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WRITING INSTRUCTION AND STANDARDIZED READING SCORES AMONG
SECONDARY STUDENTS

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at the

CLEVELAND STATE UNIVERSITY

DECEMBER, 2009

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DEDICATION

This dissertation is dedicated to my husband and children Sara, Michael, Jonathan, Steven, Eric, and Caren who have been supportive and a part of my life during this entire process. I love you – you are my life.

I include my sister Debra in the dedication. Debra was the best sister she knew how to be. If not for her developmental handicap, I do not know if I would have felt the need to earn this advanced degree.

I would be remiss in not reserving a part of the dedication to my mother-in-law Sylvia Feldman and late father-in-law the Honorable H. Arthur Feldman. Sylvia was my cheerleader. She and Arthur gave me the most precious gift, their son.

It is also dedicated to the memory of my beloved childhood family who are no longer with us, my parents Harold and Pearl Goldenberg and my siblings Joel and Risa.

The final dedication is to the children and adults murdered in the Holocaust, a number of whom were relatives I never knew.

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The path to this point would have been far more difficult without the support of my coworkers and the participating teachers. Dr. Caroline Kaczala, Betsy Gilmore, and Dr. Al DeGennaro patiently answered all of my questions about statistics and data. If I did not appreciate the dedication of the participating teachers in my district before I began this project, I most certainly would now. No matter how busy they were, almost all of these teachers found time to participate in this study. I am equally grateful to the middle school teachers, both in my district and in the other participating district, who committed themselves to this project. The dedication of these professionals to education is commendable.

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WRITING INSTRUCTION AND STANDARDIZED READING SCORES
AMONG SECONDARY STUDENTS

DONNA B. FELDMAN

ABSTRACT

The reading scores on the *Nation's Report Card for 2007* indicate that not all children share the same proficiency in literacy. Reading and writing require the use of similar cognitive processes, yet few studies focus on this relationship or how writing can be a tool for reading remediation. The research questions in this study addressed the extent to which: (a) differences occur in the time spent on writing instruction by genre, instructional methodology, and the phase of writing between middle and high school teachers; (b) the amount of time teachers provide writing instruction, the instructional methodology, the genre addressed in the instruction, the process of writing discussed, and students' gender predict change in standardized reading test scores; and (b) the amount of time students spend writing, the genre of writing, the part of the writing process used, and students' gender predict change in standardized reading test scores.

Data were obtained for 307 middle and high school students on the Scholastic Reading Inventory and the results of a daily survey completed by teacher participants that measured the amount of time spent on writing instruction, the methodology, the genre of writing, and the phase of the writing process used. A one-way ANOVA indicated statistically significant differences between middle and high school instruction for academic writing and phases of the writing process other than writing. A stepwise regression indicated that ethnicity, instruction on the writing phase of the writing process, formal instruction, instruction on academic writing, and instruction on journals were

statistically significant predictors of reading scores. A stepwise regression analyzed the relationship of student writing activity and reading scores; ethnicity, grade level, the phases of the writing process, writing without formal conventions, and time spent on writing journals were statistically significant predictors of reading scores.

The results provide suggestions for future practice and research. Future practice should include the reduction of instruction on academic writing and journals and should include formal instruction on writing and more time for students to compose nonacademic writing. Future research should use multivariate measures, the cognitive processes of literacy, and a more commonly used reading assessment.

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CHAPTER I

INTRODUCTION AND PURPOSE

1.1 Introduction

The quest for literacy in America began with the arrival of European immigrants in the 1600s. Schools were the source of literacy (Kaestle, Damon-Moore, Stedman, Tinsley, & Trollinger, 1991) and had the goal of providing students with the ability to read the Bible (Nelson & Calfee, 1998). Reading instruction preceded writing instruction since writing was thought to depend on reading ability, be more difficult to learn than reading, and considered less important (Nelson & Calfee). Literacy in early America was obtained by a limited and privileged element of the population. Grammar instruction provided some linkage between reading and writing. Students read text, analyzed the patterns within it, and imitated some aspect of the text through writing. After the Revolutionary War, two rhetoricians, George Campbell and Hugh Blair, modified the previous approach to writing. They considered the different links between ideas and their functions for communication as well as a change in focus on the arrangement and style of rhetoric. Writing combined the understanding of texts and the composition of texts.

Toward the end of the century, rhetoric courses were transformed into composition courses, while literacy criticism was established as a separate exercise (Nelson & Calfee).

At the end of the nineteenth century, English emerged as a discipline at the college level (Nelson & Calfee, 1998) and then moved from higher education to secondary and elementary schools. American schools further changed as a result of industrialization. Schools became a vehicle for controlling the masses of children and preparing them for work. To accommodate compulsory education, large, new schools, that resembled factories, were built in urban areas (Reese, 2005). America wanted its children to read and write. Schools were not equal in quality or access, and not all children learned to read and write (Spring, 1997).

In the twentieth century, literacy education began its history. Literacy support for struggling readers in public schools dates to the 1930s with the formation of reading specialists who were both supervisors and aides to teachers with the goal of improving reading instruction (Hull, 2004). Ten years later, reading specialists were replaced with remedial reading teachers. In the 1960s, remedial reading teachers changed into resource room teachers who worked with teachers, administrators, parents, and students to improve reaching achievement. Resource room teachers became today's literacy coaches and adopted the roles of their predecessors as well as becoming responsible for changes in policy and instruction (Sturtevant, 2003).

Literacy means to have power over letters through reading and writing (Elbow, 1993). The National Council of Teachers of English Commission on Reading ([NCTE] n.d.) posits reading to be “a complex and purposeful sociocultural, cognitive, and linguistic process in which readers simultaneously use their knowledge of spoken and written

language” (p. 1). Reading is the construction of a mental picture of words on print (Richek, Caldwell, Jennings, & Lerner, 2002) and is culturally transmitted (Ellis, 1884), but “the essence of reading is the creation of meaning” (Tompkins, 2001). Good reading success involves distinguishing between letters and sounds and using this distinction for decoding and spelling and understanding the relationships of the letters and sounds (Ohio Department of Education [ODE], 1999). Good reading skills involve understanding the structure of words and sentences, comprehension of individual words through conceptual knowledge, inferences, and vocabulary and relating the new ideas and knowledge in the printed word to current knowledge (ODE).

Despite the growing knowledge about the skills necessary to read, the results of *Nation’s Report Card: Reading 2007* show only a marginal improvement in reading scores for the participating 350,000 students from 2005; the reading results are reported on a scale of 0 to 500 with the statistical significance level set at .05 (Lee, Grigg, & Donahue, 2007). Since the onset of the report card in 1992, the newest scores reflect a gain of four points for fourth grade students and a gain of three points for eighth grade students (Lee et al.). The scores of White fourth grade students increased by seven points and those of African American students by eleven points. Fourth grade students eligible for free or reduced lunch increased four points from 2003, while those students not eligible for free or reduced hot lunch increased 3 points. Scores of White eighth grade students increased five points and those of African American students by eight points. The gap between the two racial groups was reduced from 30 points in 1992 to 27 points in 2007 (Lee et al.). The scores of eighth grade students eligible for free lunch increased

two points from 2003, those eligible for reduced lunch decreased three points, and those ineligible for free or reduced lunch remain unchanged (see Table I).

Table I

Selected Reading Scores from the *Nations Report Card for 2007*

Demographics	Year			Gain/Loss
	1992	2003	2007	
Fourth grade students	217	---	221	4
White	224	---	231	7
Black	192	---	203	11
Eligible for free lunch	---	199	203	4
Eligible for reduced lunch	---	211	215	4
Ineligible for free/reduced lunch	---	229	232	3
Eighth grade students	260	---	263	3
White	267	---	272	5
Black	237	---	245	8
Eligible for free lunch	---	244	246	2
Eligible for reduced lunch	---	258	255	-3
Ineligible for free/reduced lunch	---	271	271	0

(Lee, et. al., 2007)

The lack of significant improvement on reading scores noted on the *Nations Report Card for 2007* indicates that schools are not producing the changes needed in literacy for the future. *No Child Left Behind* (NCLB) requires that students become proficient in reading by 2013-2014 (White House, 2002). In addition to the struggle schools

experience with obtaining the requisite improvement, they face a series of consequences if they do not show the yearly annual progress of its students (Daggett, 2003).

1.2 Statement of the Problem

Literacy educators face many issues beyond their control but nonetheless are held accountable for the success for all of their students. They have to overcome the challenge of implementing remediation where and when needed without specific curriculum. Students enter school with cognitive and emotional difficulties, varying amounts of early exposure to text, low-income homes, and peer influences that literacy educators cannot control. In addition, the number of students with serious problems is expected to rise (Rogers & Freiberg, 1994). Yet, educators have a critical and challenging role in the effective teaching of literacy (Hoffman, 1991; Kaestle, 1991; Vacca & Vacca, 1989; Vacca, 1997) and secondary educators face different challenges than elementary educators. Until recently, more attention was spent on closing the literacy achievement gap in primary grades than in secondary grades (Alvermann, 2005a; Vacca, 2002). The gap between good and poor readers widens as children grow since good readers continue to acquire reading skills through practice while poor readers avoid reading (Alvermann, 2005b; Quirk & Schwanenflugel, 2004). Better readers read more than poor readers (Alvermann, 2005b; McQuillan & Au, 2001). Struggling secondary school readers may not read fluently, use context clues correctly to identify unknown words, or have strong phonics and word recognition skills (Ediger, 2005). Older struggling readers present a challenge to their secondary school teachers because many never received training in reading instruction as part of their preservice education (Carnegie Corporation, 2006; Ivey & Fisher, 2006). The causes of reading problems can be emotional, (Ambe, 2007;

Richek et al., 2002), economic (Hart & Risley, 1995; Hannaway, 2005), or related to family and community (Alvermann, 2005a; Alvermann, 2005b; Delpit, 1977; Hoover, Politzer, & Taylor, 2005; McShepard, Goler, & Batson, 2007; ODE, 1999; Richek, Caldwell, Jennings, & Lerner, 2002; Sheldon & Epstein, 2005).

Children enter school with varying levels of literacy. The exposure to printed materials to which children are exposed prior to starting school is dependent on having parents who provide a printed-media rich environment, preschool experience, and the commitment of their community to literacy (ODE, 1999; Richek et al., 2002; Sheldon & Epstein, 2005). Children who come from homes in which they observe reading and see that reading is valued are more likely to engage in reading themselves (Allington and Cunningham, 1996). A larger number of books provided in the home correlated with higher scores on reading tests (Halle, Kurtz-Costes, & Mahoney, 1997). The results of a longitudinal study (Cunningham & Stanovich, 1997) indicate that children who have higher reading scores in first grade are likely to be more engaged in reading activities in 11th grade. Children who are not fluent readers do not acquire the background knowledge, skills, and vocabulary to comprehending the required reading they face in school (Alvermann, 2005b), which suggests that reading is the culmination of several skills and processes.

The lack of exposure to early literacy is further exacerbated by colloquial dialects, which are not used in schools (McWhorter, 2000). English spoken in a dialect different from what is used in schools is the language children connect with loved ones, community, and identity (Delpit, 1977). Students' use of their dialect when reading often results in pronunciation corrections that interrupt reading and may cause students to

resent their teacher. Colloquial dialects have an adverse affect on reading scores (Burke, Pflaum, & Knafle, 1982; Hoover, Politzer, & Taylor, 2005).

Poverty is another significant negative factor for discrepancies in literacy proficiency (Alvermann, 2005a; Halle, Kurtz-Costes, & Mahoney, 1997; Hart & Risley, 1995). It affects students in three different ways (Hannaway, 2005). First, family background is associated with student achievement as students learn reading, communication, and teaching skills through interactions with family members. Parents transmit academic skills to their children; those with more education transmit more skills (Hannaway). The children of parents with a higher educational level received three times more experience with language than those children with parents on welfare (Hart & Risley). In Hart and Risley's study, professional parents (those with the highest income) spoke an average of 487 utterances per hour to their child, parents considered working class spoke an average of 301 utterances per hour to their child, and parents on welfare spoke an average of 178 utterances per hour. Using extrapolation, Hart and Risley estimate that in a four year period, children with professional parents would have an accumulated experience with 45 million words, children with working-class parents, an accumulation of 26 million words, and children with parents on welfare, an accumulated experience of 13 million words. The quality of the utterances varies by economic class as well. Professional parents used far more nouns, modifiers, and affirmatives than working-class parents or parents on welfare (Hart & Risley). The language skills learned by age three predicted language skills six years later for the children (Hart & Risley). A child's cultural, social, and personal history is reflected in his linguistic-experiential reservoir (Rosenblatt, 1994). Students with insufficient knowledge will experience difficulty comprehending school-

assigned texts (Alvermann; Ambe, 2007; Ediger, 2004). Social class can compromise student performance due to linguistic issues that include not understanding common nuances about the meaning of a word, phrase, or passage (Hart & Risley; Hoover, Politzer, & Taylor, 2005; Schriver, 1992). Thus, students from low-income homes are at a disadvantage compared to those from middle- and high-income homes (McShepard, Goler, & Batson, 2007) and do not perform as well on standardized tests as other student groups (Hannaway).

The second influence of poverty to discrepancies in literacy is the promotion of unequal outcomes by schools for students of different backgrounds; schools in communities with different family incomes have varying resources and teacher quality (Hannaway, 2005). Although Hannaway considers financial resources a factor for student achievement, she notes “there is no simple relationship between level of resources expended and student performance” (p. 14). She does, however, connect resources with class size and the quality of teachers. She purports that small class size, especially in the early grades and for disadvantaged students promotes student achievement. Hannaway observes that teachers in high poverty schools often are staffed by teachers from less selective schools than low poverty schools and have fewer teachers with advanced degrees than lower poverty schools.

The third influence of poverty is that students from low-income families have fewer out-of-school experiences that promote learning such as travel, games, camp, books, and computers and do not have the experiential background to connect to texts. High and middle income parents engage in concerted cultivation, the fostering of their children’s talents, opinions, and skills through organized activities (Lareau, 2003); parents in these

income levels actively stimulated their children's development and social skills while parents defined as working class and poor did not.

In early adolescence, other outside influences adversely impact reading (Richek et al., 2002). The influence of peers can contribute to the disinterest in literacy. Those with peers who do not value reading may harm reading progress (Richek et al.). Peer pressure can be difficult to resist (Nieto, 1996). Culture is the primary influence in the avoidance of literacy in the African American community (McShepard et al., 2007; Sowell, 2005).

Few reading programs exist for struggling secondary readers (Quirk & Schwaneflugel, 2004). What remediation is provided for secondary struggling readers is inconsistently implemented (Barry, 2000). Should the results of this study be significant, educators should consider restructuring language arts curriculum to use writing as a means for improving reading performance and to supplement their reading remediation for secondary students.

