ideas, (b) I want to add one brand new supporting idea and add it to the old supporting ideas, (c) I want to examine one of my existing supporting ideas and make it a lot better with more details, and (d) I want to examine one of my existing supporting ideas and make it a lot better with better reasoning. See Appendix A for a copy of the checklist.

The teacher signed off on all product/planning goals through a prewriting conference with each student lasting one to two minutes. If goals were different than the example goals (ie, a strategy goal regarding how they would work during the writing workshop, goals specific to word choice and style, or other unrelated goals) they were asked to reframe in terms of a product/planning goal.

Once students were finished writing the essay, a post-writing conference was held in which the students conferenced with the instructor, and the instructor gave feedback on their success in achieving the goal. Teacher conferences lasted three to four minutes each.

During Module One, the Treatment 2 Group received basic instruction on the parts of a persuasive essay. They wrote one persuasive essay and used a regular checklist without goal setting during the self-edit step of the writing workshop (see Appendix B). During the prewriting conference, they were asked a general question about how they were doing that day. Once students were finished writing the essay, a post-writing conference was held in which the students conferenced with the instructor, they were given general feedback on the quality of the essay. Teacher conferences lasted three to four minutes each.

## **Module Two: Advanced Persuasive Writing**

Module Two for the Treatment 1 and Treatment 2 Groups consisted of six 90-minute class sessions. During the Writing Workshop, students in both groups received all-group instruction on the parts of a persuasive essay, wrote one essay, and conducted a post-writing conference with the instructor. The Comparator Group received business-as-usual writing instruction during this time.

During Module Two, the Treatment 1 Group received continued instruction on the parts of a persuasive essay with more emphasis on supporting paragraphs. They also received a 45-minute lesson on goal setting. They wrote one persuasive essay and used a goal-setting checklist during the self-edit step of the writing workshop.

Four sample goals were presented to students as examples of acceptable planning/product goals, each of which focused on either quantity or quality of ideas. The sample goals were: (a) I want to add one brand new supporting idea and take out one of the old supporting ideas, (b) I want to add one brand new supporting idea and add it to the old supporting ideas, (c) I want to examine one of my existing supporting ideas and make it a lot better with more details, and (d) I want to examine one of my existing supporting ideas and make it a lot better with better reasoning. See Appendix A for a copy of the checklist.

The teacher signed off on all product/planning goals through a prewriting conference with each student lasting one to two minutes. If goals were different than the example goals (ie, a strategy goal regarding how they would work during the writing

workshop, goals specific to word choice and style, or other unrelated goals) they were asked to reframe in terms of a product/planning goal.

Once students were finished writing the essay, a post-writing conference was held in which the students conferenced with the instructor, and the instructor gave feedback on their success in achieving the goal. Teacher conferences lasted three to four minutes each.

During Module Two, the Treatment 2 Group received continued instruction on the parts of a persuasive essay with more emphasis on supporting paragraphs. They wrote one persuasive essay and used a regular checklist without goal setting during the self-edit step of the writing workshop (see Appendix B). During the prewriting conference, they were asked a general question about how they were doing that day. Once students were finished writing the essay, a post-writing conference was held in which the students conferenced with the instructor, they were given general feedback on the quality of the essay. Teacher conferences lasted three to four minutes each.

## **Posttest**

The final module consisted of two 90-minute class sessions for the Treatment 1 and Treatment 2 Groups. During the fourth module, each student completed the self-efficacy scale again. The instructor presented an essay topic and asked the students to write about it without outside assistance.

The final module consisted of one 90-minute class session for the Comparator Group. During the fourth module, students did not complete the self-efficacy scale due to

time constraints. The instructor presented an essay topic and asked the students to write about it without outside assistance.

### **Measures**

The multiple measures in this study served three purposes: to examine (a) the quality of student writing; (b) the quantity of student writing; and (c) self-reported student attitudes regarding their efficacy in writing. A portfolio of evidence of student work was also collected. Pre and post writing samples were collected at the beginning and the end of the study.

Students typed all writing samples and were allowed to use spellchecking software to correct their work. While spellchecking may contribute to an inflated view of a student's skill level, it is important to note that transcription skills are not a focus of this study. Students used the spellchecking tool at their discretion and without teacher assistance or prompting. The teacher also kept anecdotal notes regarding student facility with typing, in the event that students were not proficient enough with typing to keep up with the pace of the class. Only one student in the Treatment 2 Group was completely unable to type, and only two students in the Comparator Group were unable to type. These samples were written by hand, and then typed up for the raters to examine. Raters were presented with typed samples without any identifying information and without information about whether the sample was a pre- or post- measure.

The writing sample used prompts from previous Oregon Department of Education writing assessments in the area of persuasive writing. Students could choose one of three



prompts for both the pre-assessment and post-assessment. Prompts were chosen by the researcher and structured to be similar to one another across pre- and post-administrations (see Appendix D). The samples were rated in three ways: (a) quantity (number of words); (b) quality, as determined by two raters on a holistic 8-point scale (Graham, Harris & Mason, 2005) and (c) quality, as determined by measuring minimally parsable units (Page-Voth & Graham, 1999).

### **Writing Quality: Holistic Scale**

Two raters were hired to rate the samples on the holistic quality measure. The first rater was a certified teacher and administrator with 20 years of experience. The second rater was an educational aide with 15 years of experience in assessing special needs students and a current teacher licensure candidate in a graduate program. Using a technique set forth in Graham et al. (2005), examiners were asked to read the paper attentively to obtain a general impression of overall writing quality. Compositions were then scored on an 8-point Likert-type scale, with 1 representing the lowest quality of writing and 8 representing the highest quality. Raters were told that ideation, organization, grammar, sentence structure, and aptness of word choice should all be taken into account in forming a judgment about overall quality, and that no one factor should receive undue weight. The researcher collected a set of compositions from a sixth grade class at the school in October 2012 that did not participate in the study. The study's author reviewed these sample papers and determined a low, middle, and high quality set

of sample papers. Raters were provided with a representative paper for a low, middle, and high quality score emulating a technique from Graham et al, 2005.

Using the 1-8 point scale, where 1 represented the lowest score and 8 represented the highest, raters used the set of anchor papers to guide their ratings of a set of example papers. Raters were permitted to rate actual work when their ratings reached 90% agreement with the example papers.

Raters' work was examined in batches of 10 papers to ensure concordance with the scale. Ratings were considered accurate when the two raters came within one point of each other on the scale for a given sample. When ratings fell outside of the one point agreement on the scale, raters were required to re-examine the sample with the anchor papers. Inter-rater reliability on the writing samples was 95%.

### **Writing Quantity: Word Count**

Writing quantity was scored in terms of word count. Number of words written was measured for both the pre- and post- writing sample using the function in the word-processing software.

### **Writing Quantity: Parsable Units**

Writing quantity was also scored in terms of parsable units, a term set forth in Page-Voth and Graham (1999). Parsable units are defined as parts of an essay that can be classified as a premise, reason supporting the premise, elaboration of a supporting reason,

refutation of a counterargument, elaboration of a refutation, conclusion, or non-functional. Functional elements were those that directly supported the writer's argument, whereas nonfunctional text included information that was unrelated to the writer's premise or repeated without any rhetorical purpose.

Functional essay elements were defined with guidance from Page-Voth and Graham, 1999. A premise was a statement specifying a position on the essay topic ("The cafeteria should have organic food"). Supporting reasons were statements that supported the writer's premise ("Because kids will eat more food if the food is more natural."). An elaboration of a supporting reason provides additional details or an example ("For example, there could be a taco bar with lots of fresh vegetables."). Refutation of a counterargument involved an explanation for why a counterpremise was not justifiable ("Despite what the school district thinks, organic food does not always cost more"). An elaboration of a refutation provided additional detail or an example ("Organic food has fewer pesticides."). A conclusion was defined as a closing statement ("That is why I believe the cafeteria should focus on getting higher quality food.")

### **Self-Efficacy Survey Measure and Scoring Procedures**

The Writer Self-Perception Scale, or WSPS (Bottomley, Henk & Melnick, 1997) measured students' self-efficacy in writing. The WSPS is grounded in Bandura's (1977, 1982) theory of perceived self-efficacy, hypothesizing that a *student's self-perception* of writing ability affects writing growth (Bottomley, Henk & Melnick, 1997). The WSPS

was distributed to students electronically with an online survey tool, and their responses were recorded and scored by the study's author.

The WSPS was constructed following the affective instrument developmental guidelines recommended by Gable and Wolf (1993), (Bottomley, Henk & Melnick, 1997). According to Bottomley et al. (1997), the WSPS demonstrates suitable psychometric properties that justify its use in classroom and research contexts. The WSPS measures self-efficacy on five subscales: General Progress, Specific Progress, Observational Comparison, Social Feedback and Physiological States. A pilot study of the instrument was conducted with 304 students in grades 4, 5, and 6 in 14 classrooms in Pennsylvania in 1995 (Henk, Bottomley & Melnick, 1996). Scale reliability has been measured on these subscales, with all coefficients exceeding .80 (Henk, Bottomley & Melnick, 1996). The 5 scales exhibited correlations that “ranged from .51 to .76, demonstrating both significant relationships and desirable scale distinctiveness” (Bottomley et al., 1997, p. 296). In terms of validity, a pilot study compared student results on the WSPS to a holistic writing measure of a writing sample. This study found a modest interrelationship between a student's score on the WSPS and various indicators of writing (Henk et al., 1996).

## Analyses

First, student demographic information was collected from school records, including free and reduced lunch counts of the total population, and ELL status, Special Education status, and gender of specific students.

Bivariate analyses were conducted, with scatter plots for bivariate relations to determine a linear relationship. Once a linear relationship was determined, bivariate correlations on the pre- and post- measures were conducted.

Next, I checked the distributions of the dependent measures to determine that assumptions of normality and linearity were tenable. Descriptive statistics of pre and post measures are reported, including effect size as calculated with Cohen's *d*.

A repeated measures ANOVA was used to examine mean differences on dependent variables of writing samples: quality (holistic score), writing quantity (word counts), and writing quantity (parsable units).

For the WSPS, students' scores on the survey were calculated for each of the five subscales: General Progress, Specific Progress, Observational Comparison, Social Feedback and Physiological States. The scores were then categorized as low, average or high according to norming data provided by the WSPS. I used a chi-square analysis to determine whether there was a difference in the proportions in each of those categories among the five subscales.

## CHAPTER III

### RESULTS

The purpose of this study was to explore the impact of writing workshop with a goal setting intervention on writing quality, quantity and self-efficacy. Students in Treatment 1 used the writing workshop process and received a teacher-supported goal setting intervention in the self-edit step of the writing process consistent with Self-Regulated Strategy Development approach. Students in Treatment 2 received only writing workshop instruction and a generic checklist in the self-edit step. Students in the Comparator group received business-as-usual writing instruction in their language arts/social studies block. Writing measures document quality of writing through a holistic scale, quantity of writing through word counts, and the quantity of writing through parsable units. The Writer Self-Perception Scale, or WSPS (1997), measured students' self-efficacy in writing for the Treatment 1 and Treatment 2 Groups.

The three specific research questions are used to structure the results. First, bivariate correlations between writing measures for the entire population of the study are presented. Measures are analyzed separately: holistic quality, quantity (word counts), quantity (parsable units), and Writer Self-Perception Scale. Descriptive statistics are displayed for each measure, and analyze each measure's pre-test with a One-Way ANOVA. Finally, a repeated measures ANOVA is used to compare the pre- and post-test administrations across groups, followed by a pairwise comparison with Bonferroni correction.

For the WSPS, students' scores on the survey were calculated for each of the five subscales: General Progress, Specific Progress, Observational Comparison, Social Feedback and Physiological States. The scores were then categorized as low, average or high according to norming data provided by the WSPS. I used a chi-square analysis to check for a difference in the proportions in each of those categories among the five subscales.

Measures in this study were designed to provide data to address the following research topics:

- 1) Relationship between performance writing measures (writing quality holistic score, writing word count score, and writing parsable unit score) and the other measures.
- 2) Relationship between treatment conditions and (a) writing quality as measured on the writing holistic score, (b) writing quantity as measured on the writing word count score, and (c) writing quantity as measured on the writing parsable units score.
- 3) Relationship between treatment conditions and writing self-efficacy as measured by the five subdomains of the Writer Self-Perception Scale (WSPS).

**Topic One: Associations Among the Three Variables of Holistic Score, Word Count Score, and Parsable Units Score**

Descriptive statistics of assessment results for all measures are shown in Table 3, including mean, standard deviation, minimum, and maximum.

Table 3  
*Descriptive Statistics of Assessment Results for Full Sample (n = 91)*

Group	<i>M</i>	<i>SD</i>	Min	Max
Pre-Holistic Score	3.32	1.06	1	6.0
Post-Holistic Score	4.11	1.26	2	6.5
Pre-Word Count	153.57	88.90	0	407.0
Post-Word Count	219.43	113.21	35	733.0
Pre-Parsable Units	15.55	9.87	0	61.0
Post-Parsable Units	24.31	12.14	6	76.0

To investigate if there was a statistically significant association between writing measures, bivariate correlations were computed for the pre-test and post-test holistic scores, word count scores, and parsable units scores.

All six of the measures were significantly correlated (see Table 4). Students who had relatively high scores on one measure were very likely to have high scores on another measure. On the pre-test measures, holistic score and word count were strongly correlated,  $r(89) = .83, p < .01$ . On the pre-test measures, holistic score and parsable units were also strongly correlated,  $r(89) = .79, p < .01$ . On the pre-test measures, word count and parsable units were strongly correlated,  $r(89) = .88, p < .01$ .



On the post-test measures, word count and parsable units were strongly correlated,  $r(89) = .90, p < .01$ . Post-word count and post holistic were strongly correlated,  $r(89) = .81, p < .01$ .

Table 4

*Bivariate Correlations Among Holistic Score, Word Count Score, & Parsable Units Post-Test Score*

Subscale	Pre-Holistic	Post-Holistic	Pre-Word Count	Post-Word Count	Pre-Parsable Units
Pre-Holistic					
Post-Holistic	.67				
Pre-Word Count	.83	.72			
Post-Word Count	.59	.81	.74		
Pre-Parsable Units	.79	.69	.88	.68	
Post-Parsable Units	.57	.79	.68	.90	.66

**Topic Two: Differences in Holistic Score, Word Count Score, and Parsable Units Score by Group**

The next research question concerned whether there was a difference between holistic score, word count score, and parsable units score by group (Treatment 1, Treatment 2, and Comparator).

## Holistic Score

Descriptive statistics for holistic score with means and standard deviations by group are presented in Table 5.

Table 5  
*Descriptive Statistics for Holistic Scores by Treatment Group*

Group	<i>n</i>	Holistic Score		<i>ES</i>
		Pre ( <i>SD</i> )	Post ( <i>SD</i> )	
Treatment 1	33	3.85 (1.13)	4.85 (1.21)	.85
Treatment 2	30	2.92 (0.97)	4.00 (1.23)	.98
Comparator	28	3.16 (0.84)	3.35 (0.84)	.21
Total	91			

*Note.* Effect size was calculated with Cohen's *d*.

A one-way ANOVA was conducted on the pre-test scores to determine whether observed differences among groups were statistically significant. As shown in Table 6, results showed a significant pre-test difference between Treatment 1 and Treatment 2, and a difference between Treatment 1 and Comparator,  $F(2, 91) = 7.58, p < .001$ . There is no statistically significant difference between Treatment 2 and Comparator Groups.

Table 6

*One-way ANOVA of Pre-Test Differences Among Groups, Holistic Measure*

Group		<i>Mean Difference</i>	<i>SE</i>	<i>p</i>
Treatment 1	Treatment 2	0.93	0.25	0.001
Treatment 1	Comparator	0.69	0.25	0.022
Treatment 2	Comparator	-0.24	0.26	1.000

*Note.* The omnibus F-test was significant,  $F(2, 90) = 7.58, p < .001$ .

As a result of some pre-existing differences in pre scores, a repeated measures ANOVA was conducted on the pre and post scores on the holistic quality measure. Table 7 shows that a significant interaction was observed between the effects of group membership and time (i.e., pretest vs. posttest). As a result, tests of simple main effects were conducted and are reported in Tables 8 and 9 with Bonferroni correction. In Table 8, we see at time 1 (i.e., pretest) and time 2 (i.e., posttest) that Treatment 1 differed significantly from both Treatment 2 and Comparator. There is no statistically significant difference between Treatment 2 and Comparator Groups at either time point. In Table 9, we see that both Treatment Groups demonstrated significant improvements between pretest and posttest, but that the Comparator Group did not demonstrate a significant change.

Table 7

*Between-Within Analysis of Variance Results on Holistic Measure*

Variable	<i>MS</i>	<i>df</i>	<i>F</i>	<i>p</i>
Between subjects				
Intercept	2465.02	1	1337.98	.0001
Group	21.04	2	11.42	.0001
Error 1	1.84	88		
Within subjects				
Time	26.16	1	65.10	.0001
Time x Group	3.47	2	8.64	.0001
Error 2	0.40	88		

Table 8

*Effect of Group by Time with Bonferroni Correction, Holistic Score*

Time	Group		Mean Difference	Standard Error	<i>p</i>	95% CI	
						<i>LB</i>	<i>UB</i>
1	Treatment 1	Treatment 2	0.93	0.25	.000	0.43	1.43
	Treatment 1	Comparator	0.69	0.25	.009	0.18	1.20
	Treatment 2	Comparator	0.24	0.26	.354	-0.28	0.76
2	Treatment 1	Treatment 2	0.85	0.28	.003	0.29	1.40
	Treatment 1	Comparator	1.49	0.28	.000	0.92	2.06
	Treatment 2	Comparator	-.643	0.29	.031	-1.22	-0.06

*Note.* The *p* value has been adjusted to 0.008 using a Bonferroni correction.