1.3 Conceptual Framework

The conceptual framework for this study is a combination of several factors that contribute to reading proficiency and are portrayed in Figure I. The factors contributing to low reading proficiency include family income (Hart & Risley, 1995), family members (Alvermann, 2005a; Delpit, 1977; Hoover et al., 2005; McShepard, 2007), and mental difficulties (Richek et al., 2002). Low social economic status of children's families contributes both directly and indirectly to low reading proficiency (Hart & Risley, 1995); parents with low incomes are unable to provide their children with the out-of-school experiences needed to generate prior knowledge, consistent exposure to printed material (Hannaway, 2005), and the opportunities needed for vocabulary and syntax acquisition

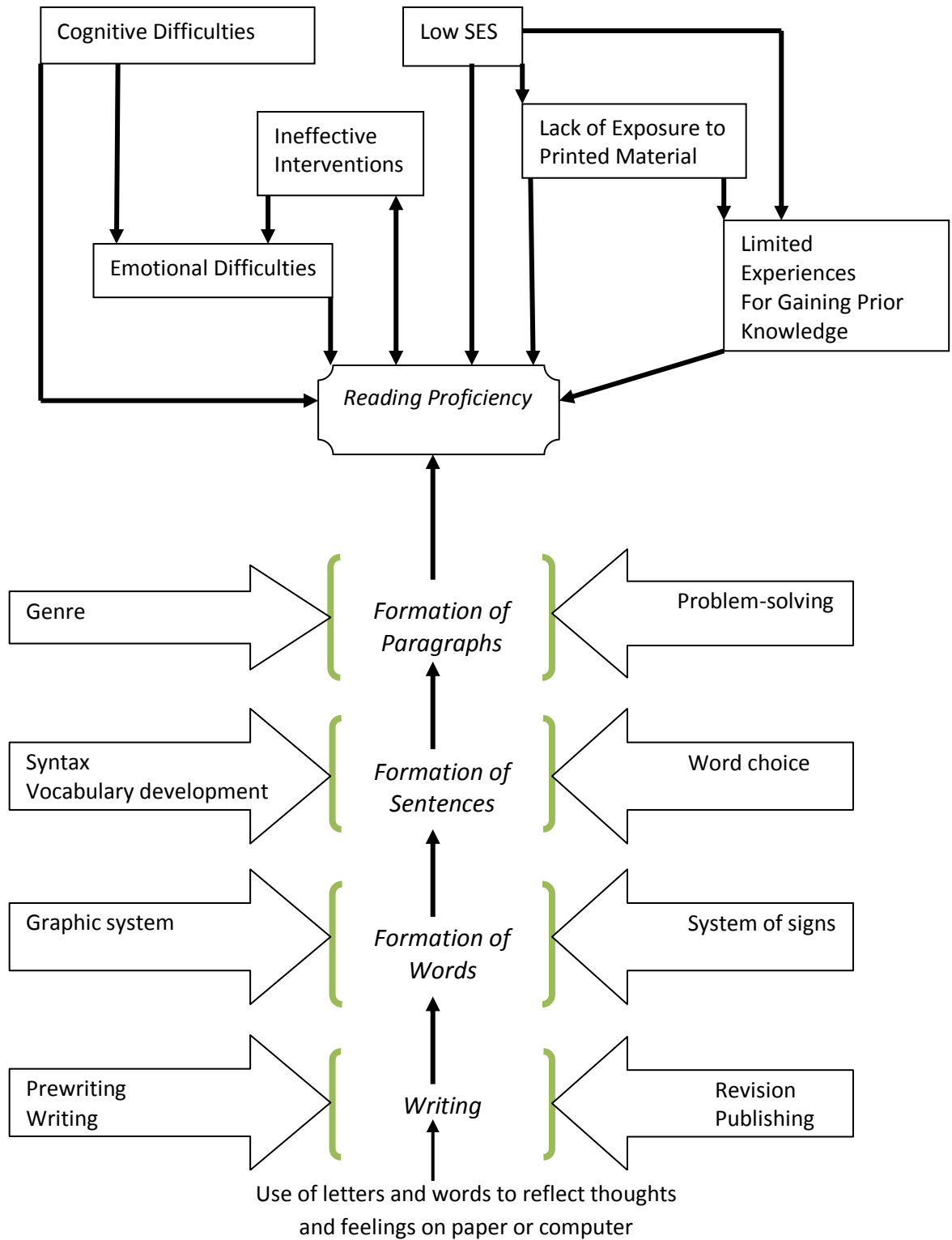


Figure 1. Negative and positive influences on reading proficiency. (Negative influences are displayed in rectangles and positive influences are displayed in brackets.)

(Hart & Risley). In addition, if parents are not avid readers, their children are unlikely to be avid readers either (Alvermann & Cunningham, 1996).

The mental difficulties a child has that interfere with reading may be either cognitive or emotional. Cognitive difficulties in reading may involve in an inability to see and process the letters in a word and may cause emotional difficulties that negatively affect reading proficiency (Boget & Marcos, 1997). Ineffective reading interventions can also contribute to emotional difficulties (Moore, Alvermann, & Hinchman, 2000). Unlike cognitive difficulties, ineffective reading interventions both impact and are impacted by reading proficiency making the relationship between reading interventions and reading proficiency recursive. Adolescent readers, who struggle with reading, may face ridicule and become embarrassed about their reading ability (Green, 2000). Ridicule and embarrassment can produce stress and anxiety that adversely impacts reading proficiency as well (Moore et al.; Sadler, 2005).

Not all of these literacy issues can be addressed in schools or in reading programs. Educators cannot control the amount that parents talk or read to their children or undue a learning disability that interferes with the cognitive processes of reading. Educators can, however, provide opportunities for students to use and learn words beyond reading; educators can provide opportunities for writing. The underlying hypothesis for this study is that writing and/or writing instruction will improve reading proficiency.

Writing has a positive impact on reading proficiency (Langer, 1986) and is considered to consist of prewriting (planning), writing (the physical act of composing), revision (editing), and publishing (sharing of the composition; Burns, 1999; Christenbury, 1994; Lindemann, 1995; Murray, 2003; Perl, 2003; Tompkins, 2001; Vacca & Vacca, 1989;

Vygotsky, 1962; Williams, 1989). Writing and writing instruction involve a progression that constructs and expounds ideas through words. In the physical act of writing, letters are formed, one at a time, and then combined to form words. Letters are a system of signs or graphic representations (Lindemann, 1995) that represent the sound of spoken language (Vygotsky, 1978). Words are combined to form sentences and then paragraphs and longer works. Sentences are developed with syntax and word choice, both of which are dependent on vocabulary development and are culturally or socially based (Schultz & Fecho, 2000; Vygotsky, 1962); the cultural or social aspect of writing includes the identity of the writer (Dyson, 1990; Hicks, 1996). As sentences are combined to form paragraphs, the genre of the writing product emerges as does problem-solving (Lindemann). If children who read a lot gain a greater proficiency at reading (Quirk & Schwanenflugel, 2004), then the repeated usage of letters and words in the creation of sentences and paragraphs should also positively contribute to reading proficiency.

1.4 Purpose of the Present Study

Previous research (Lunsford, 1978; Shanahan & Tierney, 1990) indicates that a relationship exists between reading and writing to the extent that writing instruction will improve reading proficiency and other research (Klecker & Pollock, 2005) indicates that writing, when used as a strategy for reading, increases reading achievement. Yet research in the remediation of reading has not integrated the relationship between reading and writing. The purpose of this dissertation proposed study is to measure the extent to which mode of writing instruction and type of writing activity improve student performance on standardized reading tests for a population of secondary matriculating in selected Ohio school districts.

1.5 Research Questions

This study compares the achievement levels in reading of 307 students based on the frequency and type of writing they compose and the writing instruction they receive. The study will examine whether or not there is a statistically significant relationship between these components of writing and reading scores. The research questions for this study are:

1. Are there statistically significant differences in the instruction of writing between middle and high school classrooms?
2. To what extent does the amount of time teachers provide writing instruction, the method of writing instruction, the genre of the writing addressed in the instruction, the process of writing discussed, and student gender predict¹ students' reading test scores?
3. To what extent does the amount of time students spend writing, the genre of writing students do, the particular part of the writing process students use, and students gender predict students' reading test scores?

1.6 Significance of the Study

Reading programs do not offer longitudinal information about their effectiveness and are frequently used with small groups of students, which is not an option for many children. The challenge to literacy educators is how to improve reading proficiency with limited resources. The lack of consistent student improvement and remediation tools was the impetus for one of the participating districts in this study to revamp their approach to secondary remedial programs and adopt a new English and language arts curriculum.

¹ Although the word predict is not universally used to interpret the results of statistical models, the author adopted the word as per use by Cronk (2006), Field (2005), and Meyers (2006) to describe the results of the stepwise regressions used in this study.

Embedded in this curriculum is writing instruction that complements the mandatory four writing prompts established by one of the participating school district three years ago. The prompts vary in detail from grade to grade, but for secondary students include a narrative and business letter to be completed in the fall semester and a research paper and persuasive essay in spring semester. Although these prompts are required, teachers are not provided with prescribed methodology for instruction and there is no check by the district for compliance. The potential impact of writing on reading as a means of remediation has largely been ignored even though writing “is an approach that lets children figure out reading” (Allington & Cunningham, 1996, p. 57); writing also improves the reading proficiency of college students (Lunsford, 1978).

Children of all ethnicities can be found in remedial reading programs. Historically, these programs house more boys than girls. According to various studies, literacy achievement is connected to economic class, ethnicity, and (except for students with learning disabilities and delayed development). Within one of the selected school districts for this study, 12th grade assessments in writing proficiency indicated a small gap of 6% between White and Black students; the reading gap for reading and other content tests that require reading ranged from 29% to 39% between White and Black students. An implication of these trends is ethnicity determines achievement due to a disparity that occurs in learning.

One of the recommendations made by urban educational experts is the use of culturally relevant literature as part of normal classroom experiences (Alvermann, 2005; Sheldon & Epstein, 2005). Although this suggestion has merit and a history of success, it is not always practical to implement primarily due to resource limitations for the

purchase of multicultural curricular materials. A method to provide culturally relevant literacy instruction is through writing. The advantages of multicultural materials not only pertain to issues of ethnicity but to issues of social class and nonnative English speakers as well. Hoover, Politzer, and Taylor (2005) observe that social class can compromise student performance due to linguistic issues that include not understanding common nuances about the meaning of a word, phrase, or passage. Similarly, Hannaway (2005) found that students from lower income homes do not have the experiential background to connect to texts when reading. Students learning English as a second language (ESL) learn at different rates (Tompkins, 1998). English spoken by new ESL speakers is often syntactically simple, articulated in short sentences, and void of idioms. Tompkins notes that writing will facilitate the learning of words, sentences, and phrases.

Writing instruction is not cost prohibitive, as is the purchase of new texts priced at approximately \$74.00 per student textbook (Glencoe, n.d.; McDougal Littell, 2006) and does not have to be labor intensive for assessment. Written comments on a final paper are considered to be ineffective in improving students' writing and are often ignored by students (Williams, 1989). Feedback can be given as students are writing rather than when the product is completed (Williams). Rather than respond to students' errors of syntax and spelling, a teacher can assess the "effectiveness of their writing as a whole" (Harris, 1997). Students' writing can be assessed through the use of a rubric in which the teacher simply checks off the traits contained in the sample (Allington & Cunningham, 1996; Williams). Lindemann (1995) recommends identifying one or two problems in students' writing to address and limiting comments. Assessment can be given by a team of students and the teacher (Langer, 2002). The combining of reading and writing

instruction provides more efficient use of instructional time and greater ease in writing lesson plans than does separate instruction for reading and writing (Buckenmeyer, 2005).

The experience of writing allows students to make connections with a piece of text by placing the student in a position to respond to some element of text, fiction or nonfiction alike, regardless of ethnicity or social class. When writing, students actively construct meaning and practice the dialect of Standard English (Delpit, 1997), which will aide students when faced with reading material. Teachers can assess writing through peer review or oral recitation of the writing product (another State of Ohio language arts benchmark).

The target beneficiaries of this research will be remedial readers who are in middle or high school but could include elementary students as well. Currently no published research exists that measures the impact of these specific writing components of instruction and student activity has on reading, making this study the first of its kind.

1.7 Organization of the Dissertation

This dissertation is divided into five main sections followed by a bibliography and appendices. Chapter I provides an introduction to the study, a statement of the problem, the significance of the study, and its purpose. The research questions are presented followed by the limitations of the study and the key definitions of terms.

Chapter II contains an overview of the literature of topics relevant to reading and writing for the purposes of this study. The literature presented includes quantitative and qualitative research, government reports, theoretical essays, position papers, and other writings pertinent to this study.

Chapter III is a description of the methodology used in this study. The methodology discussed includes data sources and collection procedures, measures and variables, data analysis, and the rationale for selecting a two-level hierarchical linear model for data analysis.

Chapter IV presents the results of the analyses. Included in this section are the descriptive statistics, the research findings, tables, and figures.

The concluding chapter, Chapter V, provides a summary of the study and its findings. This section includes a discussion of the findings, the implications and recommendations for practice, the limitations of the study, and recommendations for future research.

1.8 Limitations of the Study

Interpretation and application of the results are limited due to the following considerations:

- (1) The sample was limited to the two out of a possible four of the school districts in Ohio licensed for Scholastic Reading Inventory (SRI) and located in inner-ring suburbs. The majority of students in these districts is eligible for free and reduced hot lunch; class sizes average 25 students.
- (2) The sample is also limited to students in grades six through ten. The SRI, the measurement of reading achievement used in this study, was not developed for students in grades eleven and twelve.
- (3) This study does not consider writing and writing instruction provided by teachers of other content areas. For example, social studies teachers, while not providing explicit writing instruction, often require essays for tests and classroom assignments.

- (4) This study does not consider the proficiency of writing student have prior to the collection of data. Obtaining decisive and objective assessment on student writing would be difficult to obtain since not all students maintain a portfolio of their writing that travels to each teacher.
- (5) This study does not include a control for background variables; socioeconomic status is limited to eligibility for free or reduced lunch.
- (6) The study does not include a control group. Eliminating the teaching of writing in a classroom would be extremely detrimental to students.

1.9 Definitions of Terms

Term	Definition
<i>Cognitive Processes</i>	Processes used for reading that begin at the visual system, move to the symbolic and semantic senses and then the oral motor systems (Boget & Marcos, 1997).
<i>Instruction</i>	Manner in which knowledge is transferred from a teacher to a student. Includes direct instruction (Langer, 2002), guided reading (Rasinski, 2003), modeling (Tompkins, 2001), and cooperative groups (Lindemann, 1995).

Term	Definition
<i>Lexile scores</i>	Level of difficulty of a text passage based on the analysis of 125 words; lexile scores range from 200 to 1700 (Scholastic, In., 2006).
<i>Literacy</i>	A sociocultural, cognitive, and linguistic process that uses knowledge of spoken and written language to understand text (NCTE, n.d.).
<i>Reading</i>	The creation of a mental picture from words on print (Richek et. al. 2002) that involves an interaction between the reader, the text, and the context of reading (Lee et. al, 2007).
<i>Reading remediation</i>	Instructional approaches to improve students' reading proficiency that have systematic and explicit strategies (IRA, 2002).
<i>Scholastic Reading Inventory</i>	Computer-administered assessment for student reading proficiency that includes making inferences, forming conclusions, and understanding vocabulary (Scholastic, Inc., 2006).
<i>Strategies</i>	Techniques taught to students that enable them to engage in activities and monitor their learning (Langer, 2002).

Term	Definition
<i>Writing</i>	Graphic reproduction of the writer's speech (Fischer, 2001); the actual composition of text (Vygotsky, 1962).
<i>Writing Instruction</i>	The methodology used by the teacher to teach writing and includes direct instruction (Langer, 2002), modeling (Tompkins, 2001), cooperative groups (Lindemann, 1995), and the use of graphic organizers (Lindemann).
<i>Writing process</i>	The steps of prewriting, composing, and revision that may or may not be a linear progression (Flower & Hayes, 2003).

CHAPTER II

REVIEW OF THE LITERATURE

2.1 The Cognitive Processes of Reading

Reading requires the cognitive analysis or identification of letters, the translation of letters to sounds, the combining of sounds in syllables, and the synthesis of sounds into a word (Boget & Marcos, 1997). As the reader matures, this process becomes more complex. An expert reader perceives a reduced set of letters and through this root of the word establishes meaning of the word. Fluent reading is the convergence of the visual images of the letters and acoustic characteristics. Those who have difficulty reading may confuse letters or misunderstand their spatial orientation. Others may experience difficulty in recognition due to impairments in the process of analyzing and synthesizing the sound of the word. A third cause of reading difficulties may be the impairment of eye movement (Boget & Marcos).