There is a significant difference between Treatment 1 and Treatment 2 Group on time 1.

There is no significant difference between Treatment 1 and Comparator on time 1.

There is no significant difference between Comparator and Treatment 2 on time 1.

There is no significant difference between Treatment 1 and Treatment 2 on time 2.

There is a significant difference between Treatment 1 and Comparator on time 2.

There is no significant difference between Comparator and Treatment 2 on time 2.

CI = confidence interval; *UB* = upper bound, *LB* = lower bound.

Table 9  
*Effect of Time by Group, Holistic Score*

Group	Time		Mean Difference	Standard Error	<i>p</i>	95% CI	
						<i>LB</i>	<i>UB</i>
Treatment 1	1	2	-1.0	0.16	.000	-1.31	-0.69
	2	1	1.0	0.16	.000	0.69	1.21
Treatment 2	1	2	-1.08	0.16	.000	-1.41	-0.76
	2	1	1.08	0.16	.000	0.76	1.41
Comparator	1	2	-0.20	0.17	.249	-0.533	0.14
	2	1	0.20	0.17	.249	-0.14	0.533

*Note.* For the Treatment 1 Group, there is a significant difference between time 1 and time 2. For the Treatment 2 Group, there is a significant difference between time 1 and time 2. For the Comparator Group, there is no significant difference between time 1 and time 2. CI = confidence interval; *UB* = upper bound, *LB* = lower bound.

To investigate the study hypotheses (i.e., that Treatment 1 would outperform Treatment 2 and that both Treatments would outperform Comparator), two *a priori* contrasts were conducted. Results demonstrated that the effect of time for Treatment 1 and Treatment 2 did not differ significantly,  $F(1,88) = 0.136, p = .713$ . However, the effect of time for both Treatments was, as predicted, significantly greater than for Comparator 1,  $F(1,88) = 17.223, p < .001$ .

## Word Count Score

The next research question asked was whether there was a difference in word count scores between time 1 and 2 by group (Treatment 1, Treatment 2, and Comparator). Descriptive statistics with means and standard deviations by group are presented in Table 10.

Table 10

*Descriptive Statistics for Word Count Scores by Treatment Group*

Group	<i>n</i>	Word Count		<i>ES</i>
		Pre ( <i>SD</i> )	Post ( <i>SD</i> )	
Treatment 1	33	216.94 (93.19)	293.45 (117.63)	0.72
Treatment 2	30	136.86 (75.44)	217.23 (84.57)	1.0
Comparator	28	96.78 (37.10)	134.53 (66.82)	0.71
Total	91	153.57 (88.89)	219.42 (113.21)	0.65

*Note.* Distributions were roughly unimodal and symmetrical. There are two outliers in the post-assessment, one in the Treatment 1 Group and one in the Comparator Group. There is a slight positive skew in the Treatment 1 and Comparator Group due to these outliers. Effect size was calculated using Cohen's *d*.

A one-way ANOVA was conducted on the pre-test scores to determine differences among groups, as shown in Table 10. The results showed a pre-test difference between Treatment 1 and the other two groups,  $F(2, 90) = 26.24, p < .001$ . There was no statistically significant difference between the Treatment 2 and Comparator Groups on the word count measure.

Table 11

*One-way ANOVA of Pre-Test Differences Among Groups, Word Count Measure*

Group		<i>Mean Difference</i>	<i>SE</i>	<i>p</i>
Treatment 1	Treatment 2	80	18.53	.001
Treatment 1	Comparator	120	18.97	.001
Treatment 2	Comparator	40	19.40	.126

*Note.* The omnibus F-test was significant,  $F(2, 90) = 26.24, p < .001$ .

A repeated measures ANOVA was conducted on the pre and post scores on the parsable units measure reflecting an interaction between the groups. There was no significant interaction between time and groups for this measure. As a result, pairwise comparisons for the main effects and *a priori* contrasts based on the study hypotheses were conducted.



Table 12

*Between-Within Analysis of Variance Results on Word Count Measure*

Variable	<i>MS</i>	<i>df</i>	<i>F</i>	<i>p</i>
Between subjects				
Intercept	6043298.80	1	530.62	.0001
Group	298924.83	2	26.24	.0001
Error 1	11389.06	88		
Within subjects				
Time	190645.68	1	67.47	.0001
Time x Group	8046.17	2	2.85	.063
Error 2	2825.70	88		

Table 13 shows pairwise comparisons between the groups with Bonferroni correction. Results indicate a statistically significant difference between Treatment 1 and Treatment 2, and between Treatment 1 and Comparator. There was no statistically significant difference between Treatment 2 and Comparator. Full statistics are presented in Table 13.

Table 13

*Pairwise Comparisons for Main Effect of Group with Bonferroni Correction, Word Count Measure*

Group		Mean Difference	<i>p</i>	95% CI	
				<i>LB</i>	<i>UB</i>
Treatment 1	Treatment 2	78.15	.0001	31.69	124.61
Treatment 1	Comparator	139.53	.0001	92.21	186.85
Treatment 2	Comparator	61.38	.0080	12.99	109.78

*Note.* CI = confidence interval; *UB* = upper bound, *LB* = lower bound.

Table 14

*Pairwise Comparison for Main Effect of Time with Bonferroni Correction, Word Count Measure*

Group		Mean Difference	<i>p</i>	95% CI	
				<i>LB</i>	<i>UB</i>
Time 2	Time 1	64.88	.0001	49.18	80.57

*Note.* CI = confidence interval; *UB* = upper bound, *LB* = lower bound.

The planned comparisons results for word count scores were similar to those for holistic scores. Treatment 1 and Treatment 2 benefitted equally from the writing workshop instructional condition (i.e., no significant difference between treatments),  $F(1,88) = 0.04, p = .84$ . The two treatment groups benefitted from the writing workshop

instructional condition as compared to Comparator, writing 41 more words than students in the Comparator condition,  $F(1,88) = 5.675, p = .019$ .

### **Parsable Units Score**

The fourth question focused on differences in parsable units score by group (Treatment 1, Treatment 2, and Comparator). Descriptive statistics with means and standard deviations by group are presented in Table 15.

Table 15

*Descriptive Statistics for Parsable Unit Scores by Treatment Group*

Group	<i>n</i>	Parsable Units		<i>ES</i>
		Pre ( <i>SD</i> )	Post ( <i>SD</i> )	
Treatment 1	33	21.24 (11.54)	30.76 (12.88)	0.78
Treatment 2	30	14.80 (8.24)	24.67 (10.64)	1.04
Comparator	28	9.64 (4.17)	16.32 (7.45)	1.13
Total	91	15.54 (9.86)	24.31 (12.13)	0.79

*Note.* Distributions were roughly unimodal and symmetrical. There is one outlier in the Treatment 1 in the post-test but it is not a significant outlier.

A one-way ANOVA was conducted on the pre-test scores to determine differences among groups. See Table 16. The results showed a pre-test difference between Treatment 1 and Treatment 2, and a difference between Treatment 1 and Comparator,  $F(2, 91) = 13.65, p < .001$ . There was no statistically significant difference between Treatment 2 and Comparator Groups.

Table 16

*One-way ANOVA of Pre-Test Differences Among Groups, Parsable Units Measure*

Group		<i>Mean Difference</i>	<i>SE</i>	<i>p</i>
Treatment 1	Treatment 2	6.44	2.20	.013
Treatment 1	Comparator	11.60	2.24	.001
Treatment 2	Comparator	5.15	2.29	.081

*Note.* The omnibus F-test was significant,  $F(2, 90) = 13.65, p < .001$ .

A repeated measures ANOVA was conducted on the pre and post scores on the parsable units measure reflecting an interaction between the groups. There was no significant interaction between time and groups on the pre- and post- measures (see Table 17). As a result, pairwise comparisons for main effects of Group and Time with Bonferroni correction were conducted. A significant difference in group means was found between all group pairs: Treatment 1 and Treatment 2, Treatment 1 and Comparator, and Treatment 2 and Comparator(see Table 18). In addition, Time 2 scores were higher than Time 1 scores (see Table 19).

Table 17

*Between-Within Analysis of Variance Results on Parsable Units Measure*

Variable	<i>MS</i>	<i>df</i>	<i>F</i>	<i>p</i>
Between subjects				
Intercept	69400.80	1	471.38	.0001
Group	2568.68	2	17.45	.0001
Error 1	147.23	88		
Within subjects				
Time	3417.91	1	78.33	.0001
Time x Group	44.22	2	1.01	.367
Error 2	43.64	88		

Table 18

*Pairwise Comparison of Main Effect of Group with Bonferroni Correction, Parsable Units Measure*

Group		<i>Mean Difference</i>	<i>p</i>	95% CI	
				<i>LB</i>	<i>UB</i>
Treatment 1	Treatment 2	6.27	.014	.98	11.55
Treatment 1	Comparator	13.02	.001	7.64	18.39
Treatment 2	Comparator	6.75	.011	1.24	12.25

*Note.* CI = confidence interval; *UB* = upper bound, *LB* = lower bound.