The cognitive process of reading commences at the visual system and passes through symbolic and semantic senses and the oral motor systems (Boget & Marcos, 1997). Ellis (1984) posits a more detailed route the written word passes through for meaning. The written word must travel through the visual analysis system, visual word recognition system, semantic system, the phonemic word production system, and phonemic buffers before it can be pronounced and meaning obtained. In this sequence of systems, the

reader must construct the word from letters, apply their prior knowledge of letter-sound correspondences to create an acoustic form, and use audio recognition to identify the acoustical code. Skilled readers convert letter strings to phonemic forms by using analogies or low-level syllable correspondences while poor readers do not (Ellis; Lewin, 2003). The knowledge about the processes of reading helps facilitate strategies for remediation for educators (International Reading Association [IRA], 2002).

Within the systems of cognitive processes, readers gain meaning through printed words. One of the first basic concepts in reading is phonemic awareness in which the reader can discern that words have a sequence of syllables and units of sound in spoken language (phonemes; Ambruster & Osborn, 2001; Lapp & Flood, 2005; ODE, 1999). Phonemic awareness is the ability to “notice, think about, and work with the individual sounds in spoken words” (Ambruster & Osborn, p. 2). Following phonemic awareness is phonics, the understanding that a predictable relationship exists between the letters that represent sound in the written word (Ambruster & Osborn). The last process, phonological awareness, is the ability to understand that the sound of the language is distinct from its meaning (ODE) and includes words, syllables, phonemes, onset and rimes (Ambruster & Osborn; Lapp & Flood).

Once a reader has developed the relationships between letters, combination of letters, sounds, and meaning, she may then decode words. Decoding is the process of determining the correct pronunciation of a printed sequence of letters based on knowledge about spelling and sound (ODE, 1999; Rasinski, 2003). Tompkins (2001) categorizes decoding into several processes of word identification. Word-identification strategies include phonic analysis, analogy, syllabic analysis, and morphemic analysis.

Phonic analysis is the use sound-symbol correspondences and spelling patterns to decode words. Analogy uses knowledge of rhyming words for pronunciation. Syllabic analysis requires readers to break multi-syllabic words into syllables before using phonics and analogies to decode the syllables. Morphemic analysis occurs when readers apply knowledge of root words and affixes to identify an unfamiliar word. Proficiency in decoding produces fluency, the automatic recognition of words when reading (Ambruster & Osborn, 2001; ODE; Richek, Caldwell, Jennings, & Lerner, 2002). Students demonstrate fluency when their reading closely resembles speaking. Fluency is the bridge between word recognition and comprehension (Ambruster & Osborn; Lapp & Flood, 2005; Rasinski & Padak, 2005; Richek et al.; Vacca & Vacca, 2005).

Comprehension, the goal of reading, is the understanding and interpretation of written text (Hoffman, 1991; ODE, 1999); readers create meaning through text (Tompkins, 1998). Harvey and Goudvis (2005) define reading comprehension as the thought generated while reading. Vacca and Vacca (2005) identify three levels of comprehension. The first and lowest level, literal, occurs as readers gain information explicitly from text. The second level, interpretive, is more challenging to readers than the literal level and involves the reader identifying relationships from within the information in the text and using the information to make inferences. The last and most challenging level is the applied level, in which the reader seeks relevancy or significance in the text read.

Tompkins (2001) views comprehension in a similar manner but in terms of subprocesses. Microprocesses occur when readers chunk ideas into phrases within a sentence. Integrative processes occur as readers infer relationships and connections by noticing pronoun substitution, inferring cause and effect. Macroprocesses are those that

organize and summarize ideas that are read. Elaborative processes are connections that cause readers to elaborate the author's message. Metacognitive processes monitor comprehension and use strategies to read more effectively (Tompkins). Reading processes are automatic for experienced readers (Rosenblatt, 1994). In adolescence, literacy development should be the expansion and application of the literacy foundations taught in elementary school (ODE, 1999).

2.2 Reading Instruction

Educators are not afforded coherent curriculum with which to teach and remediate reading. The IRA (2002), in their position statement of evidenced-based reading instruction, purports that there is “no single instructional program or method that is effective in teaching all children to read” (p. 232) and recommends the implementation of “evidenced-based practices” (p. 232). It defines evidenced-based reading instruction as a specific program or set of instructional practices that have a record of success, which are objective, valid, reliable, systematic, and refereed or reviewed. The program or instructional approach should provide systematic and explicit instruction for achievement strategies, be flexible so a range of learners will benefit, and include high-quality literary materials that are on multiple levels of difficulty to meet students' needs and interests (Alvermann, 2005a; Ambe, 2007; Combs, 1997; IRA; NCTE, n.d.; Richek et al., 2002; Tompkins, 2001). Unfortunately the IRA fails to identify curriculum that meets these criteria. Its recommendations are general and subject to interpretation when attempting to meet the literacy needs of students. In addition, their recommendations fail to provide coherent and empirically based curriculum with which to teach reading. The consideration of how to best teach and assess reading “is a complex part of education”

(Hawes & Plourde, 2005, p. 50). Literacy instruction should provide an opportunity for students to use prior knowledge to facilitate learning new content in a supportive classroom (Alvermann, 2005a).

Although controversial, one of the more common methodologies for teaching emergent readers is whole-language. Whole-language is literature-based instruction that includes immersion of students in a variety of literacy activities (Ambruster & Osborn, 2001; Lapp & Flood, 2005; ODE 1999). Routman (1996) defines whole-language as the use of language in literacy and cognition or the use of language in learning. Whole language classrooms are those where the responsibility of learning is shared by teacher and students through the use of collaboration. In her discussion of phonics, Routman uses the terms *decoding skills* and '*sounding it out*' to define phonics but fails to exemplify either term.

The other common methodology for teaching emergent readers is through a basal text. Basal texts emphasize either high frequency words or phonetically regular words that are easy to decode (Burns, 1999). The focus of this approach is on comprehension through the use of predictable stories (Allington and Cunningham, 1996); the stories become progressively harder throughout the book.

Despite the application of either phonics or basal methodology, teachers assume a critical role in the effective teaching of literacy (Burns, 1999; Hoffman, 1991). They organize and manage the instructional environment to maximize student engagement in learning and present content in a way that promotes learning. Teachers have numerous practices to incorporate into their instruction and may elect to have students read independently and ask for assistance when needed (Lapp & Flood, 2005; ODE 1999;

Rasinski, 2003). Having students read a selection aloud permits teachers to show students how stories and books are structured (ODE). One classroom option is for guided instruction in which students read aloud and the teacher facilitates learning by modeling needed knowledge and skills to help students develop these strategies on their own (Lapp & Flood; ODE; Rasinski). Another option is shared reading and writing, which occurs when students and teachers read and write together (ODE).

Repeated readings helps students become familiar with text, results in more fluent decoding, and helps readers spend more attention to comprehension (Rasinski, 2003). As students develop greater fluidity, they are able to transfer it to other texts. Rasinski includes several mediums for repeated readings, direct instruction, one-on-one with the teacher, partnered reading, small group reading, and reading with technology. Explicit teaching of strategies causes readers to pay attention to the different tasks in comprehension (Lapp & Flood, 2005).

Langer (2002) conducted qualitative research in several middle and high schools and identified three types of instruction: (a) separated instruction, the direct instruction of specific skills and knowledge; (b) simulated instruction, the application of the skills and knowledge taught in separated instruction in a specific application; and (c) integrated instruction, the application of separated instruction in a more general application. Langer argues that effective literacy instruction should encompass all three modes without one being more dominate than the others. Instruction should overtly include planning, organizing, completing and reflecting on the knowledge.

Reading strategies should depend on the text being taught and should either check for understanding, connect to prior knowledge, improve organization, promote independent

learning, or teach to learning style of the student (Sadler, 2005). Sadler recommends such strategies as read alouds, paraphrasing, directed reading, graphic organizers, teacher created questions on the text, journaling, illustrating.

When adolescents read aloud, there should be a specific purpose and an alternative method of assessing comprehension (Green, 2000). One technique for adolescent read alouds is rereading a text to answer a question and coined this procedure Rapid Retrieval of Information (RRI). Green recommends that students silently read a text before commencing RRI. A question is then asked and students must determine the section of the text needed to answer the question and once found, read the section to the class. The implementation of the RRI procedure thus involves rereading text.

Educators and theorists have suggested many other additional strategies to improve reading proficiency. To develop comprehension skills Flood and Lapp (2000), Lewin (2003), and Vacca and Vacca (1989), recommend strategies for before reading, during reading and after reading. Prereading includes using the text, pictures, and print to preview the text and evoke thoughts, memories, and prior knowledge. Self-questioning is used to further evoke prior knowledge, vocabulary, and the topic of the text. The final strategy of prereading is setting a purpose for reading the text (Flood & Lapp; Lewin). Prereading serves to activate prior knowledge, as a means to motivate readers, an opportunity to introduce vocabulary words and key concepts, and to develop an awareness of the tasks that will be assigned (Vacca & Vacca).

Strategies for reading involved periodic checks for understanding, use of context clues, imagination, inference, and predictions to monitor comprehension, and the integration of new information with existing knowledge (Flood & Lapp. 2000). Strategies

for reading should guide readers to search for and retrieve information so that thinking about the reading will occur (Vacca & Vacca, 1989). Reading strategies include reading and study guides and the identification of words that signal the structure of the text. Vacca and Vacca also recommend the use of graphic organizers to extract information from text.

Post-reading strategies involved summarizing or retelling the main idea, an evaluation of the ideas in the text, and applications of the information in the text to other situations (Flood & Lapp, 2000). The purpose of post-reading is to assist students in refining the concepts that emerged from the text as well as to reinforce and extend the ideas presented. Vacca and Vacca (1989) recommend the writing of summaries, taking notes as post-reading activities, creation of learning logs, freewriting, the writing of letters and poetry, and graphic organizers as post-reading activities.

Tompkins (2001) recommends that students read books just below their reading level for practice reading so students can automatically recognize most of the words and that teachers should provide two types of daily practice for students to read. Word identification and comprehension merged in the author's discussion of contextual information, which "helps students figure out the meaning of the word" (p. 241) and denotes six types of context clues. Her category of definition occurs as readers use the sentence to understand a word. Example-illustration involves the use of an illustration for word meaning. Contrasting or comparing an unknown word with contrast with known word creates meaning as does reading the entire sentence. Readers can use root words and affixes, and grammar to figure out meaning. Tompkins further notes that students need daily opportunities to learn vocabulary. For learning vocabulary, she recommends

that teachers provide an introduction to connect with prior knowledge, information about the word (root, related words), practice (supervised practice to use word), review, and apply the word(s).

As indicated from the recommendations by Green (2000), Lapp and Flood (2000), and Tompkins (2001) a number of theoretical studies have been published about reading instructional practices. A look at reading instruction for adolescents would probably show that many of these strategies are incorporated into classroom instruction. Yet, qualitative or empirical evidence to support these specific recommendations for classroom practice is minimal.

One qualitative study, conducted by Morris, Ervin, and Conrad (2000) investigated the improvement in the literacy level of one student with a learning disability through daily tutoring in the summer for a 14-day period. Support strategies incorporated into the reading instruction included guided reading, in which the tutor and student alternated reading pages and periodically checked comprehension, and homework that involved using a tape recorded chapter of text to practice reading. The student began each tutoring session by reading a passage that had been practiced the night before and discussing the content of the text. The tutor spent part of the session on vowel patterns, writing, and easy text that the student completed on his own without the assistance of a taped version. These procedures enabled the student to complete two chapter books within a four-week session of tutoring. The researchers felt that the student's self-perception as a reader changed, as did his self-confidence. When the school year resumed, the student was tutored one day per week with the same pattern of instruction used during the summer sessions. The student received 78 hours of tutoring over a two-year period. Although the

student did not reach his grade level in reading difficulty, he did recoup two years.

Despite this gap, Morris et al. conclude that “Even a child who has fallen 4 years behind in reading can make substantial progress if s/he received good instruction” (p. 18), but make this claim based on one student’s progress from an individualized intervention. The methodology used in this study, case study, limits the generalizability of the results.

Rasinski and Padak (2005) investigated the impact of fluency on adolescents. The participating 303 ninth grade students in a moderately urban high school read a brief passage that was analyzed for fluency; 97.4% of the words were decoded correctly even though 60% of the participants read below the lowest 25th percentile for eighth grade students. The authors conclude that reading fluency correlates with comprehension but is not the only cause of comprehension deficits among struggling adolescent readers.

Although the researchers recommend the importance of printed materials that can be read aloud and teacher modeling, they did not assess the impact of doing so.

Using the suggestions from the research does not guarantee that attempts at remediation for literacy discrepancies will be successful. One longitudinal study (Bentum & Aaron, 2003) found that placement in a reading resource room and the subsequent remedial instruction did not have a significant effect on reading scores in 394 primary aged children with learning disabilities. The participants spent five to 15 hours per week in the resource room where they received specialized instruction in groups of approximately six. Student data were collected from pre- and post test reading scores. Not all of the student participants were administered the same reading tests at the onset and conclusion of the data collection nor were the various reading tests used correlated for compatibility. Data collected from the teacher participants were through interviews

that occurred an unspecified amount of time after they had taught the student participants. Because the study was longitudinal, not all of the teachers who instructed the participating students were available; 17 teachers out of the original staff of 27 participated in this study. From the results of a two-way ANOVA comparing the pre- and post-test reading scores, the authors conclude that the amount of time participants spent in the resource room did not yield significant differences in reading score, whether the approach used was phonics or eclectic remediation (focus on student's learning style with both phonics-based and whole language instruction), and did not indicate any differences in reading scores. The authors also note that their results are consistent with other findings.

2.3 Reading Interventions

The use of reading specialists for purposes on providing remediation dates to the 1930s (Hull, 2004). Reading specialists were the precursors to resource room teachers, who provided more remediation to struggling readers in small groups outside of class; the title and responsibilities of resource room teachers changed to literacy coaches. Despite the title, the goal of reading specialists, resource teachers, and literacy coaches has been to facilitate remediation for struggling readers. The minimal improvement on reading scores reported in the *Nation's Report Card* (Lee et al., 2007) suggests that the successes of these professionals have been marginal at best. In response to the observed needs of struggling readers, individuals and corporations have developed reading strategies and programs.

Boget and Marcos (1997) offer different stages for which to address reading difficulties due to spatial impairment and impaired eye movement. The first stage in the

correction of reading with difficulties due to spatial impairment is to rehabilitate the reader's ability to perceive letters in isolation and recognize them by performing several tasks that include drawing the image of the letter in the air with the reader's eyes closed, writing the letter in a notebook, comparing the letter with others, and naming it. The second stage attempts to recover the ability to read syllables and letters by using letters written in different colors. The third stage addresses automatic reading in which the reader is given a time limit to understand a text; the time limits gradually decrease in length. For readers with impaired eye movement, Boget and Marcos recommend to first isolate the letter by framing it; the frame is adjusted for size as needed. The next step involves the reader following the line of text with a ruler. In the third step, the ruler is replaced by the finger of the reader. The implication of both rehabilitations is that they are done on a one-to-one basis, a rare opportunity for most struggling readers. The challenge to educators becomes how to provide this type of remediation for reading in well-populated classroom.

The recommendations presented by Boget and Marcos (1997) may be evident in the some remedial reading programs, yet these recommendations have not appeared in the research about reading. The research, however, does discuss a variety of remedial reading programs. Remedial programs can have different forms with the most popular being those that supplement the regular language arts classroom (Quirk & Schwaneflugel, 2004). Current remedial programs include for emergent readers include Ortin Gillingham, Phonological and Strategy Training, Reading Recovery, Early Steps, Direct Instructional System for Teaching and Remdiation (Quirk & Schwanenflugel), and Success for All (Allington & Cunningham, 1996). Reading Apprenticeship (Knapp & Winsor, 1998),

Dual-Text Initiative (Marnell & Hammond, 2005), and READ 180 (Scholastic, Inc., 2007) were designed for older students.

The Orton-Gillingham (OG) approach to reading is based on Samuel Orton's belief that students have the ability to translate the graphic presentation of a word to its spoken form (Orton, 1937 as cited in Ritchey & Goeke, 2006). It was later formulated in the 1960s by Anna Gillingham and Bessie Stillman (Ritchey & Goeke). The approach consists of systematic, sequential, multisensory, and phonics-based explicit instruction (Ritchey & Goeke). Instruction is based on assessment and individualized for each participating student and teaches the components of language which are taught cumulatively; students must obtain mastery on one component before learning new components. OG can be used in the primary mode of classroom instruction or as an intervention program. In a meta-analysis, Ritchey and Goeke found positive outcomes for OG and OG-based instruction in word reading, decoding, spelling, and comprehension. In elementary schools, OG was used as both the primary method for teaching reading in regular classrooms and as an intervention method for struggling readers, at-risk and learning disabled alike. In secondary education, OG was used in remedial classes and in college for the remediation of learning disabled students. The studies cited by Ritchey and Goeke indicate that outcomes span across various settings, age groups, and populations, but not all of the research presented indicates that OG instruction is an effective methodology.

Similar to OG, Phonological and Strategy Training (PHAST; Lovett, Lacerenza, and Bordon, 2000) is also a phonics-based reading program that provides strategies in an integrated developmental sequence. The objective for PHAST is to address the word

identification and decoding problems that children with severe disabilities often face. Lasting over 70 hours, this program uses direct instruction to increase metacognitive strategies for reading and focuses on the remediation of phonological awareness, letter-sound relationships, and word identification strategies. PHAST was developed out of two earlier approaches, Phonological Analysis and Blending/Direct Instruction Program (PHAB/DI) and the Word Identification Strategy Training Program (WIST). The hypothesis for PHAST was combination of PHAB/DI and WIST would provide disabled readers with superior intervention than either program alone while fostering greater generalization skills for different contexts. PHAB/DI is a series of lessons developed by Englemann and his colleagues that addresses phonemic awareness and subsyllabic segmentation discrepancies through an intense phonological training as well as through the direct instruction of letter-sound correspondences (Lovett et al.; Lovett & Steinbach, 1997). The program focuses on letter-sound units. WIST teaches readers how to apply four metacognitive decoding strategies and focuses on new word identification skills. PHAST incorporates the phonological remediation of PHAB/DI into the four strategies of WIST; readers are taught strategies for phonological letter-sound decoding, word identification-by-analogy, separation of affixes in multisyllabic words, variable vowel pronunciations, and to use familiar parts of unfamiliar words (Lovett et al.). Throughout the learning of these strategies, readers are only taught new skills after they demonstrate that the prerequisite skills have been attained.

The use of PHAST is recommended for children with developmental reading disabilities (children who experience difficulty in acquiring reading, spelling, and writing skills but who are intelligent) and is appropriate “to the needs of the average and

precocious reading in the early elementary years and could be offered to an entire class as one part of an integrated, systematic program of reading, spelling, and writing instruction” (Lovett & Steinbach, 1997, p. 189). The researchers recommend a teacher-student ratio ranging from 1:4 to 1:8. PHAST provides similar instruction for all students in small groups (Quirk & Schwanenflugel, 2004).

Of all of the reading intervention programs in use within the United States, Reading Recovery (RR) is the most studied (Morris, Tyner, & Perney, 2000). Strategies for fluency in reading, writing, and spelling were built into RR by its creator Marie Clay (Kepron, 1998). The advantages of this program include: (a) early intervention that prevents initial weaknesses from becoming ingrained; (b) the setting of appropriate goals for the student; (c) instruction based on an analysis of each students’ individual needs; (d) the use of text that is written in natural language; (e) attention to phonic awareness during reading, writing, and spelling; (f) the use of familiar text to generate fluency; and (g) the use of writing to teach reading, writing, and spelling skills (Kepron).

RR follows a tutorial model of individual instruction (Shanahan & Barr, 1995). Students considered to be the most at risk are selected for RR (Shanahan & Barr) based on teacher recommendations (D’Agostino & Murphy, 2004). RR sessions require that a young student meets with a teacher for 30 minutes of individualized instruction (Horner & O’Connor, 2007; Kepron, 1998; Quirk & Schwanenflugel, 2004; Shanahan & Barr; Spiegel, 1995). Each session begins with the student reading text that had been previously read accurately in earlier sessions (Horner & O’Connor; Kepron; Quirk & Schwanenflugel; Spiegel). The student then reads a text from the immediately preceding session and is aided, when needed, by the teacher for fluency and the use of appropriate

reading strategies. In the next part of the session, the student writes sentences, short stories, or takes dictation from the teacher. The writing is cut into pieces and given to the student to reassemble. The last part of the session involves the introduction of a new book that is then read. At any point during the session, the student may study specific letters and words. The material read may be sent home for additional practice (Kepron). During each session, the teacher completes a running record of miscues that are used to create subsequent lessons. Lessons focus on strategic activities rather than isolated items and use explicit instruction, modeling, prompting, and praising (Hornor & O'Connor).

Despite the numerous studies about this program, research indicates questions about the effectiveness of RR (D'Agostino & Murphy, 2004). The sample selection, sample attrition, the lack of equivalent comparison groups, and the problems with accurately measuring first grade students' achievement levels confound the impact this program makes on literacy acquisition.

Early Steps (ES) emphasizes contextual reading and writing and shares many of the components of RR (Morris, Tyner, & Perney, 2000; Quirk & Schwanenflugel, 2004). This program requires the early identification of problems readers, involves daily 30 minute sessions of one-to-one tutoring, and careful and year-long teacher training. The focus of this program is the direct and systematic study of orthographic patterns by readers (Morris et al.). Each daily lesson contains the study of letter sounds and spelling patterns. The word study is matched with each student's level of orthographic knowledge and isolated from meaningful context to allow the reader to attune to the patterns under study. After the patterns are learned, they are practiced and internalized. The books used

in ES are graded in difficulty and contain different types of text that include predictable, sight words, and natural language (Morris et al.).

Unlike RR, Morris et al. (2000) consider ES to be balanced reading instruction in which lesson parts are integrated. The four segments of the ES lessons are rereading books, word study, sentence writing, and reading a new book. An ES session contains 15 to 20 minutes of reading leveled texts at or slightly higher than the reader's level that includes strategies, five to six minutes of work study for decoding strategies, and several minutes of writing in which students apply the strategies learned (Quirk & Schwanenflugel, 2004). Two studies, Morris et al, and Santa and Høien (1999 as cited in Morris et al.) indicate that ES is effective for first-grade students. No longitudinal research has yet been conducted to measure the sustainability of the effect of ES.

The Direct Instructional System for Teaching and Remediation (DISTAR) combines oral language practice with direct instruction (Sexton, 1989). It focuses on rate and accuracy to facilitate language patterns within reading. The reader repeats sentence patterns that vary from what is normally used by the reader and practices the grammar and vocabulary orally. This instructional model assumes that all children can be taught, intervention programs must focus on the development of basic skills as well as their application, disadvantaged students should be taught in an accelerated rate (Englemann, Becker, Carnine, & Gersten as cited in Quirk & Schwanenflugel, 2004). With DISTAR instruction, phonics is emphasized, and skills are taught in isolation of each other (Traweek & Berninger, 1997).

The DISTAR methodology involves instructional sequencing, scripted lesson plans, and group responses for assessment of the reading of sounds and words; this approach

provides explicit instruction about letter-sound correspondences and sound blending (Traweek & Berninger, 1997). The instruction of DISTAR involves the teacher presenting information to a small number of students and the students repeating it. The teacher asks questions about the information. If the responses are incorrect, the teacher provides the correct response and reteaches the information. If the student responses are correct, the teacher proceeds with the next material to be learned (Sexton, 1989). The use of DISTAR methodology was found to be more effective than a basal reading program (Sexton).

The Success for All (SFA) reading program was originally implemented in an inner city school (Allington & Cunningham, 1996). The goal of the SFA is for students to read on grade level by the end of the third grade school year. Beginning in preschool or kindergarten, SFA emphasizes the development and use of language. Selected students participate in a 90 minute block of instruction with three activities, a listening-comprehension lesson designed to develop comprehension skills, a shared story reading, and decoding instruction. Students receive a daily writing/language arts activity using the prewriting, writing, and revision. The progress of students is measured quarterly; the number of students recommended for receiving SFA is limited to 15 per instructional group (Allington & Cunningham). Although Allington and Cunningham note that “Initial results for the SRA schools are encouraging” (p. 31), it is not widely utilized in schools.

Although many of these programs have been shown to be successful, DISTAR, PHAST, and SFA are administered in small groups while RR is administered on a one-to-one basis. Lessons taught on a one-to-one basis or in small groups reduce competition and public displays of reading (Quirk & Schwanenflugel, 2004). These programs do not

address the value in becoming a more proficient reader or help students establish reading goals, teach them to monitor their progress, or help them see how their actions contribute to their successes. Nor are these programs implemented for older students.

The formation for Reading Apprenticeship (RA) began as a researcher's personal attempt to increase the reading proficiency of her elementary school age child (Knapp & Winsor, 1998). Based on the nuances of meaning of the word *apprenticeship* Knapp and Winsor posit that an adult or older child read a reader-chosen book with a struggling reader, help with the decoding of difficult words, and provide explanations of difficult passages. In the first step of the apprenticeship, the participant reads the words with which she is familiar. Next, in the second step, the participant and adult alternate reading lines and paragraphs. The adult models word identification and fluent expressive reading while the apprentice follows in the text. When the apprentice reads in this step, the tutor points out phonetic regularities, offers assistance in decoding, and provides explanations of the text (Knapp & Winsor).

Using a sample of nine elementary school students, who were designated as delayed readers, Knapp and Winsor (1998) met with students three times per week for 30-45 minutes per time for 10 weeks; one participant left the study. Participants selected low-level, high interest trade books of their choice from the researchers or the school library and were allowed to discontinue reading a book when their interest in the books waned. A comparison of pre-and post-RA indicates that participants using RA increased comprehension proficiency greater than the members in a control group. The researchers conclude that RA provides a model of expert reading, promotes independent reading, and reduces fatigue caused by the effort required to read. Although Knapp and Winsor

conducted their research on elementary school students, Greenleaf (2001) posits that RA would be successful for secondary students as well.

Several formal reading programs have been implemented in high schools for students reading below grade level (Flood & Anders, 2005; Hammond, Hoover, and Phail, 2005). The Dual-Text Reading Initiative, introduced in 1998, focused on teachers and combined information about student performance, reading strategies, and student motivation and stressed the practice of “*teaching for understanding*” (Marnell & Hammond, 2005). It combines meaningful information about student performance, scientifically based reading strategies, and teacher training on student motivation. The pedagogy incorporates coaching, prompting, and meaningful and immediate feedback and has the goal of students retaining information, understanding topics, and actively using knowledge to learn how to learn. Teachers provide the guidance and direction for learning. The implementation of this program was different in each of the four piloting classrooms and included vocabulary building followed by writing instruction. Another approach was to use abridged versions of text for struggling readers. All participating teachers were taught specific learning strategies to pass on to students. The Dual-Text Reading Initiative was discontinued after only one year due to other systemic initiatives despite measured gains in participants’ reading levels (Marnell & Hammond).

A different and standardized intervention program used by one of the participating inner ring suburban school districts is entitled READ 180 and produced by Scholastic, Inc. (2007). READ 180 incorporates many of the recommended practices for reading instruction, theoretical, qualitative, and quantitative alike. The foundation of READ 180 is the 90-minute model in which students receive a 20 minute session of whole group

instruction, 60 minutes of small-group rotations that include 20 minutes each of small-group direct instruction, independent work using the READ 180 software, and practice of reading and writing; the lesson concludes with more minutes of whole group instruction. The most unique feature of READ 180 program is its software. Students can select one of four zones for instruction: reading, word, spelling, and success. Upon entering the reading zone, students can watch a short video designed to motivate students and provide them with the required background. Students will be then given an option of four different levels of passages to read along at student-selected speeds. Following the reading session, students will answer questions related to the reading and vocabulary. Students receive instruction in decoding and word recognition in the word zone. The spelling zone permits students to practice spelling. Upon successfully completing these three zones, the student can select the success zone where they apply the acquired comprehension strategies to modified versions of a passage and make an audio recording of their reading of the passage. Various districts around the United States reported student improvement with exposure to READ 180 (Brooks, 2004; DeForge, 2005; El Paso Time, 2006; Ingersoll, 2005; Kabbany, 2007; Karlin, 2005; Lewin, 2004; Myrtle Beach Sun News, 2005; Pinzur, 2005; Roberts, 2006; Robinson, 2005; Thrasher, 2004; Uhlig, 2005). Despite the successes reported, not all students enrolled in READ 180 experienced large increases in reading proficiency (Feldman, 2008).

The reading programs are summarized in Table II. Despite the reported success for programs such as READ 180, Ambruster and Osborn (2001) purport “While there are no

Table II

The Focus, Methodology, Target Population, and Effectiveness in Reading Programs

Program	Focus	Methodology	Target Population*	Effectiveness
Ortin Gillingham	Phonics	Multisensory, Systemic	Beginning through college	Variable
PHAST	Phonics	Scripted lessons	Developmentally disabled	Variable
Reading Recovery	Phonics, spelling, writing	Individual lessons	Early readers	Questionable
Early Steps	Orthographic patters	Tutoring sessions	Early readers	Effective (in two studies)
DISTAR	Basic literacy skills	Scripted lessons	Early readers	Variable
Success for All	Listening, shared reading, decoding	One-on-one	Beginning readers	Encouraging
Reading Apprenticeship	Decoding, explanations of text	One-on-one	Older elementary	Effective
Dual-Text	Reading strategies	Guided reading	Secondary	Effective, but discontinued
READ 180	Motivation, spelling	Computer, individual, small group, and class	Secondary	Some success but questionable

* Beginning readers are children entering school in kindergarten to first grade; early readers are in the second and third grades; older elementary are fourth and fifth; secondary includes sixth through high school graduation.

easy answers or quick solutions for optimizing reading achievement, an extensive knowledge base now exists to show us the skills children must learn in order to read well.” (p. *ii*). Allington and Cunningham (1996) concur that no one approach to literacy will be effective for all students. The focus of secondary reading instruction and intervention programs has historically been on the remediation of perceived reading deficits and inconsistent.

In a survey of 737 principals, reading specialists, teachers, and curriculum directors, Barry (2000) found little consistency in secondary reading programs utilized within 48 states. Sixty-seven percent of the respondents said that they have a program for secondary students who experience reading difficulties and 17% reported that reading assistance programs were part of the special education program. Eleven percent of the respondents reported their high school does not provide reading instruction to struggling readers but 9% of that group indicated that classroom teachers attempted to accommodate struggling readers with creative lesson plans, hands-on experiences, individual instruction, alternative assessments, team-teaching, extra help, tape recordings, guided readings, small classes, peer tutors, and cooperative learning. What reading assistance existed in the respondents’ school tended to be available across multiple grades and over half of the reported programs in all high school grades (Barry). The most common form of remedial reading programs is the supplemental to regular English courses (Quirk & Schwanenflugel, 2004).

What works in reading is dynamic and fluid continually needs to be reviewed and assessed through research (Ambruster & Osborn, 2001). The potential impact of writing

on reading as a means of remediation has largely been ignored even though writing “is an approach that lets children figure out reading” (Allington & Cunningham, p. 57).