Table 19

*Pairwise Comparison of Main Effect of Time with Bonferroni Correction, Parsable Units Measure*

Group		Mean Difference	p	95% CI	
				LB	UB
Time 2	Time 1	8.69	< .001	6.74	10.64

Planned comparisons revealed no difference in the effect of time between Treatment 1 and Treatment 2,  $F(1,88) = 0.02, p = .88$ , and also no difference in the effect of time between the two Treatment Groups and the Comparator Group on the parsable units measure,  $F(1,88) = 2.01, p = .16$ .

### **Topic Three: Self-Efficacy Measure**

I examined the proportion of students in for each of the five subscales of the WSPS using SPSS 21.0. The subscales of the WSPS are General Progress, Specific Progress, Observational Comparison, Social Feedback and Physiological States. Student scores on each subscale were grouped according to the instrument by low, average, and high scores. Each of the five subscales was examined separately. I then used a contingency table and chi square analysis to determine changes in students' scores on the subscales.

Finally, a chi-square test was used to ascertain the difference in the proportion of students in the low, average, or high group under each subscale on the pre and post

administrations of survey. A significant difference was found in the proportion of students in the low, average and high groups in the General Progress subscale of the WSPS,  $\chi^2(N=122, 6) = 12.74, p < .05$ .

Table 20

*Chi-Square Results from the General Progress Subscale of the WSPS Across Treatment Groups*

Group	<i>General Progress</i>		
	<i>Low</i>	<i>Average</i>	<i>High</i>
Treatment 1 Pre Measure	19	7	5
Treatment 1 Post Measure	12	10	9
Treatment 2 Pre Measure	13	8	9
Treatment 2 Post Measure	6	9	15

No significant difference was found in the proportion of students in the low, average, and high groups between pre and post administrations of the WSPS survey in the other subscales (Specific Progress, Observational Comparison, Social Feedback, and Physiological States).

## CHAPTER IV

### DISCUSSION

The purpose of this study was to examine the effect of a goal setting intervention in writing workshop with a goal setting intervention on writing quality, quantity and self-efficacy. Specifically, an SRSD goal setting intervention was examined using a quasi-experimental design to compare pre and post administrations of a persuasive writing sample across three groups: Treatment 1, Treatment 2, and Comparator. Additionally, the Treatment and Treatment 2 Groups underwent pre- and post-administrations of the Writer Self-Perception Survey.

Across all groups, students who had relatively high scores on one measure were very likely to have high scores on another measure. Students in the treatment condition who received both writing workshop instruction and a goal setting intervention had higher post-test results across all three measures than those in the Comparator Groups. However, as shown in the one-way ANOVAs on the pre-test measures, the Treatment 1 Group was higher performing at the beginning of the study. To compensate for this difference at pre-test, mean differences were calculated for each measure, and showed a higher level of growth for students in the Treatment 1 Group across all three measures. The Treatment 1 Group did not show greater self-efficacy as measured by the WSPS.

In discussing these findings, I first present the limitations of the study. I then present a summary of the findings and interpret them within the theoretical and empirical framework of the research literature. Recommendations for future research and implications for practice conclude this chapter.



## **Limitations**

Limitations will be discussed in terms of internal validity, external validity, and construct validity.

### **Internal Validity**

Threats to internal validity threaten the ability to draw correct cause-and-effect inferences due to experimental procedures or the experiences of participants (Creswell, 2005). Internal validity will be discussed in terms of instrumentation, interaction with selection and treatment, diffusion of treatment, and sampling bias in the form of attrition.

Threats to instrumentation were addressed through rating procedures. Raters were given samples without being told whether it was a pre- and post. They were also told to do the ratings in groups of ten and take frequent breaks to avoid fatigue when rating samples. For the word count measure, word counts were collected using information from the word processor for accuracy. Secondly, the parsable units were counted twice by one individual to ensure accuracy.

One significant threat to instrumentation was the holistic measure scale. Though a 1-8 scale was proposed in the sample papers, actual rated samples had a range of a minimum of 1 and a maximum of 6.5. This resulted in a scale that is similar to the 6-Traits writing scale. A larger batch of sample papers could have been used to make more specific distinctions between levels on the scale.

I attempted to address interaction with selection and treatment through the design of this study, as the treatment group was chosen at random with a coin toss before pre-assessment. However, true random assignment of individuals, the use of matching, or the use of blocking would have been able to Comparator for this threat to internal validity more significantly. Additionally, a more precise analysis could have been performed by administering the pre-assessment first and distributing students between the groups based on their performance on the pre-assessment. A sophisticated research design of this nature was not possible at this site due to scheduling constraints.

The Treatment 1 Group was higher performing on the pre-assessment across the measures of writing holistic quality, writing quantity, and parsable units scores compared to the Treatment 2 and Comparator Groups. The higher-performing state of this group at the beginning of the instructional treatment made the mean difference between groups more difficult to interpret in terms of the effect of the goal setting intervention. The higher performance of the Treatment 1 Group on the post-assessment may be due to pre-existing abilities and not as a result of treatment. By the time the Treatment 2 group took the post-assessment, their achievement was similar to where the Treatment 1 group was at the beginning.

Diffusion of treatment may have occurred between the Treatment 1 and Treatment 2 groups. Given that the researcher was the teacher for both groups, strategies employed with the Treatment 1 Group may also have been employed with the Treatment 2 group, even though different editing checklists were being used. In fact, notes from the instructional days indicate that certain verbal prompts during the teacher conference step were used with the Treatment 2 Group because they were effective at getting students to

focus on improving their work. This threat to validity could be addressed in a future study with the use of a scripted curriculum with two separate teachers.

Finally, sampling bias is a threat to internal validity in this study. There was attrition of 2 participants from the Treatment 1 Group, five participants from the Treatment 2 Group, and five participants from the Comparator Group. Given the attrition from the original sample, the Treatment 2 Group had a larger class size but fewer participants in the study than the Treatment 1 Group. Conditions were not identical in terms of class size during instruction due to this attrition.

### **External Validity**

Threats to external validity are “problems that threaten our ability to draw correct inferences from the sample data to other persons, settings, and past and future situations” (Creswell, 2005, p. 293). The following four threats to external validity may affect generalizability of this study: interaction with selection and treatment, interaction of setting and treatment, interaction of history and treatment, and sampling bias.

Interaction of selection and treatment was addressed through the sampling design, which was based on the existing schedule of the school. The scheduling of students into groups makes it difficult to generalize beyond this particular sample. Additionally, student schedules at the school are often dictated by math achievement or placement in supplemental reading classes. This may have resulted in sorting of groups out into low, medium, and high achieving due to their overall class schedule.

Interaction of setting and treatment was a particular threat to external validity in this study. This study took place at a high poverty school, with 70% of students eligible for free and reduced lunch. The results may not generalize to another setting. However, as indicated by Graham and Perin (2007), there is a noticeable lack of writing research in high poverty and urban schools at the middle school level, so generalizing the results of this study to a similar population may be reasonable.

The interaction of history and treatment may have proven problematic. The timing of the modules for the Treatment 1 and Treatment 2 groups was near the beginning of the school year, without any breaks such as Thanksgiving, winter holidays, or furlough days. It may be difficult to generalize the results of this study to a different time of year, which may have more interruptions to instruction due to school breaks.

### **Construct Validity**

Construct validity “is a determination of the significance, meaning, purpose, and use of scores from an instrument” (Creswell, 2005, p. 590). In the context of this study, construct validity addresses the three measures’ ability to accurately differentiate between poor writers and skilled writers. The construct of middle school writing quality is complex. As such, three sub-measures were used: quality as measured on a holistic scale, quantity as measured by word count, and quantity as measured by parsable units. The use of three measures for each writing sample allowed for a multi-dimensional examination of students’ writing abilities and individual change over time.

Construct validity for the writing quality measure was established using a research design set forth by Graham et al (2005) in which anchor papers for the rating scales were derived from a group of students at the same school site who were not included in the study. The use of these samples helped establish construct validity of the holistic scale for this specific population, as students in the study were compared to students at the same school site under similar instructional conditions.

On the low end of the scale, the measures of word count and parsable units were able to detect a low level of skill, as the *quantity* of the writing was being measured. As shown in the bivariate correlations, the quantity of writing was positively correlated with quality of writing on the holistic scale. In general, bivariate correlations showed that a higher word count score or parsable units score correlated with a higher holistic quality score.