2.4 Reading Assessments

The measurement of students’ growth in reading should be based on authentic assessment in which the assessment selected is related to instructional methods and practices (ODE, 1999) or through the use of a variety of assessment approaches (Ediger, 1999; Vacca & Vacca, 1989). Few reading assessments for secondary students follow this suggestion; assessments for this age group tend to involve standardized testing.

Standardized reading tests tend to measure vocabulary, comprehension, and phonics (Ediger). Standardized tests are often referred to as norm referenced tests in which students are compared with each other (Ediger, Vacca & Vacca). Norm referenced tests assume students have access to the same or similar curriculum. The scores for these tests may be given in percentile ranks, standard deviations, and stanine scores as well as in the mean, median, and mode (Ediger; Vacca & Vacca).

Hoover, Politzer, and Taylor (2005) discuss the bias in tests experienced by different socioeconomic, cultural, and ethnic groups and the resulting differences in language. Examples of why students incorrectly answer a question written in Standard English may be due to being unfamiliar with a word or concept, having a different interpretation of a key word or concept, or being confused due to a similar, but different, word or concept. The authors compound the linguistic biases with that of political bias (such as state mandated tests required for graduation), which places one group of students at a disadvantage to another. Citing the research of Carroll and Freedle (1972), Hoover et al. discuss genre bias of tests. For example, the Stanford Achievement Test has a

comprehension score measured by sound discrimination, compound words, endings, contractions, and same-word-multiple-meanings rather than comprehension-specific means. The article concludes with recommendations for a culturally fair test that are based on validity as a first consideration and provides two examples. The first example of a fair test is the Gates-MacGinitie, which uses two formats and the second is the Nairobi Method, which provides questions to measure comprehension from simple recall rather than questions that have inference formats (Hoover et al.).

By creating an alternative form of the Stanford Diagnostic Reading Test, Thurmond (1977) attempted to measure achievement differences on Black and White high school students using two forms of the this test. Black Vernacular English (BVE) differences from Standard English include verbal usage, possessive markers for nouns and pronouns, and negation while pronunciation and vocabulary differences are minimal (Crowell & Kolba, 1974). In addition, other BVE differences to Standard English include past tense irregularities, copula absences, double modals, and absence of subject-verb agreement (Labov, 1995). Labov notes linguistic sources of reading problems for BVE speakers that consist of sound/spelling relationships, reduction of final constants, glides for specific letters, and mergers of vowel sounds. When assessed, BVE speakers face test bias due to lexicon, syntax, and phonology (Hoover et al.) which produce lower scores on reading tests. One form was administered as originally written and the other was modified by the Thurmond and her personal knowledge to match the dialect of Black students spoken in a Southern urban community. The modified version incorporated 11 patterns of dialectal English and four patterns of Standard English; the directions for this version were changed from Standard English to dialectal English. Black students who completed the

modified version achieved higher test scores than Black students who completed the original version of the test. White students did equally well on both versions of the test. The scores of the White students administered the original test and Black students administered the modified test were not significantly different, but the scores of the White students were significantly higher than those of Black students on the original version (Thurmond).

Developed privately by Scholastic, Inc. (2006), the Scholastic Reading Inventory (SRI) was field-tested with 879 third, fourth, fifth, and seventh grade students in North Carolina and Florida schools. The results of the SRI were correlated with and validated by other reading assessments for comprehension: Comprehensive Test of Basic Skills, the North Carolina End-of-Grade Test of Reading Comprehension, and the Pinellas Instructional Assessment Program. Drawing from an item bank of over 4,500 questions, the SRI assesses that skills required in comprehension, which include making inferences, forming conclusions, and understanding vocabulary. Students use a fill-in-the-blank format for multiple choice questions they will answer (Scholastic, Inc.). The passages included in the SRI are extracted from reading text students may find both in and out of school and include young adult literature selections, newspapers, and magazines (Scholastic, Inc.).

Scores from the SRI are reported in lexiles (Scholastic, Inc., 2006); lexiles are determined by the analysis of a 125-word section of a text measured for syntactic complexity (the length of the sentence) and semantic difficulty (word frequency). Each 125-word section from the text measures are compared and ranked in order of numeric score. Lexile scores range from 200 to 1700. One goal of the SRI is to match reader

lexile level with the lexile level of reading material. Another goal is to measure student progress in reading improvement. Scholastic, Inc. reports that scores on the SRI will improve if sufficient time lapses between administrations of the SRI, and each SRI score is higher after a subsequent year of school. The results of each administration measures students' knowledge and skills and does not compare students with a normative group.

2.5 The Connection Between Reading and Writing

In 1892, 10 “prestigious gentlemen” (Ohmann, 1986, p. 12) were appointed by the National Educational Association to determine what curriculum should be offered in secondary school. Finding the schools in chaos, they advocated the unity of reading and writing. Despite their recommendations, separate curricula, instructional materials, and assessments have been historically used by educators for reading and writing (Collins, 1990; Fitzgerald & Shanahan, 2000).

Reading and writing are “complex symbolic activities, incorporating the linguistic and interactional aspects of language as well as the conceptual and interpretive uses of knowledge” (Langer, 1986) and require the use of similar mental or cognitive operations to process information (Langer; Lewin, 2003; Rosenblatt, 1994; Shanahan & Tierney, 1990; Tierney & Pearson, 1983; Wittrock, 1983). The first of these three mental operations is the knowledge-shared process. This process includes phonemic awareness, word recognition, vocabulary, text organization, and syntax. The second perspective is communication, how writers anticipate the needs of their readers and how readers use their knowledge about authors to enhance comprehension. Communication is a negotiation between readers and writers that is dependent on goals, intentions, and circumstances. The third perspective is the collaborative uses of reading and writing

found in many activities. The activities involved in reading and writing require various types of thinking or reasoning that include learning from text, analysis of text, composition revision, and writing across the curriculum (Fearn & Farnan, 2001; Rosenblatt, Shanahan & Tierney). Shanahan and Tierney warn that the collaborative uses of reading and writing are largely situational, and the research upon which they draw their conclusions does not specify the context.

Langer (1986) notes the common behaviors in reading and writing. Readers and writers focus their attention of the ideas or schemata in the text. In her observations of 67 elementary, middle, and high school children, 43% of the remarks made by the participants involved the use of schemata. A second common behavior in reading and writing is monitoring, which is a check for meaning and a signal for confusion. Monitoring also serves to help readers and writers become aware of their cognitive activities and use specific strategies to “develop, organize, and transform their ideas” (Langer, p. 83). Langer identified four common strategies her participants used for reading and writing; generating ideas, formulating meaning, evaluating, and revising. The generation of ideas helps the reader/writer become aware of relevant ideas and plan and organize the material. The formulation of meaning is the development of the message and linking of concepts. Evaluation involves reviewing, reacting, and monitoring the development of understanding. Revision is the reconsidering and restructuring of the material. The cognitive strategies used in reading and writing had a “strong” (Langer, p. 133) correlation. As readers and writers mature, they use a greater number of behaviors and strategies.

In a longitudinal study of 10 years and with over 200 participants, Loban (1964) investigated the relationship between reading and writing. Samples of reading and writing were provided by teachers each year after the participants reached third grade. Participants were given a picture and asked to write about it. Their responses were evaluated by two teachers using a five-point rubric; when the teachers disagreed on a score, a third scorer evaluated the writing product. Beginning in grade four and continuing annual for the duration of the study, participants were administered the Stanford and California Achievement Tests in Reading. Loban correlated the results of the reading and writing measures, and found that participants who wrote at a “Superior level and the great majority who write at a High Average level read above their chronological age” (p. 80), while all participants who wrote at an illiterate or marginal level read below their chronological ages. Loban concludes that “the relation between reading and writing seems so striking as to be beyond question” (p. 82).

Shanahan (1990) posits that reading and writing are tools for learning and thinking and are both social activities that can be extended for problem solving. Classroom instruction that combines reading and writing influences the impact of learning outcomes through a focus on knowledge and shared processes. Shanahan and Tierney (1990) note that the correlation of knowledge between reading and writing is less than .60 with reading and writing measures explaining 30-40% of variance in each other. They posit that writing anticipates the needs of the potential readers, and readers use their thoughts about authors to improve their reading comprehension.

Fitzgerald (1990) created a model that shows the connection between a reader, a writer, and a text with sentiments, knowledge, and skills impacting the reader and writer.

Sentiments include the disposition of the reader and writer. Readers and writers (or “authors”, p. 87) seek knowledge through the creation of meaning. Skills are weakly defined as the ability to negotiate the universe (knowledge). Fitzgerald offers suggestions for promoting the interaction with text: (a) group conferences; (b) revising text from another perspective; and (c) using reading and writing to role-play.

More classroom time spent on writing activities “would help out with an important and vexing problem in the teaching of reading itself” (Elbow, 1993, p. 14). Writing allows students to make connections with a piece of text by placing the student in a position to respond to some element of text, fiction or nonfiction alike, regardless of ethnicity or social class. Students learn from writing (Elbow). Experiences in writing permit students the opportunity to witness how written meaning is developed through thinking and for the creation of trial text, for revision, and for social negotiation with peers and teachers. When writing, students actively construct meaning and practice the dialect of Standard English (Delpit, 1997), which will aid students when faced with reading material. Students who do not read a lot benefit from the explicit instruction given in writing lessons (Salinger, 2003). Lessons on the mechanics of language and text structure can be also beneficial to struggling readers when offered through discussion, direct instruction, and activities that allow practice. The edit and revision of writing applies comprehension skills and, while a form of reading, is a dynamic and interactive activity (Elbow, Salinger).

Educators who teach “writing must automatically and always teach reading” (Lunsford, 1978, p. 49). In Lunsford’s study of 92 college students with low scores on their American College Testing (ACT), English tests were randomly selected to

participate. On a high school background questionnaire, one third of the participants reported they did not read at all in high school, the average response indicated that participants read less than seven hours per week, and three participants reported receiving remediation for reading in high school. Participants were administered the reading test from the McGraw Hill Basic Skills Series; the passages from the test were coded to measure syntactic maturity (number of words in sentences and paragraphs). Writing products of participants were obtained throughout the semester and measured for syntactic maturity. The results indicate that remedial writers are poor readers with low levels of syntactic maturity and a high frequency of error. In the nine weeks of remediation, participants demonstrated gains in both writing and reading proficiency. Although Lunsford does not specify what statistical procedures she used to obtain her results, the inference is that she used correlation (Collins, 1990).

Although various studies that discuss the reading/writing connection exist (Fisher & Frey, 2003; Fitzgerald, 1990; Shanahan, 1990; Tierney & Pearson, 1983), few, like Lunsford (1978), empirically attempt to measure the relationship. Using 186 college students enrolled in a freshman composition of remedial writing course Grobe and Grobe (1977), found a significant relationship between reading skills and writing ability. Sovik, Samuelstuen, Svara, and Lie (1996) found a correlation between writing time and reading comprehension, reading errors, reading skill, and spelling on the results of 10 reading and writing tests administered to Norwegian children. In attempt to empirically measure the relationship between reading and writing, Chan, Ho, Tsang, Lee, and Chung (2006) analyzed nine cognitive tests administered to Chinese dyslexic and non-dyslexic children. They conclude that orthographic knowledge, naming speed, and phonological memory

were significant predictors of both reading and writing. This study does not, however, specifically define the contribution writing makes to reading or the contribution reading makes to writing.

Shanahan (1984) posits that multivariate procedures should be used to permit the relationships of the multiple components of reading and writing to be considered simultaneously due to the collinearity between reading and writing measures. In a study to explore the multivariate relationship between reading and writing, Shanahan collected data on 256 second and 251 fifth grade students who were administered the Phonetic Analysis Test of the Stanford Diagnostic Reading Tests, Gates MacGinite Reading Comprehension Tests, Vocabulary Test of the Stanford Diagnostic Reading Tests (for second grade participants) and the Vocabulary Test of the Gates MacGinite (for fifth grade participants). Two writing samples from prompts were obtained from each participant and combined through mean *t*-unit for the average number of words per independent clause, assessment of the different types of vocabulary words, and assessment of organizational structure. A canonical analysis was used to identify linear relationships to extract the principal components from each set of variables. The main difference between the two age groups was the greater increase of vocabulary in reading contributions for the fifth grade participants. Data from each grade of participants were further analyzed to control changes in the relationship between reading and writing due to learning and instruction. The results of the canonical analysis for second grade participants indicate that the contribution of spelling and phonics contribute to the reading-writing relationship and, for the fifth grade participants, indicate that the reading-writing relationship changes with comprehension contributing to more of the variance

explanation than for second grade participants with a decline in the contribution of phonics. The results further indicate that reading and writing explain 43% of the variance in the other with these measures (Shanahan).

The program analyzed in Wooten and Cullinan's (2004) qualitative work taught urban students how to connect to literature through writing using a constructivist approach. This approach requires readers to utilize their background experience to the act of reading as they combine what they know with what they read. The three principles to this program are reading aloud literature, responding to literature, and metacognition (reflecting on learning), with time allotted for reflecting, elaborating, questioning, and constructing meaning. The process for this strategy has two tiers. The first tier is conducted a minimum of once per week and involves the reading of literature and having students respond to the selection on a small Post-It note that is shared with the class. The students classify the comment and place it on a larger sheet of paper under the correct heading. The second tier is conducted far less often, two or three times per year and involves students organizing their responses by category on a chart. The authors recommend this type of connecting reading with writing for urban learners.

The purpose of Weber's (1990) study was to enhance the linguistic knowledge and processing to determine sources of struggling readers' verbal weaknesses and the deficit in their reading ability through composition. The participants were 32 fourth grade students from "advantaged backgrounds" (Weber, p. 297). Half of the students scored at the 50% percentile or above and half at the 10% percentile or below on the Gilmore Oral Reading Test. After viewing a cartoon strip, students were asked to verbally construct a narrative. The units of measure were the number of words per story and a holistic score

for plot, coherence, and expression. The results indicated that the length of the narratives were comparable for good and poor readers. The holistic score indicated a difference between the two groups. Weber concluded that the weaknesses in constructing a narrative may be from the same linguistic deficits that limit reading.

Shell, Colvin, and Bruning (1995) relied on a state reading test for measurement of the achievement level differences in self-efficacy (self-confidence in organizing and implementing cognitive, behavior, and social skills), casual attributions (self-judgments about causality for success of failure), and outcome expectancy (the expectation a behavior will results in a specific outcome) beliefs in reading the writing between three ages of students. This mixed-method, cross-sectional study examined interactions between grade level and achievement and compared beliefs and achievement across grade and achievement levels. The participants in this study were 105 fourth graders, 111 seventh graders, and 148 tenth graders who where predominately White and from middle class families.² The data were collected in the fourth grade classroom and the other two grade students in their respective homerooms. Self-efficacy and outcome expectancy were measured by instruments adapted from Shell et al. and causal attributions that were measured though participants' answers on a five-point scale. Reading achievement was measured by the California Achievement Tests; writing tests were developed and scored by the researcher. The study concludes that by junior high, children have developed consistent perceptions of causality and outcome expectancy that do not change in high school, self-efficacy beliefs are linked to achievement and achievement levels, and effort

² No other demographic information is described in this study.

is regarded as a cause for success in writing; the causes for success in reading were not addressed.

Despite the results of the research examining the reading and writing relationship, Tierney (1990) notes differences between reading and writing. Based on his own previous research, Tierney provides a discussion of how text recall is not a text read but a meaning created by the reader. He views reading as a “situation-based or social accomplishment” (p. 134) and compares reading with listening and speaking. The amount and type of thinking associated with reading is different than that of writing. He concludes with the warning that reading and writing when done in conjunction with each other can either constrain or promote creativity.