Similarly, on the higher ends of the scale, the holistic measure rewarded more sophisticated writing with a higher score. However, unlike the 6-traits scores used by the state of Oregon, the holistic scale required raters to read the paper attentively to obtain a *general* impression of overall writing quality. The elements of a given piece were considered holistically, and thus higher credit could not be given in one area if other elements were weak. For example, students who may have written with more word choice, voice, or ideas may not have been rewarded with a high holistic scale if the piece had poor organization or ideas.

For the self-efficacy measure, the external validity of the Writer Self-Perception Scale has been established through validation, and it has been shown to correlate significantly with student's writing samples in Henk et al., (1996).

## **Interpretations within the Framework of the Research Literature**

Writing Workshop is widely implemented in today's schools, though the approaches within the workshop model are sometimes vague and loosely conceptualized by teachers. In the 1990's, researchers began to assert that the writing process was best understood as a complex phenomenon encompassing procedures for generating text and for engaging in bigger-picture concerns (Pritchard & Honeycutt, 2006). Multiple factors affect the writing process, and current and future research must contend with the challenge of isolating the various aspects of the process approach. Empirical research of specific elements of the writing process emerged in the 1990s, leading to interventions focused on writing skills and writing products.

Research approaches dedicated to isolating specific elements of the writing process have given rise to an area of research known as Self-Regulated Strategy Development, pioneered by Harris and Graham (1996, 1999) at Vanderbilt University. Self-Regulated Strategy Development (SRSD) is a cohesive program of interventions designed to enhance strategic behaviors, self-regulation skills, content knowledge and motivational dispositions within the writing process (Harris & Graham, 1996, 1999).

As explored in my literature review, SRSD studies focused on two broad areas, skill-based interventions and product-based interventions. *Skill-based* interventions include spelling, transcription and sentence construction, and organization, audience, genre, use of conventions, and cohesion (Pritchard & Honeycutt 2006). Skill-based interventions are not the focus of this study.

This study has isolated a *product-based intervention* in the form of teacher-supported goal setting in the writing workshop. This study adds to the body of research that isolates specific product-based interventions nested within the writing process. This product-based intervention of a goal-setting checklist focused students on both planning and product outcomes of their writing. Product-based interventions use explicit instructions about the purpose and characteristics of a writing product. Students are directed to reflect on their work in an ongoing, structured manner (Graham & Perin, 2007). This includes interventions that focus on prewriting, context, problem-solving skills, and attitude. Furthermore, the use of a sample from lower-achieving students at a high-poverty school addresses a gap in the current literature.

### **The Overall Impact of Goal Setting in the Writing Process**

Instruction that focuses on deliberate conceptual planning—e.g., quality of ideas, audience, content or organization—can help novice writers improve their writing (Page-Voth & Graham, 1999). Prior research has established that setting specific product goals allows writers to know what they are striving to accomplish and directs attention to important aspects of a piece (Graham et al., 1992; Scardamalia & Bereiter, 1986). In this study, a goal setting intervention yielded a large effect size for the holistic score, moderate effect size for the word count score, and a moderate effect size for the parsable units score. This study's results are similar to (but lower than) the effect sizes reported by a meta-analysis of SRSD studies by Graham and Perin (2007). In studies where

adolescents set clear and specific goals for the existence of various attributes of a writing product, the strategies yielded an effect size of .80.

Goal setting was isolated as a variable through the design of this study. Treatment 1 received writing workshop plus a goal-setting intervention. Treatment 2 received just writing workshop, and the Comparator Group received business-as-usual writing instruction in their language arts and social studies block class. Interestingly, effect sizes were also very strong for the Treatment 2 Group. This group used a checklist to review their writing, but did not have specific *goals* as part of the checklist process. This group experienced a large effect size for the holistic scale, large effect size for the word count scale, and large effect size for the parsable units score. As discussed in the previous section, there may have been some diffusion of treatment due to the researcher serving as the teacher in both Treatment conditions. Furthermore, the lower-performing state of the Treatment 2 Group may have caused them to catch up more dramatically than their higher-performing peers. Finally, the time spent on the goal-setting instruction in Modules One and Two for Treatment Group 1 was time spent away from practicing persuasive essay writing. This may have meant that the Treatment 2 Group had more time in class to work on their writing.

This finding is similar to Graham and Perin (2007), who found that explicitly teaching planning, revising, and editing strategies was highly effective for Grades 4-10 with an effect size of .82 overall, and an effect size of 1.02 for struggling writers in particular.



## **Goal Setting Increases Quality of a Writing Piece Overall**

The findings of this study confirm prior SRSD findings that goal setting can increase the quality of a writing piece overall. In this study, students in the treatment condition were asked to set goals. Two out of the four goals listed on the Self-Editing checklist concerned examining the quality of the writing through improving parts of the piece (“I want to add one brand new supporting idea and take out one of the old supporting ideas; I want to examine one of my existing supporting ideas and make it a lot better with better reasoning.”) Instruction that focuses on deliberate conceptual planning, such as examining quality of content, can help novice writers improve their writing (Page-Voth & Graham, 1999).

On the holistic quality measure, the mean difference between the Treatment 1 Group and the Treatment 2 Group was statistically significant. The mean difference between the Treatment 1 Group and the Comparator Group was statistically significant. There was no difference on this measure between the Treatment 2 and Comparator Groups, neither of which received the goal intervention. These findings suggest that for the Treatment 1 Group, the use of goals focused on the quality of specific parts of the piece may have made a difference on their ability to produce a higher quality writing sample overall. The use of goals focused on overall quality (such as adding a new supporting idea or using better reasoning) may have highlighted areas of improvement for students.

This finding supports previous research by Ferretti, MacArthur & Dowdy (2000). Students in the general goal condition were asked to take a position and write a letter to

persuade an audience. Students in the elaborated goal condition were given the same general goal plus explicit sub goals that directed them to examine the quality of their ideas, including supporting information and possible counter-arguments. The use of a specific, product-oriented goal in a persuasive writing assignment for learning-disabled students allowed students to write more persuasively as compared to the Comparator group. In this study, students in the goal setting treatment condition received higher scores on the holistic writing measure on the post-assessment and showed more growth than the other treatment conditions.

### **Goal Setting Increases Quantity of Writing**

Prior research has shown that struggling writers write less than their more-skilled peers. Graham and Harris (2005) refer to this technique as “retrieve and write” and note that less-skilled writers often rely just on the most immediate ideas they can think of before exhausting their limited supply of information and ceasing to write. Bereiter and Scardamalia (1987) noted that less-skilled writers spent less than one minute in planning before writing, and Cameron and Moshenko (1996) reported that all students spent on average just over two minutes before beginning to write. Graham, Harris, Schunk and Schwartz (1991) found that struggling writers’ pieces are inordinately short and less developed. Less-skilled writers commonly do not use self-regulatory processes, like goal setting, to monitor and increase their output (Graham & Harris, 1997; Scardamalia & Bereiter, 1986).

This study asked students to set goals in terms of the number of ideas they planned to include in the final draft of their persuasive essays. Two out of the four goals listed on the Self-Editing checklist concerned increasing the *quantity* of ideas, which in turn led to more text written (“I want to add one brand new supporting idea and add it to the old supporting ideas,” and “I want to examine one of my existing supporting ideas and make it a lot better with more details”).

On the post-test, students in the Treatment 1 Group wrote an average of 78.15 more words than the Treatment 2 Groups, and 140 more words than the Comparator Group. On the post-test, the Treatment 2 Group showed more mean difference on the parsable units measure than the other groups. The finding across treatment groups suggests that the use of goal setting can impact the *amount* that a student writes by explicitly asking students to write more during a self-edit or teacher conference step. These results show the impact of planning interventions, such as editing checklists, on final products, a finding consistent with prior SRSD studies. Skilled writers focus much of their time on planning, including the purpose of their text and ways to achieve those goals (McCutchen, 2006). Explicitly teaching struggling students the planning strategies of skilled writers, such as the use of a structured editing checklist, may significantly impact the amount that these students write by directing their attention to the quantity of text that they produce.

## **The Effect of Increased Word Count on Overall Quality**

No prior SRSD studies have examined quantity of writing using word count as an indicator of increased writing quality. Expert writers engage in more planning behaviors than novice writers, including setting targets for words written (McCutchen, 2006). For example, Bandura (1986) cited the writing habits of successful novelists. Many novelists set small daily goals and deliver product goals in terms of pages or words written per session. Over time, increased quantity may translate into increased quality.

This study adds to the body of research on the effect of planning interventions to increase quantity and, in turn, increase writing quality. Planning interventions have been used to frontload the writing process and increase the quantity of writing. In a meta-analysis, Graham and Perin found that explicitly teaching planning, revising and editing skills were highly effective for Grades 4-10, with an effect size of .82 overall, and an effect size of 1.02 for struggling writers in particular. De la Paz and Graham (2002) examined the use of a planning intervention on composition length, vocabulary, and quality. Students in the planning condition wrote significantly more than the Comparator Group (an average of 236 words compared to 179 words) and received higher quality scores (an average of 3.63 to 2.86 on a 1 to 8 scale). Similar to De la Paz and Graham (2002), this study found that longer passages (as measured through word count) were strongly correlated with holistic quality. Based on this finding, it is possible to hypothesize that for lower-achieving writers, writing quantity as measured through word count is an important *initial* indicator of overall ability. For example, a sample in the current study with two or fewer paragraphs could receive a 3 at the highest due to the

lack of complexity in organization and ideas. On the high end of the scale, all of the writing samples in the current study that earned a six on the holistic scale had at least 229 words.

In general for this age group, writing quantity appears to be a precursor to writing quality. In this study, across all ability levels, the quantity of writing as measured through word count was positively correlated with the quality of the writing as measured on the holistic scale. Students do need to be able to create longer passages in order to adequately convey more complex concepts, so product goals that focus explicitly on quantity could simultaneously lead to higher quality. For example, a planning intervention could be designed that focuses on simply hitting a word count target goal, and this goal may have an impact on writing quality. Though not a nuanced measure by any means, word count can strongly impact the quality of a writing piece, and this may be particularly true for middle-grade struggling writers whose skills are emerging out of elementary-level writing.

### **The Effect of Increased Quantity of Ideas on Overall Quality**

Graham, MacArthur and Schwartz (1995) examined the use of goals to encourage students to write more, measuring the number of ideas added. Researchers used a goal-setting intervention that asked students in the treatment condition to add three pieces of information, while students in the Comparator information were given a vague goal of “making the paper better,” yielding an effect size of .77. Similarly, this study asked students to set goals regarding the number of ideas they planned to include in their

persuasive essays. Two out of the four goals listed on the Self-Editing checklist concerned increasing the *quantity* of ideas (“I want to add one brand new supporting idea and add it to the old supporting ideas,” “I want to examine one of my existing supporting ideas and make it a lot better with more details”).

Similarly, Page-Voth and Graham (1999) examined seventh and eighth grade students with learning disabilities and asked them to compose three essays, responding to a different goal when writing each paper. The first essay focused on a goal of increasing the number of supporting reasons, the second essay focused on increasing the refutation of counterarguments, and the third focused on increasing both types of elements. Students in the experimental group were given explicit prewriting instructions to set a goal and this goal was referred to again in the post writing conference. Students in the Treatment 2 Group simply discussed how they were feeling that day in the prewriting step and received general feedback in the post writing conference. Their research showed that the establishment of goals specifying what will be included in a paper prior to composition significantly improved the writing performance of students with writing and learning difficulties. This study relates to previous findings regarding the link between number of ideas and holistic quality. Bivariate correlations showed a positive association on the pre-assessment between parsable units and holistic quality, indicating that a higher quantity of ideas could be related to a higher-quality writing piece as measured on a holistic scale. Across groups, there was a statistically significant difference between Treatment 1 and Treatment 2, a difference between Treatment 1 and Comparator, and a difference between Treatment 2 and Comparator Groups. The Treatment 1 Group had more ideas than the Treatment 2 and Comparator Groups.

Ferretti, MacArthur and Dowdy (2000) found that the use of a specific, product-oriented goal in a persuasive writing assignment for learning-disabled students allowed them to write more persuasively as compared to a Comparator group provided with a more general composing goal. Students in the general goal condition were asked to take a position and write a letter to persuade an audience. Students in the elaborated goal condition were given the same general goal plus explicit sub goals that directed them to include (a) a statement of their beliefs, (b) two or three reasons for their belief, (c) examples or supporting information for each reason, (d) two or three reasons why others might disagree, and (e) why those reasons were wrong. Students were given two prompts on two different occasions regarding controversial topics, and the essays were scored on overall persuasiveness and for the existence of elements of argumentative discourse. Sixth-grade students in the elaborated goal condition performed better than sixth-grade students in the general goal condition in terms of overall persuasiveness.

### **Self-Efficacy and Goal Setting**

Zimmerman and Risemberg (1997) explored self-regulation domains of effective writers, hypothesizing that self-regulating strategies are essential to successful writing. Self-influence can enhance an individual's learning experiences. I initially hypothesized that the use of self-regulation strategies such as goal setting would inspire greater motivation to improve and complete compositions. In cyclical fashion, this would improve the learner's self-efficacy in writing as measured through the Writer Self-Perception Survey.

As mentioned in the Results section, only the results on the General Progress Subscale showed a significant difference between groups. The other subscales did not show significant differences between groups, so the discussion here will focus on the General Progress Subscale. The following questions from the 37-item Writer Self Perception Scale comprised the General Progress subscale. Here we see a link between students being asked to reflect on their own performance and the construct of self-efficacy introduced in the literature review.

Writing is easier for me than it used to be.

I am getting better at writing.

I need less help to write well than I used to.

I write better now than I could before.

My writing has improved.

My writing is better than before.

It's easier to write well now than it used to be.

The organization of my writing has really improved.

The questions in this subscale focused on general notions of progress in writing, including self-assessment of improvement and examination of the ease of writing compared to an earlier point in time. As connected to the broader construct of self-efficacy, these survey items represent an opportunity to link an individual's belief about his or her improvement and increased effort.

On the pre-administration of the survey, the groups were similar. The Treatment 1 Group had a total of 19 students in the low group, 7 students in the average group, and 5



students in the high group. The Treatment 2 Group had 13 students in the low group, 8 students in the average group, and 9 students in the high group. On the post-administration of the survey, Treatment 1 Group's scores in the treatment condition had a total of nine students in the high group, eight students in the average group, and 13 students in the low group on the General Progress Subscale. Students in the Treatment 2 Group had a total of 15 students in the high group, nine students in the average group, and six students in the low group on the General Progress Subscale. The differences between the groups here are actually a reflection of the Treatment 2 Group reporting higher self-efficacy on the general progress subscale than the Treatment 1 Group, a finding that does not link goal setting with self-efficacy. Though the Treatment 2 Group was not as high achieving as the Treatment 1 Group on the writing score measures, they did show significant improvement. As such, it appears that self-assessment of their own progress is reflected in the results of the WSPS.

Though the findings of this study did not find a link between the goal setting treatment and self-efficacy, the overall impact of specific writing instruction may have influenced students in both treatment conditions. As explored by Bandura (1986, 1997), the enactive mastery experience is the most influential source of self-efficacy beliefs. Enactive mastery experiences encompass the interpreted result of previous performance (Bandura, 1986). As further explored by Bandura (1997), enactive mastery experiences are the "most influential source of efficacy information because they provide the most authentic evidence of whether one can muster whatever it takes to succeed" (p. 80). Indeed, within this subscale, students are being asked to self-assess their writing ability

by reflecting on evidence of their success. This reflective process may have caused students to link their effort, improvement, and independence with self-efficacy.

The remainder of this discussion section will examine suggestions for future research and implications for practice.

### **Future Research**

As explored in the literature review, writing is a key 21<sup>st</sup> century skill. Today's students will increasingly enter knowledge-based professional fields in which they will be expected to write clearly and communicate cogently. Communication skills require significant time, practice, and a focus on results. With communication proficiency as a long-term goal for all students, clearly our educational system should be keeping track of formative student assessment information at all grade levels. However, at present, there is the 4<sup>th</sup> and 7<sup>th</sup> grade Oregon State Writing Tests have been discontinued, and students are only officially tested at 11<sup>th</sup> grade as a graduation requirement. If writing is to become an instructional priority, more checkpoints may be needed in students' K-12 educational experiences. Dynamic and straightforward writing assessments must become part of the literacy landscape for all students if writing is truly a curricular priority.

As seen in this study, writing quantity is an important component of the overall picture of a student's writing ability. Writing quantity as measured through word count was positively correlated with other writing measures. The highest correlations on both the pre-assessment and post-assessment were between parsable units and word count. The

number of ideas (as measured by parsable units) was strongly correlated with word count, and therefore may have been measuring the same construct.

Given the connection between writing quantity and writing quality, I suggest the construct of writing fluency as measured by a students' ability to generate a certain quantity of text in a set amount of time may be worth exploring, such as research that has been done in the area of Writing CBM's. Prior research in writing by McCutchen (2000, 2006) has noted that fluent text production frees working memory resources, allowing the writer to engage in higher-level processes. Research in elementary and secondary reading has shown a strong link between reading fluency and reading comprehension. I suggest here a cognate for the field of writing research. For middle school writers, fluency in writing (as measured through quantity of words or ideas) may give rise to higher writing quality. It is possible that the ability to generate text fluidly is a precursor to more complex cognitive skills in writing, such as the ability to examine overall content, create complex sentence structures, manipulate word choice, and employ voice.