2.6 Writing

Writing is more than the physical act of forming words. It is a way of learning (Williams, 1989) and problem-solving (Lindemann, 1995; NCTE, 2004) that involves determining meaning and then assigning words to that meaning (Elbow, 1973). The NCTE views writing as a “tool for thinking” (p. 3). It is a “process of communication that uses a conventional graphic system to convey a message to a reader” (Lindemann, p. 11). Vygotsky (1978) delineates between the mechanics of writing and written language that “consists of a system of signs that designate the sound and words of spoken language, which, in turn, are signs for real entities and relations” (p. 106). The principle that writing cannot be isolated from the social context of the writer also considers the impact of the culture of the home has on the culture of the school of which writing is a part (Schultz & Fecho, 2000; Vygotsky, 1962). The social context focus on writing considers the writer’s history, culture, the social world in which the writing is occurring, the writer’s

interactions with the teacher, and the curriculum experienced in the classroom (Dyson, 1990; Hicks, 1996). It also includes the social identity, purpose, and goals of the writer. The authors further posit that writing development is a part of the classroom culture (Freedman, 1994).

Various other aspects of writing have been studied. The research question addressed in De La Paz's (2005) quantitative study was the effectiveness of an integrated social studies and English program on writing. The study investigated the impact of subject integration on students' historical reasoning and the resulting persuasive essays. The experiment was conducted in a suburban middle school in northern California with a diverse student population, 43% Asian, 20% Caucasian, 18% Filipino, 13% Hispanic, 3% African American, and 3% Pacific Islander; approximately 15% were eligible for free or reduced lunch. The 133 participants were divided into an experimental group of 70 eighth grade students and control group of 63. Participants completed a pretest and posttest essays on controversial historical events before and after mastery of content and writing strategies. The control group was assessed on the posttest of the experimental group and did not include any students receiving special education services. Participants in the control group were screened by Wechsler Individual Achievement Test and met several predetermined criteria as proficient writers. Experimental group content activities included modeling (for both content and writing), participant collaboration, a mock trial, and active questioning. The historical instruction lasted 12 days and the writing instruction 10. The scoring of the essays included length, persuasiveness, arguments, and accuracy. The results indicated that students in the experimental group wrote longer

papers and had significantly better quality, more arguments and historical accuracy, than the control group (De La Paz).

The definition of the quality of writing was studied by Grisham and Wolsey (2005) who investigated the processes used by students in varying stages of their education to evaluate writing. Three groups of participants were used. The first group consisted of eighth-grade students from three classes and contained a total of 95 students who attended a suburban school in southern California and had the demographics of 74% white, 18% Hispanic, 5% African American, and 3% Asian. The second group of participants was 10 post-baccalaureate students seeking a single secondary subject teaching credential who volunteered to participate during one class.³ The third group of participants was comprised of 38 veteran teachers in a graduate Reading/Language Arts Master of Arts program at a large public university in Southern California. The study was conducted on the respective academic sites and investigated how students, preservice teachers, and teachers define good writing and analyze students writing samples. Participants defined the elements of good writing and recorded their lists. Using the constructed lists, participants scored the same set of papers and provided a rationale for their score. The authors found that the three groups were consistent in their lists and scoring and conclude that recognizing the qualities of good writing precedes the ability to write well.

How students' gender affected their feeling about their writing was studied by Pajares and Valiante (1999). Their research addressed two research questions, the predictive role of writing self-efficacy and the assessment of gender differences in writing confidence.

³ No other demographic information is described in this study.

The participants were middle school students (grades six through eight) who attended a predominately White public school in the South. The authors defined writing self-efficacy as the confidence students felt they possessed in the composition, grammar, usage, and mechanical skills appropriate to their grade level as measured on the Writing Skills Self-Efficacy Scale as well as the Marsh's Academic Self-Description Questionnaire. Pajares and Valiante used multiple regressions to determine that previous achievement in writing and self-efficacy were predictors of writing competence; gender was insignificant. Despite these findings, students felt that girls were stronger writers than boys.

Rather than consider gender, the research question under consideration in a study by Okamura and Shaw (2000) was the effect of culture, subculture, and language on discourse. The participants were Native Speakers of English (NSEs) and Non-Native Speakers of English (NNSEs). These groups were further divided up into groups of active academic researchers and nonprofessionals. The professional group contained 26 NSEs and 23 NNSEs; the non-professional group had 21 NSEs (British undergraduate students) and 23 NNSEs (teachers of English with European cultural backgrounds). The researchers compared the content and form of business letters written by the various groups. The letters considered from the professional groups were selected from correspondence with an editor of a technical journal. The non-professional groups were asked to compose a letter to a professional journal. A comparison of letters showed that professional letters conformed to standard letter writing conventions and that no significant differences were observed between professional NSEs and NNSEs. The

authors conclude that knowledge of this genre is the result of subculture knowledge regardless of native language spoken.

The studies that investigate different facets of writing utilized different genres of writing. Grisham and Wolsey (2005) and Pajares and Valiante (1999) used students' essays. Okamura and Shaw (2000) used business letters. Secondary students may compose narratives, letters, persuasive essays, research reports, a functional document, journals, creative writing, short answers, or extended responses. The writing products delineated in Lunsford's (1978) study were limited to expository texts; other studies (Chan et al., 2006; Shanahan, 1984; Sovik et al., 1996) used different genres of writing. The purpose of expository writing or exposition is to explain the world. The focus is on reality or the context and examples of this type of writing include lab reports, directions, and manuals (Lindemann, 1995). Other genres of writing exist as well. Persuasive or argumentative essays have the purpose of persuading the reader and can include editorials, sermons, and opinions. Creative writing permits the writer to express herself. Narrative writing contains a message to readers in a text and can include stories, jokes, or personal experience (Lindemann). To date, no analysis has been conducted to determine which, if any, of these genres contribute the most to improvement in reading proficiency.

2.7 The Writing Process

Writing, regardless of genre can be thought of as several processes (Flower & Hayes, 1994; Lindemann, 1995; Vacca & Vacca, 1989; Vygotsky, 1962; Williams, 1989). Three distinctive processes have been identified: prewriting, writing, and revision (Burns, 1999; Christenbury, 1994; Lindemann; Murray, 2003; Perl; 2003; Tompkins, 2001; Vacca & Vacca; Vygotsky; Williams). These processes may overlap and not have always

have a linear progression (Flower & Hayes, 2003; Lindemann; Zimmerman & Risemberg, 1997a); additional planning may occur as a part of revision. Prewriting is the planning of writing (Burns; Christenbury; Lindemann; Murray; Tompkins; Vacca & Vacca; Vygotsky; Williams). This process can include brainstorming, research, and the organization of ideas. Writing is the actual composition of text. Revision is often combined with editing and involves a review of the written product to note and fix errors and to further develop existing ideas. When students learn writing strategies and knowledge of planning and composing, they write longer, more complete, and qualitatively better papers than students who do not (Graham, Harris, & Mason, 2005).

The goal of prewriting is to help writers develop a plan for a writing product and can be as simple as active thought (Hayes & Flower, 1983; Lindemann, 1995). In this stage, words are assigned to represent thoughts and then are sequentially placed (Vygotsky, 1962). Emig (1971) defines prewriting as “that part of the composing process that extends from the time a writer begins to perceive selectively certain features of his inner and/or outer environment with a view to writing about” (p. 39). Pre-writing involves three cognitive elements; generating information for the composition, setting goals, and organizing prior knowledge (Zimmerman & Risemberg, 1997b). This stage can include collecting information, generating ideas, developing a main point, establishing a purpose, and organizing the content (Garcia & de Caso, 2004) or involve brainstorming or creating a list (Lindemann; Vacca & Vacca, 1989; Vacca & Vacca, 2005). The amount of time spent prewriting is directly related to the quality of the finished writing product (Piolat & Roussey; 1996; Zimmerman & Risemberg, 1997a; Zipprich, 1995).

Zipprich (1995) studied the effect of prewriting. The participants were 13 students from a resource room, aged nine through 12, who were identified as having a learning disability; 54% of the participants were Caucasian, 39% Hispanic, and 7% African American. The study, which measured the impact of webs as a prewriting device, was conducted in the resource room during regular class time for a duration of seven days. The research entailed four steps. Participants viewed another picture, completed a prewriting device (a web), received instruction about the critical elements of a story, and then composed a story. The quality of the writing products was based on planning time, number of words, number of thought units, types of sentences, mechanics, and a holistic score. The results of the study show that participant performance with the product derived from instruction and discussion was greater than their individual efforts. Planning time decreased while the holistic score improved. The interventions had no impact on sentence structure and writing mechanics (Zipprich).

The second step in the process, writing, is the physical composition or act of writing by pen or by computer (Lindemann, 1995; Vacca & Vacca, 1989). Also referred to as translation, the process of the actual writing “is the act of expressing the content of planning in written English” (Hayes & Flower, 1983). Writers face new demands with each writing task (Lindemann).

Piolat and Roussey (1996) addressed the research question of the role of draft writing and the effects on the quality of the finished writing product based on the writing process of the writers. The data consisted of 1,089 randomly selected rough drafts and final essay answers from an examination for students enrolled in a cognitive psychology class in 1991 and in 1993 at the University of Provence in France. The samples were extracted

from a larger closed-book test that included multiple-choice questions; the backs of the sheets with these questions were to be used to composing a rough draft. The essay question required students to discuss and provide an example of previously learned material. The researchers identified conditions of no draft, erased/illegible draft, available draft, the size of the drafts (short and long), the type of draft (note, organized, or composed), and draft revision (defined by the number of corrections) and found that 684 exams had evidence of one of these measures. The study found that the composition of a rough draft, a longer length of this draft, and the use of an organized draft yielded high grades. The authors conclude the qualitative and quantitative characteristics of composing a rough draft positively affect the final writing product.

Student writing samples and the willingness to participate in a study were the two criteria for becoming a subject in Perl's (2003) study that investigated the composing process of college writers. The data collected consisted of students' written products, an audiotape made by each the participants when composing, and their responses to interview questions. Perl coded each type of behavior from the audiotape and identified several operations: planning, commenting, interpreting, assessing, questioning, talking, repeating, reading, writing, and editing. The results of the analysis indicated that the subjects made "premature and rigid attempts to correct and edit their work" (p. 31) and reduced the amount of composing without improving what they had written. Few students completed any prewriting, which may have also impeded their work.

After physically forming text in the writing stage, the writer may refine the work through means of revision, the third stage. Revision involves rereading, reviewing, evaluating (Flower & Hayes, 2003), correcting (Emig, 1981; Vacca & Vacca, 1989), and

rewriting (Garcia & de Caso, 2004). Although editing (correction of errors in text) may be a part of this stage, revising addresses the rethinking and reshaping of created text (Lindemann, 1995). Elbow (1973) purports that revision or editing “means figuring out what you really mean to say, getting it clear in your head, getting it unified, getting it into an organized structure, and then getting it into the best words and throwing away the rest” (p. 38). The edit stage, as noted by Elbow should be “cut-throat” (p. 41), may require the use of “brute force” (p. 41) to obtain the desired work, and is the last step to a completed written work.

The research question asked in a quantitative study by O’Donnell, Dansereau, and Rocklin (1987) was the impact of rewriting. The 49 participants were students at Texas Christian University who were recruited from an introductory psychology class and received course credit for their participation.⁴ Participants were divided into three groups; an individual rewriting group of 14 participants, 22 participants placed in 11 cooperative rewriting groups, and an individual writing group of 13 participants. Two instructional tasks, operating a cassette recorder and starting a car, were selected as the subject of writing. Participants in the collaborative and individual rewriting groups were given an example of a student’s response to one of the tasks that had received low scores on a previous evaluation while the individual writing group was asked to write a set of instructions without an example. Upon completing the second assignment, participants completed the Delta Reading Vocabulary Test and the Group Embedded Figure Test. Researchers developed a “completeness test” for the writing samples by consulting a checklist of the equipment and the procedures necessary for operation. The results of this

⁴ No other demographic information is described in this study.

study indicate that the individual rewriting group scored slightly higher than the cooperative rewriting group and substantially better than the individual writing group.

2.8 Writing Instruction

Ninety-eight per cent of college students reported receiving writing instruction during their high school English classes (Kobayahi & Rinnert, 2002). As with reading, no one mode of writing instruction will benefit all students. The pedagogy on teaching writing requires a specific and predicable time for students to write (Combs, 1997), the incorporation of scaffolding (Tompkins, 2001), or in collaboration (Christenbury, 1994). The predominance of recommendations contains the implementation of the writing process (Burns, 1999; Christenbury; Lindemann, 1995; Tompkins; Williams, 1989).

The methodology for writing instruction is no different than for other contents and can be done either through lecture, modeling, cooperative groups, or use of graphic organizers. Lecture falls under what Langer (2002) refers to as separated or direct instruction. With this instruction, the teacher articulates the relevant conventions or facts necessary for the context. The instruction in lecture is not necessarily connected to previous lessons.

Modeling occurs when the teacher demonstrates the approach students need for task completion (Tompkins, 2001). Tompkins recommends the modeling of authentic activities and posits that modeling provides the greatest support a teacher can provide. The purposes of modeling can be to demonstrate fluent writing, the use of writing strategies, the procedure for a new writing activity, and writing conventions (Macrorie, 1985; Tompkins). Modeling helps students connect activities with goals (Richek et al., 2002).

Students are motivated about literacy when they talk and communicate about it (Miller & Meece, 2001; Richek et al., 2002). Cooperative groups foster this opportunity and are referred to as writing workshops (Lindemann, 1995; Tompkins, 2001). Peer review forces the writer to witness how certain words and phrases are construed and readers to analyze and evaluate their interpretive strategies (Batker & Moran, 1986; Macrorie, 1985). Participants in peer review also read more than they normally would (Lindemann).

Unlike lecture, modeling, and cooperative groups, graphic organizers are a writing tool rather than a methodology. Graphic organizers facilitate the formation of a visual word-image of essential ideas, details, or concepts (Robb, 2003) and can illustrate the relationships between concepts (Burns, 1999). Numerous graphic organizers can be used for writing and include Venn Diagrams, story maps, charts, graphs (Combs, 1997), and cluster diagrams (Lindemann, 1995). Graphic organizers tended to be used most prominently in prewriting as a source of generating ideas (Lindemann).

The results of specific writing instruction have been studied in different contexts. Instructional methodology was studied by Needles and Knapp's (1994) quantitative research. Over 1000 fourth and sixth grade students attending school California, Ohio, and Maryland were included in this study; 39% were African American, 28% were White, 14% Hispanic, 8% Asian, and Other 11%. The study was conducted in participants' classrooms. Students were divided into three groups based on instructional methodology: skill-based instruction, whole-language textbook instruction, and teacher-developed literacy instruction. The researchers compared the approach to writing instruction with measures of writing proficiency as measured by a rubric developed for the study. Researchers were apprised of classroom experiences through teacher logs,

visits, and interviews to identify instructional practices. The data representing participants' writing were extracted from a fall pretest and a spring posttest that represented common class assignments. The authors conclude that the more writing instruction incorporated sociocognitive features, the greater the association with high levels of writing competence and writing mechanics.

The nature, effect, and differences of young writers' collaboration were investigated by Daiute (1986). The participants were 43 fourth and fifth grade students in two public school classes in suburbs of Boston.⁵ Each student composed six texts; a pretest, a posttest, and four intervention samples to determine the influence collaborators have on one another, the differences of individual and collaborative texts, and discourse about composing strategies. Pre- and post-tests were written individually and analyzed for length, linguistic complexity, precision, structure, and style. Half of the participants wrote the intervention samples individually and half with partners. Audiotapes recorded the discourse in composing sessions in the respective classrooms. The Dale/Chall Fry readability formulas were used in determining readability of participants' work. Upon completion of the writing assignments, participants were interviewed about the experience. The study provides an in-depth look at two of the participants' experience, but forms conclusions about the aggregate trends. The results indicate that collaborative writing products were significantly better than individual efforts (Daiute).