The current study used word count as a simple, easy measure of writing quantity. This metric could be used in future studies to measure progress across a number of samples at key points in the year. Just as reading fluency research has given rise to benchmarks for words read per minute, word count measures could be used to establish grade level benchmarks for numbers of words written in a set period of time to measure writing fluency. If a large database of writing samples from various grade levels existed, future researchers could determine key benchmarks for writing fluency (as measured through word count). The ability to write a key amount of text in a given period of time

could possibly be predictive of writing quality, so this may be an important area worthy of future research.

However, this suggestion should be interpreted cautiously. Sometimes less-skilled writers produce text more fluently than expert writers (McCutchen, 2006), as higher-level processes related to writing quality require more time, effort, and thought. Word count is a rough measure of ability, but may have a ceiling as students head into the secondary grades and are expected to compose more complex and cohesive pieces. Quantity may not lead to quality past a certain baseline point. As explored by McCutchen, (2006) it is the combination of fluent text production and skilled writing knowledge that gives rise to high-quality writing. Instructional strategies that emphasize text production for struggling writers build the basic skills required for advanced writing instruction.

The rise of computer scoring may bring down costs for writing assessments in general and allow researchers to perform more research on writing with fewer barriers. Indeed, this was the case for the present study, as one of the measures (word count) relied on a simple function of word processing software. This was a free, simple way to measure writing that could be replicated in a formal writing assessment software program. Counting parsable units and rating samples on a holistic score was labor-intensive and may not be feasible to be replaced by a computer-scoring tool.

As noted by Graham and Perin (2007), “the lack of information on effective writing instruction for low-income, urban, low-achieving adolescent writers remains a serious gap in the literature” (p. 25). More studies are needed on writing in general to determine the most effective instructional strategies, but future research must also address the needs of diverse populations specifically.

Suggestions for future studies in this area of writing research include the use of a research design that allows for randomized selection across groups, or administration of a pre-assessment and subsequent assignment of students to groups based on their achievement levels. Discrepancies between the groups at the outset of this study may have impacted the accuracy of the findings, and this threat to validity could be alleviated with a better research design.

Results from the WSPS measure were inconclusive in this study. The WSPS has five subscales, and it was difficult to use all five of the subscales at once. Future researchers focusing on self-efficacy in writing may wish to use only one or two of the subscales of the WSPS to examine the use of a goal setting protocol and impact on self-efficacy in writing, or to design similar measures that focus specifically on a writer's reflection on their goal setting process.

Increasing the number of participants would also have increased the rigor of the study, as sample sizes in this study were small. Comparing writing and reading performance levels may be a fruitful area to explore, as reading ability greatly informs a student's writing ability. Within the measures themselves, the use of multiple methods to assess writing, such as a writing portfolio, would provide more information about each student's skill level beyond formal assessments. Future research should include more diverse students, including different geographic areas, socioeconomic background, gender, and performance levels. Increasing the diversity of students participating in writing studies will improve generalizability of studies and promote equitable outcomes for students.

## **Implications for Practice**

The Common Core Standards in Language Arts place a strong emphasis on persuasive and expository modes in writing, with a particular focus on college readiness in writing. These standards, and forthcoming assessments, will be influential in the coming years in terms of curriculum choices for practitioners. This study shows the importance of focused writing instruction in the nonfiction mode, as both Treatment 1 and Treatment 2 Groups outperformed the Comparator Group, which did not receive separate writing workshop instruction. This study has shown that writing instruction is more effective when it is taught systematically and not embedded within reading or social studies courses, as was the case for the Comparator Group.

When explored in the broader context of Common Core Standards, there is a need for assessment benchmark measures throughout the year to establish baseline levels of growth. At present, there is no single set of data that allows comparison to a national, normed sample that is aligned with Common Core Writing Standards. This study used a technique set forth by Graham et al, (2005) employing anchor papers from a group of sixth graders at the same site to form a basis of comparison on a 1-8 scale. However, as this scale is from a small sample of anchor papers, it lacked diversity and breadth. A large national sample from different geographic areas, ethnic groups, and socioeconomic groups would help to create a broader notion of high, average, and low performance in writing at the sixth-grade level and to eventually establish benchmarks similar to those that have been established for reading.

The time-consuming and labor-intensive process of assessing writing often engenders resistance among teachers. For example, Oregon State 6-Traits Writing Assessments require a great deal of state resources to score the writing pieces. As a result of these high costs, as of 2010, these assessments are only administered in 11<sup>th</sup> grade as a graduation requirement. This means that formal assessment information about students' writing ability comes too late in their school careers and is not able to provide critical information to drive instruction at the elementary and secondary levels.

Yet many teachers acknowledge that writing needs to be measured, assessed and intensively taught at all grade levels. Reducing the time cost of a writing assessment may help teachers to prioritize writing, as they can access information about student performance more frequently and take action on that information in their instruction. A key component of aligning assessments with standards and instruction involves creating dynamic assessments that are simple and low-cost. Districts and schools can put in place their own writing assessments that are leaner and simpler than the 6-traits system. As seen in this study, the use of measures like word count and holistic scoring may reduce the time cost of assessing writing. It is possible that these measures can produce a similar type of information as the 6-traits writing assessment at a much lower cost, allowing the assessments to be given more frequently and more efficiently.

One implication for practitioners is to use word counts as a simple and free way to assess writing quickly in a formative fashion. As shown in the results section, word count was positively correlated with both holistic quality and parsable units. Quantity may be a predictor of quality, as there is a need for a critical mass of writing to begin to meet standards for higher quality writing. One simple way to put this into practice is to

encourage lower-performing writers to track their progress through word count on portfolio pieces throughout the year, allowing students to see their growth in terms of quantity. Over time, this higher quantity of writing may translate into higher quality through more complex sentence structures, paragraphing, a progression of ideas, and introductions and conclusions. By contrast, the use of holistic measures or parsable units measures is more time consuming for teachers.

Finally, explicitly teaching goal setting in the writing process has some impact on students' ability write better, as measured through both quantity and quality. Goal setting is an important part of the writing process, and can be embedded in the writing workshop in simple ways, such as through checklists, in peer editing, or in large group instruction. As seen in this study, the use of goal setting allowed students to direct attention to significant elements of the writing process and to receive specific feedback on their progress. The habit of setting goals entails examining one's work, reflecting, and taking action to meet a higher level of achievement. The act of goal setting, when combined with the academic skills in the writing process, can produce significant results for all students in terms of their writing progress.

Writing will continue to be a curriculum priority in the coming years. A renewed focus on college readiness, combined with full implementation of the Common Core English Language Arts Standards, points to the need for a robust system of standards, assessments, and instruction in writing. Rigorous instruction in writing along with timely, inexpensive, and technically valid writing assessments will be necessary to fully prepare students in this area of literacy, both in future academic pursuits and in the 21<sup>st</sup> century workforce.



APPENDIX A

GOAL SETTING CHECKLIST USED WITH TREATMENT 1 GROUP

**Essay Checklist: Self-Edit Step**

**Step 1: Intro Check**

**Read your introduction.**

**Is there a hook? Circle it.**     yes     no

If no, you need to rewrite your introduction to have a hook.

**Is there a lead-in? Put a star by it.**     yes     no

If no, you need to rewrite your introduction to have a lead-in.

**What is the opinion you are expressing in your essay?**

**Underline your opinion on your draft.**

**Is this opinion clearly stated in your introduction as a thesis statement?** (A is B because of 1,2, and 3).

yes     no

If no, you need to rewrite your thesis statement to:

- State your topic
- State your opinion
- State three supporting reasons
- Be clear and concise

-----  
**Step 2: Supporting Reasons**

**Get out your outline/prewrite and your essay. Read over the outline and compare it to your final essay.**

**Is your supporting reason #1 included in the essay?**

     **yes**         **no**

If no, you need to rewrite supporting reason #1 paragraph to:

- Include your reason
- State support for this reason

**Is your supporting reason #2 included in the essay?**

     **yes**         **no**

If no, you need to rewrite supporting reason #2 paragraph to:

- Include your reason
- State support for this reason

**Is your supporting reason #3 included in the essay?**

**\_\_\_ yes \_\_\_ no**

If no, you need to rewrite supporting reason #3 paragraph to:

- Include your reason
- State support for this reason

---

**Step 3: Technical Components**

- \_\_\_ There is a name and date in the upper right corner.**
- \_\_\_ There is a title.**
- \_\_\_ The essay is double-spaced.**
- \_\_\_ The essay is spell-checked and grammar-checked for punctuation.**

---

**Step 4: Goal setting**

**Now examine your essay again. Could any of the supporting ideas be improved upon?**

**Check one or more of the following goals:**

- \_\_\_ I want to add one brand new supporting idea and take out one of the old supporting ideas.**
- \_\_\_ I want to add one brand new supporting idea and add it to the old supporting ideas.**
- \_\_\_ I want to examine one of my existing supporting ideas and make it a lot better with more details.**
- \_\_\_ I want to examine one of my existing supporting ideas and make it a lot better with better reasoning.**

---

**Step 4: Teacher Conference (teacher use only)**

- Intro Check Feedback**
- Supporting Reasons Feedback**
- Goal setting Feedback**

APPENDIX B

EDITING CHECKLIST (NO GOALS) USED WITH TREATMENT 2 GROUP

**Essay Checklist  
Self-Edit Step**

**Step 1: Intro Check**

**Read your introduction.**

**Is there a hook? Circle it.**       yes     no

If no, you need to rewrite your introduction to have a hook.

**Is there a lead-in? Put a star by it.**     yes     no

If no, you need to rewrite your introduction to have a lead-in.

**What is the opinion you are expressing in your essay?**

**Underline your opinion on your draft.**

**Is this opinion clearly stated in your introduction as a thesis statement?** (A is B because of 1,2, and 3).

yes     no

If no, you need to rewrite your thesis statement to:

- State your topic
- State your opinion
- State three supporting reasons
- Be clear and concise

-----  
**Step 2: Supporting Reasons**

**Get out your outline/prewrite and your essay. Read over the outline and compare it to your final essay.**

**Is your supporting reason #1 included in the essay?**

**\_\_\_ yes \_\_\_ no**

If no, you need to rewrite supporting reason #1 paragraph to:

- Include your reason
- State support for this reason

**Is your supporting reason #2 included in the essay?**

**\_\_\_ yes \_\_\_ no**

If no, you need to rewrite supporting reason #2 paragraph to:

- Include your reason
- State support for this reason

**Is your supporting reason #3 included in the essay?**

**\_\_\_ yes \_\_\_ no**

If no, you need to rewrite supporting reason #3 paragraph to:

- Include your reason
- State support for this reason

---

**Step 3: Technical Components**

**\_\_\_\_\_ There is a name and date in the upper right corner.**

**\_\_\_\_\_ There is a title.**

**\_\_\_\_\_ The essay is double-spaced.**

**\_\_\_\_\_ The essay is spell-checked and grammar-checked for punctuation.**

---

**Step 4: Teacher Conference (teacher use only)**

- Intro Check Feedback**
- Supporting Reasons Feedback**
- Technical Components**

## APPENDIX C

### WSPS SURVEY ITEMS

All items are scored on a 1-5 scale.

5=Strongly Agree

4=Agree

3= Undecided

2= Disagree

1=Strongly Disagree

Questions correspond to five subscales as labeled after each question: General Progress (GPR), Specific Progress (SPR), Observational Comparison (OC), Social Feedback (SF), and Physiological States (PS).

1. I write better than other kids in my class. (OC)
2. I like how writing makes me feel inside. (PS)
3. Writing is easier for me than it used to be. (GPR)
4. When I write, my organization is better than the other kids in the class. (OC)
5. People in my family think I am a good writer. (SF)
6. I am getting better at writing. (GPR)
7. When I write, I feel calm. (PS)
8. My writing is more interesting than my classmates' writing. (OC)
9. My teacher thinks my writing is fine. (SF)
10. Other kids think I am a good writer. (SF)
11. My sentences and paragraphs fit together as well as my classmates' sentences and paragraphs. (OC)
12. I need less help to write well than I used to. (GPR)
13. People in my family think I write pretty well. (SF)

14. I write better now than I could before. (GPR)
15. I think I am a good writer. (GPR)
16. I put my sentences in a better order than the other kids. (OC)
17. My writing has improved. (GPR)
18. My writing is better than before. (GPR)
19. It's easier to write well now than it used to be. (GPR)
20. The organization of my writing has really improved. (GPR)
21. The sentences I use in my writing stick to the topic more than the ones the other kids use. (OC)
22. The words I use in my writing are better than the ones I used before. (SPR)
23. I write more than other kids. (OC)
24. I am relaxed when I write. (PS)
25. My descriptions are more interesting than before. (SPR)
26. The words I use in my writing are better than the ones the other kids use. (OC)
27. I feel comfortable when I write. (PS)
28. My teacher thinks I am a good writer. (SF)
29. My sentences stick to the topic better now. (SPR)
30. My writing seems to be more clear than my classmates' writing. (OC)
31. When I write, the sentences and paragraphs fit together better than they used to. (SPR)
32. Writing makes me feel good. (PS)
33. I can tell that my teacher thinks my writing is fine. (SF)
34. The order of my sentences makes better sense now. (SPR)

35. I enjoy writing. (PS)

36. My writing is more clear than it used to be. (SPR)

37. My classmates would say I write well. (SF)

38. I choose the words I use in my writing more carefully now. (SPR)

## APPENDIX D

### WRITING PROMPTS

#### Pre-Assessment

**Directions: Choose one of the prompts below and write a persuasive essay.**

-First, brainstorm ideas.

-Then do a prewrite on the prewrite graphic organizer.

-Write a rough draft (around two pages.)

-Do a self-edit and make changes for your final draft.

1. Your city or town would like to build something for the community to enjoy. **Write a paper to convince** your community that your idea of what to build is the one they should choose.
2. Playing video games has many pros and cons. Think about whether or not you, as a parent, would place a limit on the number of hours per day that your son or daughter could play video games. Take a position on this issue and **convince** other parents to agree with you.
3. What changes would you like to see in your school lunch program? **Write a paper to convince** your school to adopt your ideas.

#### Post-Assessment

**Directions: Choose one of the prompts below and write a persuasive essay.**

-First, brainstorm ideas.

-Then do a prewrite on the prewrite graphic organizer.

-Write a rough draft (around two pages.)

-Do a self-edit and make changes for your final draft.

1. Choose an issue from your community (such as a leash law, community service, teenage curfew, or anything else). Take a position on that issue and **write a paper to convince** your reader to agree with your point of view.
2. People tell us that we need exercise to stay healthy. **Write a paper to convince** your reader to join you in an activity that will be fun as well as healthy.
3. Think of something you would like to have changed or added in your school. It could relate to a school policy, a facility or building, or course offerings. Take a position on one specific issue and **convince** others to agree with you.



## APPENDIX E

### DIRECTIONS FOR SCORING FOR RATERS

Please read each paper attentively to obtain a general impression of overall writing quality. You will use an 8-point Likert scale, with 1 representing the lowest quality of writing and 8 representing the highest quality. Please read the papers in groups of ten and take frequent breaks to ensure quality.

Ideation, organization, grammar, sentence structure, and aptness of word choice should all be taken into account in forming a judgment about overall quality, and no one factor should receive undue weight.

Attached are representative papers for a low, middle, and high quality score. These compositions were collected in December and obtained from a sixth grade class in the participating school. This classroom did not participate in the study. A former middle school teacher selected the best, average, and poorest quality compositions on the basis of the scoring criteria described above to form a pool of scored papers. Low, middle, and high papers were chosen and will serve as your anchor papers for scoring the others.

**Attachments:**

Anchor Paper A: Representative of a 2/3 score

Anchor Paper B: Representative of a 4/5 score

Anchor Paper C: Representative of a 6/7 score

Please record your score on the bottom lefthand corner of each writing piece.

APPENDIX F  
ANCHOR PAPERS FOR RATERS

SCORE OF 2/3

School Lunch

Do your kids say they're hungry? I know I do because the schools aren't feeding us enough. I think there should be extra meat in the sub maker. I also think there should be two pizzas in the pizza line. I also think there should be double the food in the hot lunch place. That's what I think of lunch.

## SCORE OF 4/5

### Video Games

Kids shouldn't be playing games forever, even though some would when they got a chance. But that's why I thought of these rules. They are the limits, what they should do before and after, and the ratings.

First, the limit. I think kids should play a max of 2 hours. I think 2 hours is good for a day.

Second is what they should do before and after playing. Before they play they should do all their homework and they should read for 30 minutes. Then after they should read another 30 minute, then play outside.

Finally, ratings. I think until 10 kids should play E games, then 10-13 is E10, then 13-16 is T, then finally 16 and up is all the ratings.

I think kids shouldn't play games forever. What do you think?

SCORE OF 6/7

A New City Library

How would you like to have a new library? You could check out as many books as you want, look things up in the new computers, or stay however long you want to in there.

First, you would have a small card, about 2 inches long by 1 inch. You put it through a scanner at the door. You're in and can check out as many books as you feel like. There's no limit but you have to bring them back after 8 days.

Another great thing is the computers, with 24-inch monitors with touch screens on all fifty of them. Yes, fifty of them. You could play games on them, as long as you have the volume off or have headphones. You could also look up books in or out of the library, meaning you could order them for free. We pay!

Lastly, you're sleeping calm and peacefully. Then all of a sudden you wake up at one in the morning, remembering you had to check out a book on aircrafts. You go to the library, praying it's still open. You get there and see the 24/7 sign on the front wall. Back at your house, you're reading your book—it's three in the morning and the library is still open.

All of the books you want, giant computers, and 24/7 service. What more do you want from a library?

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