2.9 Chapter Summary

The act of reading incorporates numerous cognitive processes that are activated in a progression (Ambruster & Osborn, 2001; ODE, 1999). Yet studies on reading instruction

⁵ No other demographic information is described in this study.

largely focus on the use of strategies to improve reading comprehension (ODE; Rasinski, 2003) rather than techniques aimed at the process progression. Remedial reading programs, such as Orton Gillingham, PHAST, Reading Recovery, Easy Steps, DISTAR, and SFA were developed for emerging or beginning readers and implemented on a one-to-one or small group setting. Reading Apprenticeship, a loosely structured program for older readers, is also conducted on a one-to-one basis. The Dual-Text Initiative provides instruction through coaching, prompting, and feedback. READ 180, although not empirically proven to be effective, integrates individual, small, and whole group instruction with computer aided learning.

Reading is often assessed with tests that may be linguistically or politically biased (Hoover, Pulitzer, & Taylor, 2005). The assessment used for this study, the SRI, has not been studied for potential bias.

Reading uses similar cognitive processes to that of writing (Shanahan & Tierney, 1990). Both involve phonemic awareness, word recognition, vocabulary, text organization, and syntax. One dated study (Shanahan & Tierney) found a modest correlation between reading and writing. The teaching of writing always includes the teaching of reading and results in improvement of both disciplines (Lunsford, 1978). While a significant amount of research and essays purport the connection between reading and writing (Elbow, 1993; Fitzgerald, 1990; Shanahan, 1990; Vygotsky, 1962), few empirically have demonstrated this relationship (Grobe & Grobe, 1977; Lunsford). Shanahan (1984) recommends that research investigating the reading-writing relationship use a multivariate methodology.

Writing is a complex activity that is based on the writer's history, culture, and social world (Dyson, 1990; Hicks, 1996). It is a means of communication (Lindemann, 1995) that extends beyond the physical act of forming letters (Vygotsky, 1978). Writing is often done within the context of three processes, prewriting, writing, and revision (Burns, 1999; Christenbury, 1994; Lindemann; Murray, 2003; Perl; 2003; Tompkins, 2001; Vygotsky, 1962; Williams, 1989). Each process has a specific goal and contributes to the quality of a written work (Graham et al., 2005; Piolat & Roussey, 1996).

Writing instruction also produces a higher quality of written product (De La Paz, 2005). Instruction includes lecture (Langer, 2002), modeling (Tompkins, 2001), cooperative groups (Lindemann, 1995; Tompkins), and graphic organizers (Combs, 1997; Lindemann). No one mode of instruction has consistently been found to be superior in teaching students to write. Increased sociocognitive features in instruction for writing produced higher competence and mechanics in the final written product for the study (Needles and Knapp, 1994).

The methodology in the literature presented greatly varied. Early work connecting reading and writing used correlation (Lunsford, 1978; Shanahan & Tierney, 1990) and canonical analysis (Shanahan, 1984). None of the studies presented stepwise regression models for analysis.

The categories of literature discussed in this section provide the rationale and support for conducting the research in this study. The cognitive practices of reading are similar to those of writing and support the conceptual framework for this research. The content and quality of reading programs presented illustrate that attempts have been made for reading remediation; these programs do not include writing as a tool and have not produced large

improvements in the reading proficiency of children in this country (Lee et al., 2007). The elaboration of reading assessment included an explanation of the outcome variable for this study (changes in SRI scores) and a description of the information it will provide. The literature presented in the connections between reading and writing demonstrates the limitations of the research conducted in this area and recommends multivariate methodology, while, at the same time, substantiates the conceptual model. The processes of writing, activities in which students engage when writing, was discussed in the writing section and shows the overall contribution each phase makes in the final product. Lastly, a discussion of writing instruction provides definitions and examples of the classroom practices of the teacher for writing instruction.

CHAPTER III

METHODOLOGY

The review of the literature reveals that few remedial options exist for struggling secondary school readers. The literature also indicates that minimal empirical research has been conducted to define the relationship between reading and writing. The research that has been completed does not consider the impact writing has on reading proficiency. This study examines the degree to which writing activity and writing instruction impact standardized reading test scores for secondary students.

3.1 Research Consents

3.1.1 Institutional Review Board Consent

A preliminary request was made to the Institutional Review Board (IRB) of Cleveland State University in November, 2007. The request included a prototype of the survey instrument to be used in the study; permission was granted (see Appendix A).

3.1.2 Districts' Consent

Three school districts located in the inner ring of a midsized Midwestern city and one in a small town were contacted for participation. One district (District "1") required the completion of the "Request to Conduct Research" application. The researcher completed it and submitted it to the district's Coordinator of Testing/Accountability. This form required an explanation of the research, an explanation of how the information was to be

gathered, a statement about the value of the research to the students in the district, the goal of the study, the access to different buildings that was needed, the requirements to complete the research, a list of individuals to be involved in the study, the data collection methodology, the outcome of the study, a statement describing any identification of the district in the final report, and the expected timeline. Consent to conduct research was given in November of 2007. Recruitment for participants began the following school year. In September, a presentation was given at the English department meeting. All nine ninth and tenth grade teachers initially agreed to participate. Four released themselves and only six completed data collection. Middle school teachers in this district were approached individually in September and October. Of the 14 middle school teachers approached, five agreed to participate. Three later released themselves from the study, and two completed data collection.

The initial contact to District “2” was made by telephone in June 2008 to the Coordinator of Assessment and Accountability. Upon receiving the abstract and instrument by email, tentative approval was given to proceed with the study. In late September 2008, the researcher met with the coordinator and the assistant superintendent. Once formal approval was granted, the district officials sent the material for the study to the curriculum coach of the district, who, in turn, recruited three out of the 24 qualifying middle school language arts teacher; the researcher was not permitted to directly recruit teachers. Of the three teachers who initially agreed to participate, one released herself from the study; two teacher participants completed the data collection.

Officials in two other districts (Districts “3” and “4”) agreed to participate in the study. The initial contacts to these districts were made through administration in the

spring of 2008. The first contact by the researcher was by telephone. Upon request, the instrument and informational PowerPoint presentation were submitted by email (see Appendix B). Approval to conduct research was provided through an email and the coordination of the study was referred to a second administrator District “3”. The researcher was invited to present information about the study directly to the teachers in September 2008 and received permission to recruit participants. Shortly after presenting the information to potential participants, the administrator deferred participating in the study until the start of the second academic quarter in late October. In late October, the researcher contacted him, and he again asked to defer the study indefinitely.

The administration District “4” referred the researcher to the department chairs of the English department. Of the three chairs, only one agreed to participate and recruit other teachers. Of the nine language arts teachers, three agreed to participate in the study. Two of the teachers discontinued their participation, and the third lost the surveys she completed.

3.2 Data Sources

Three data sources were used in this study, which was supplied by the participating teachers and/or Coordinators of Testing for each of the participating districts. The first source of data was the results of a survey instrument. The survey was necessary to measure the amount and type of writing instruction and the amount and type of writing done in the participating classrooms. The instrument also captured the demographic data for the participants. The second source for data was test scores from the SRI, a computer test designed to be administered in 10-week intervals. The SRI was administered at the onset and end of the data collection to measure changes in reading proficiency. The third

source of data was demographics of the classroom. This data included gender and ethnicity of each student as well as their eligibility for free and reduced lunch.

3.2.1 The Districts

All of the districts in Ohio with licenses for SRI were contacted for recruiting teachers as participants. Table III presents the demographics and community information of the districts that had participating teachers.

District #1

District “1” is a suburban school district located in the inner ring of a large Midwestern city. This district is comprised of two separate cities. The larger of the two cities has a population of 49,958 with a median age of 35.2 (U.S. Census Bureau, n.d.a). The population consists of 23,320 males and 26,638 females representing several racial and ethnic groups; 26,229 are White, 20,873 are African American, 1,280 are Asian, 791 are Hispanic or Latino, 81 are Native American, five are Native Hawaiian and other Pacific Islander, and 338 are some other ethnicity. Of the 33,522 residents over age 25, 16,760 hold a bachelor’s degree of higher and of the population five years and older, 5,166 speak a language other than English at home. The median family income in 1999 dollars was 58,028; 5,276 individuals in this community live in poverty. The median value of a single-family home is \$109,500.

The smaller of the cities in District “1” has a population of 14,146 with a median age of 32.1 (U.S. Census Bureau, n.d.c). The population consists of 6,671 males and 7,475 females representing several racial and ethnic groups; 10,671 are White, 2,916 are African American, 240 are Asian, 221 are Hispanic or Latino, 14 are Native American, six are Native Hawaiian and other Pacific Islander, and 88 are some other ethnicity. Of

Table III

Demographics and Community Information for the Recruited School Districts with Participating Teachers for 2000

Demographics and Community Information	District 1	Percent	District 2	Percent
Population	64,104		56,646	
Male	29,991	47%	27,275	48%
Female	34,113	53%	29,371	52%
Ethnicity*				
White	36,900	58%	52,723	93%
African American	23,789	37%	1,116	2%
Asian	1,520	2%	800	1%
Hispanic	1,012	2%	1,269	2%
Other	532	1%	503	1%
Median Age	34.5		34.2	
Number with BA or higher	21,517	34%	14,193	25%
Median Income	\$61,867		\$40,527	
Median Housing Value	\$114,900		\$117,900	
State Rating of Schools	C. I.**		C.I.**	
Number of Indicators Met**	86.8	72%	95.5	80%
2007-2008 Mean ACT	20		22	
2007-2008 Mean SAT	1010		1068	

(U.S. Census, n.d.a; U.S. Census, n.d.b) *Information on race contained missing values.

**C. I. refers to continuous improvement.

***The State of Ohio identified 120 specific performance indicators for 2006-2007.

the 8,595 residents over age 25, 4,757 hold a bachelor's degree of higher and of the population five years and older, 1,251 speak a language other than English at home. The median family income in 1999 dollars was 75,424; 709 individuals in this community live in poverty. The median value of a single-family home is \$134,400.

The State of Ohio Department of Education rated this district as “continuous improvement” in the 2006-2007 school year (Stephens, 2007). In this school year, District “1” met 13 out of the possible 30 state standards and 88.7 of the 120 performance indicators. In the 2007-2008 school year, the overall district rating remained at “continuous improvement” (Ohio Department of Education, 2008a). The district met 10 out of 30 state standards and 86.8 of the 120 performance indicators. The mean ACT score for high school students was 20, and the mean SAT scores was 1010 (ODE, 2008a). In the 2008-2009 school year, the district met 10 out of 30 state standards and 86.8 of the 120 performance indicators. The mean ACT score for high school students was 20, and the mean SAT score was 1010 (ODE, 2008b).

District “2”

District “2” is a suburban school district located in the inner ring of a large Midwestern city. This population of the suburb is 56,646 with a median age of 34.2 (U.S. Census Bureau, n.d.b). The population consists of 27,275 males and 29,371 females representing several racial and ethnic groups; 52,723 are White, 1,116 are African American, 800 are Asian, 1,269 are Hispanic or Latino, 139 are Native American, 15 are Native Hawaiian and other Pacific Islander, and 349 are some other ethnicity. Of the 39,516 residents over age 25, 14,193 hold a bachelor's degree of higher and of the population five years and older, 6,854 speak a language other than English at home. The

median family income in 1999 dollars was 40,527; 4,956 individuals in this community live in poverty. The median value of a single-family home is \$117,900.

District “2” was rated “continuous improvement” in the 2006-2007 school year (Stephens, 2007). The district met 25 of the 30 state standards and 95.8 out of 120 performance indicators. In 2007-2008, the district increased their rating to “effective” (Ohio Department of Education, 2008b). The district met 24 of 30 state standards and 95.5 out of 120 performance indicators. The mean ACT score for students was 22, and the mean SAT score was 1068 (ODE, 2008b).

3.3 Data Collection Procedures

3.3.1 Student Histories Data

The data were collected for 307 middle and high school students in two suburban school districts located near a large Midwestern city. The data collected on the students consisted of gender, ethnicity, eligibility for free and reduced lunch, and two sets of SRI scores; one set was collected at the onset of the study and the second at the end. Demographic and economic data were provided by the Coordinator of Testing or teacher participants for each district. The SRI scores were provided by each teacher participant.

3.3.2 Teacher Participants and Data

The participants for this study were a total of 10 middle and high school classroom teachers in two inner ring suburban school districts located near a large Midwestern city. Each participant selected one of her honors classes and one of her ungrouped classes for the study; one teacher with two grade levels selected an honors class and an ungrouped class for each grade level taught. All of the teachers held the appropriate teacher licensure required by the state and either an English or a language arts teaching license. All

participating teachers received \$50.00 for each class used in the study and had their name entered into a two drawings of \$250.00 each. All participants' responses will remain confidential.

Teachers were recruited by a brief introduction to the research project and an explanation of their involvement. Participating teachers signed the consent form and received directions about the survey instrument completion. The participants completed a one-time survey to supply personal demographic information. Rather than have participants self-report (Needles & Knapp, 1994) or monitor their classroom practices and activity through the use of charts (Miller & Meece, 2001), the primary measure for collecting data from the teacher participants was a daily survey. The daily survey contains questions about the length of time spent for writing instruction, the methodology of the writing instruction, genre of writing taught, phase of the writing process addressed, genre of writing students did, phase of the writing process student did, genre of writing assigned for homework, and the anticipated time spent on the writing assigned for homework (see Appendix C for the instrument). The information secured through this instrument became the independent variables. The instrument was developed after reviewing other instruments as well as the components of writing instruction and student writing; no comparable instrument was located. To gain information about the content validity of the instrument, it was evaluated by five literacy educators, three secondary English teachers and two literacy coaches

3.4 Variables and Measures

The variables in this research study are.

- *SGEN* – Gender of the student (Coded as: 0 = male, 1 = female)

- *SETH* – Ethnicity of the student (Coded as 0 = African American, 1 = Non-African American)
- *SRIPR* – SRI pretest scores
- *SRIPO* – SRI posttest scores
- *FRE/RED* – Eligibility for free or reduced lunch (coded as 0 = ineligible, 1 = reduced or free lunch)
- *JOUR* – Time (minutes) spent on the instruction of journal writing
- *ACAD* – Time (minutes) spent on the instruction of the combined genres of writing taught requiring formal style and adherence to writing conventions; letters, research report, extended response, functional document, persuasive, descriptive, and short answer
- *CRENAR* – Time (minutes) spent on the instruction of the combined genres of writing taught that do not require a formal style and adherence to writing conventions; creative, narrative, and other
- *FORM* – Time (minutes) spent on the combined methodologies of lecture and modeling
- *MOTH* – Time (minutes) spent on the combined methodologies of cooperative learning, graphic organizers, and other methodologies
- *WRIT* – Time (minutes) spent on instruction of the writing phase of writing instruction
- *WOTH* – Time (minutes) spent on instruction of the phases of writing process of prewriting, revision, and publishing
- *SJOU* – Time (minutes) spent on the genre of writing done by students; journals

- *SACA* – Time (minutes) spent on the combined genres of writing done by students requiring formal style and adherence to writing conventions; letters, research report, extended response, functional document, persuasive, descriptive, and short answer
- *SCRE* – Time (minutes) spent on the combined genres of writing done by students that do not require a formal style and adherence to writing conventions; creative, narrative, and other
- *SWRI* – Time (minutes) spent on the writing phase of the writing process done by students
- *SWOT* – Time (minutes) spent on the phase of the writing process done by students other than writing; prewriting, revision, and publishing

3.5 Data Analysis

Descriptive statistics were analyzed to provide a summary of demographic data and SRI scores. An analysis of variance (ANOVA) was used to determine the differences in writing instruction between middle and high school teachers. Multiple regressions were used to determine the teaching practice and student writing activity variables that predicted changes in SRI scores. Shanahan (1984) recommends the use of multivariate procedures to consider the relationships of the components of reading improvement and writing. Multiple regression analysis is a multivariate methodology for data analysis (Meyers, Gamst, & Guarino, 2006; Pedhazur, 1973). The alpha level was set at .05 for all of the analyses.

Within the methodology of multiple regressions lie several options (Brace, Kemp, & Snelgar, 2003; Meyers et al., 2006; Pedhazur, 1973). Of these options, stepwise

regression is the most appropriate for this study. This study investigates student achievement, as measured by increases in SRI scores with combinations of the classroom characteristics as measured by teacher practices for writing instruction and student writing activity. A stepwise regression, considered to be the most sophisticated of regression methodologies (Brace et al.), allows the addition of variables to the model and retests the previously entered variables; those variables that no longer contribute to the model are removed (Brace et al.; Pedhazur).

Two sets of multiple regressions were used for this study. In both sets of regressions, the outcome variable was the changes in SRI scores. Teacher practice variables were used in the first set to determine which, if any, of the variables significantly predicted the outcome variable. In the second set of regressions, student writing activity variables replaced the teacher practice variables.

3.6 Chapter Summary

The data for this study were provided by the participants and supplemented by the teachers and/or the Coordinator of Testing from two inner ring suburban school districts. Participants were recruited as per district standards and signed a consent form approved by the IRB at Cleveland State University. The variables and measures for the analyses were explained as well as the multiple regression parameters and equations. The qualitative methodology of grounded theory was used to reduce the number of genre variables for analysis.

CHAPTER IV

RESULTS

This research project was designed and conducted to study the relationship between reading proficiency and writing. Data on student demographics, teacher practice of writing instruction, classroom practice of student writing, and two sets of SRI scores were collected. This chapter provides the descriptive statistics on the teacher participants, an analysis of the data, and the subsequent findings pertaining to the research questions.

4.1 Descriptive Statistics

4.1.1 Teacher Participants

The four school districts with SRI licenses in the State of Ohio employ approximately 90 language arts or English teachers. Of those teachers invited to participate in the study, 29 began the study reflecting 48 classrooms in three districts. Shortly after consenting to for his staff to participate, one administrator discontinued the study in his district and terminated the participation of 15 teachers. Several teachers released themselves as participants or lost the surveys once started. Of the 10 teachers who completed the participation, eight were from one district (District “1”), and two from another (District “2”). Although several teachers provided data on more than one class, the demographic data reflect the characteristics of each teacher. One participant was African American

(10%) and the other teachers were White (90%). All of the participants were women. The professional attributes of the participants is presented in Table IV.

Table IV

Number and Percentage of the Participating Teachers' Various Demographic Categories

(*N* = 10)

Demographic Information	Category	Frequency		Percent
		District "1"	District "2"	
Licensure	Language Arts	4	1	50
	English	4	1	50
Grade level	Middle School	2	2	40
	High School	6	0	60
Years teaching	Fewer than 10 years	4	0	40
	More than 10 years	4	2	60
Highest degree earned	BA	0	1	10
	MA/M. Ed.	8	1	90
Major of highest degree	Education	7	1	80
	Reading	0	1	10
	English Literature	1	0	10

The professional attributes of the participating teachers were self-reported. The area of licensure held by teacher participants was equally split between language arts (50%) and English (50%). More high school teachers (60%) participated in the study than middle school teachers (40%). One participating teacher reported having three years of teaching

experience, one six years, and two nine years. Of the more experienced teachers, one reported having 13 years, others reported having 17, 18, 20, 28, and 39 years of experience. The years of teaching in their current district reported by teachers ranged from a low of two years to a high of 21 years with an average of 8.5 years. The highest degree earned of participating teachers was a bachelor's degree for one teacher (10%) and a master's degree for nine teachers (90%). The majority of the highest degrees attained were in the field of education (80%) with one degree earned in reading and one in English Literature.

4.1.2 Student Demographics

The historical data were obtained for 307 students assigned to the participating teachers. Participating teachers in one district supplied the student history, and the researcher obtained the student history data in the other participating district. Table V shows the demographics extracted from the student histories provided by teachers or the researcher. Of these student histories, 141 were for male students (45.9%) and 166 for female students (54.1%). The majority of students, 179, were African American (58.3%) and 128 students were non-African American (41.7%). More student histories were obtained for high school students (64.5%) than middle school students (35.5%). Slightly over half of the students, 165 (53.7%), received free or subsidized lunch and 142 (46.3%) did not.

Table VI provides a summary of the SRI pretest histories by grade level. The minimum, maximum, and mean scores and the standard deviation are shown by grade level. Ninth grade mean scores were lower than scores for both seventh and eighth grade students.

Table V

Frequency and Percentage of Student Histories by Selected Demographic Categories ($N = 307$)

Demographic information	Category	Frequency	Percent
Gender	Male	141	45.9
	Female	166	54.1
Ethnicity	African American	179	58.3
	Non-African American	128	41.7
Grade	Middle School (grades 6-8)	109	35.5
	High School (grades 9-10)	198	64.5
Eligibility for subsidized lunch	Free or subsidized	165	53.7
	No subsidy	142	46.3

Table VI

SRI Pretest Scores by Grade Level ($N = 307$)

Grade Level	N	Minimum	Maximum	Mean	Standard Deviation
Sixth	67	195	1165	748.4	188.40
Seventh	23	661	1411	1087.8	1175.28
Eighth	19	1106	1500	1292.6	100.92
Ninth	126	212	1500	1044.6	258.43
Tenth	72	641	1500	1179.9	193.00

Table VII provides a summary of the SRI posttest histories by grade level. The minimum, maximum, and mean scores and the standard deviation are shown by grade level. Ninth grade mean scores were lower than scores for both seventh and eighth grade students. A comparison of the means for the pretest and posttest SRI scores indicates every grade level experienced increased scores.

Table VII

SRI Posttest Scores by Grade Level ($N = 307$)

Grade Level	N	Minimum	Maximum	Mean	Standard Deviation
Sixth	67	252	1298	796.7	189.77
Seventh	23	759	1371	1154.5	150.63
Eighth	19	1177	1500	1367.4	95.42
Ninth	126	285	1500	1059.8	240.71
Tenth	72	726	1500	1189.4	116.50

4.1.3 SRI Scoring

SRI scores are presented in lexiles. Lexiles are a measure of the proficiency of the students' reading levels and the difficulty of text. Increases in students' lexile indicate increases in level of reading proficiency. Table VIII provides a summary of the grade and the corresponding lexile levels.

Lexile scores have equal intervals (Scholastic, Inc., n.d.). While the lowest reported score on the SRI is 200 (Scholastic, Inc., 2006), students histories indicated that scores of BR (beginning reader) were earned. This rating indicated the score was invalid since students at a BR level would have been assigned to an intervention course rather than a

class in the regular or honors track of the participating schools. A BR score indicates that the student did not give a reasonable effort to the test as students were prescreened to be in an honors or regular classroom. SRI histories of students earning this score were eliminated from the data. Although Scholastic, Inc. indicated that the highest score possible was 1700, scores above 1500 were displayed as 1500+; scores of 1500+ remained in the data. The SRI score indicates a range of 50 lexiles above actual reading level to about 100 lexiles below it (Scholastic, Inc., n.d.) with 75% accuracy in reading comprehension. Table VIII shows the lexile scores and corresponding grade levels.

According to the lexile level set by Scholastic, Inc. (2005), the mean SRI scores for both sets of administrations (first administration mean = 748.4, and second administration mean = 796.70) for sixth grade were below grade level (800 to 1050 points). The mean SRI scores for both sets of administrations for seventh (first administration mean = 1087.8, second administration mean = 1154.5) and eighth grade students (first

Table VIII

Range of Lexile Scores and Corresponding Grade Levels with Pretest and Posttest SRI Scores

Grade	Expected Grade Level (in Lexiles; Scholastic, Inc. 2005)	Mean Pretest SRI Scores	Mean Posttest SRI Scores
Sixth	800 to 1050	748.4	796.7
Seventh	850 to 1100	1087.8	1154.5
Eighth	900 to 1150	1292.6	1367.4
Ninth	1000 to 1200	1044.6	1058.8
Tenth	1025 to 1250	1179.9	1189.4

administration mean = 1292.6, second administration mean = 1367.4) were above average (the seventh grade range is 900 to 1150, and the eighth grade range is 900 to 1150). The mean SRI scores for both sets of administrations for ninth (first administration mean = 1044.6, second administration mean = 1059.8) and tenth grade students (first administration mean = 1179.9, second administration mean = 1189.4) were within the range for each respective grades (the ninth grade range is 1000 to 1200, and the tenth grade range is 1025 to 1250 points).

4.1.4 Variables Measuring Time for Instruction and Student Writing Activities

The descriptive statistics for the time spent on instruction for specific genres, methodologies, and phases of the writing process and for student writing activities are provided in Table IX. The minimum score of zero indicates that no time was spent on instruction or student writing activity by at least one participating teacher on journals, mode of instruction other than lecture and modeling, and the student writing activity of journals. The instruction variable for academic writing (mean = 201.8) and instruction lecture using and modeling (mean = 197.3) had the largest average values. Instruction on journals had the lowest average value (mean = 37.2). A comparison of the mean scores for instruction and the mean scores for student writing activity shows that more classroom time was spent on students writing than receiving instruction; only one variable measuring instruction, academic writing, exceeded 200 minutes whereas one student writing activity variable, student writing activity of journals, was under 200 minutes (mean = 113.6) and had the lowest mean value for all student writing activity variables. The student writing activity with the largest average value was the writing phase of the writing process (mean = 362.1).

Table IX

Minimum, Maximum, Mean, and Standard Deviation Values for Variables Reflecting Time Spent on Instruction of Writing and on Student Writing Activity in Minutes ($N = 18$)

Variable	Minimum	Maximum	Mean	Standard Deviation
Instruction				
Journal	00.0	189.5	37.2	58.98
Academic Writing	45.5	600.0	201.8	174.15
Nonacademic writing	25.5	541.5	160.6	135.75
Formal instruction	30.0	585.5	197.3	156.53
Other instruction	00.0	526.5	152.1	148.51
Writing phase	10.0	434.5	153.1	126.22
Phases other than writing	40.5	453.0	179.5	124.91
Student Writing Activity				
Journal	00.0	489.5	113.6	143.68
Academic writing	61.5	735.5	323.7	155.89
Nonacademic writing	31.0	609.5	239.4	160.53
Writing phase	71.5	953.5	362.1	202.95
Phases other than writing	65.5	515.0	270.3	137.78

4.2 Research Findings

4.2.1 Research question 1: Are there statistically significant differences in the instruction of writing between middle and high school classrooms?

An analysis of variance (ANOVA) was used to determine differences in the time spent on the instruction of writing and the student writing activity between middle and high school classrooms (see Table X). Of the genre variables analyzed, time spent on academic writing indicated statistically significant differences between middle and high school teachers ($F = 10.18, p < 0.01$) with middle school teachers spending more time spent on instruction of this genre (mean = 351.1) than high school teachers (mean = 127.2). The results of the ANOVA show that high school teachers spent more time on instruction for journal and other writing, these differences were not statistically different.

Middle school teachers spent more time using formal instruction than high school teachers while high school teachers spent more time using other instruction. The differences in these variables were not statistically significant.

Differences between the school levels on the time spent on instruction of the phases of the writing process other than writing were also statistically significant ($F = 7.48, p < 0.05$). The time spent on the instruction on the phases of writing other than writing by middle school teachers (mean = 276.4) was greater than the time spent by high school teachers (mean = 131.1). Although the results of the ANOVA indicated that middle school teachers spent more time on instruction for journals, nonacademic writing, and writing instruction than high school teachers, these findings were not statistically significant.

Table X

One-Way Analyses of Variance (ANOVAs) Results for Differences in Time Spent between Middle and High School Teacher Participants on Writing Instruction in Minutes

Dependent Variable	Level	<u>M</u>	<u>SD</u>	<u>F</u>	<i>p</i> -value
Journal	Middle	39.1	59.9	0.0	.984
	High	38.5	63.2		
Academic writing	Middle	351.1	205.2	10.2	.006*
	High	127.2	97.6		
Nonacademic writing	Middle	174.6	93.5	.1	.767
	High	153.5	156.1		
Formal instruction	Middle	220.8	190.6	.2	.667
	High	185.6	178.8		
Other instruction	Middle	164.9	89.8	.1	.805
	High	145.8	174.0		
Writing phase	Middle	193.2	114.3	.9	.357
	High	133.1	131.8		
Phases other than writing	Middle	276.4	131.2	7.5	.015**
	High	131.1	92.8		

* $p < .01$. ** $p < .05$.

The time spent on writing activities by students in middle and high school classes were compared using a one-way ANOVA (see Table XI). Of the variables analyzed, only

Table XI

One-Way Analyses of Variance (ANOVAs) Results for Differences in Time Spent between Middle and High School Students on Writing Activity in Minutes

Dependent Variable	Level	<u>M</u>	<u>SD</u>	<u>F</u>	<u>p</u> -value
Journal	Middle	134.3	185.6	0.00	.685
	High	102.8	133.3		
Academic writing	Middle	414.6	222.6	10.18	.079
	High	278.3	91.0		
Nonacademic writing	Middle	222.3	116.4	.09	.759
	High	248.0	182.8		
Writing phase of the writing process	Middle	386.4	310.4	.90	.731
	High	350.0	139.2		
Phases other than writing	Middle	356.3	110.6	7.48	.054
	High	227.3	129.9		

the variable of time spent on the phases of the writing process other than writing was close to statistical significance with middle school students writing more (mean = 356.3) on these phases than high school students (mean = 129.9). None of the variables were statistically significant; however, the results of the ANOVA indicate that, with the possible exception of time spent on nonacademic writing, middle school students receive more time on instruction for writing and spend more time writing than do high school students.

4.2.2 Research question 2: To what extent does the amount of time teachers provide writing instruction, the method of writing instruction, the genre of the writing addressed in the instruction, the process of writing discussed, and student gender predict students' reading test scores?

A comparison of the descriptive statistics of the mean scores and standard deviations from first and second SRI administrations indicates a high correlation ($r = .93, p < .001$; see Appendix D for the rationale and discussion about using the second administration of SRI scores as the outcome variable) between the two test administrations. The high intercorrelation eliminated the first administration of SRI from further consideration in the model.

An initial multiple regression model was used with all of the potential variables to be included in the model and included time spent on academic writing, journals, nonacademic writing, formal instruction, other instruction, the writing phase of the writing process, and the other phases of the writing process, and grade level, gender, ethnicity, and eligibility for free or reduced lunch. Those variables obviously not statistically significant ($p > .75$) were excluded from further consideration; the variables removed from consideration in the model were gender and eligibility for subsidized lunch.

The results of the final model of the stepwise regression appear in Table XII. The independent variables that were statistically significant predictors of the scores of the second SRI administration were ethnicity ($\beta = .409, p < .001$), time spent on the instruction of academic writing ($\beta = -.430, p < .001$), on formal instruction ($\beta = .709, p < .001$), instruction on the writing phase of the writing process ($\beta = -.310, p < .01$), and

instruction on journals ($\beta = -.279, p < .05$). These results indicate those students who are not African American score 212.33 points higher than students who are. For every minute teachers spend on writing instruction for academic genres, SRI scores decrease by .63 points, and for every minute teachers provide formal instruction, reading scores improve by 1.14 points. Scores decrease by .63 points per minute that teachers provide instruction on the writing phase of the writing process, and by 1.17 points per minute with instruction on journals. These five statistically significant predictors account for 37% of the variance in the second administration of SRI scores.

Table XII

Stepwise Regression Analysis Results for the Prediction of SRI Scores By Teachers'

Instructional Practices

Predictor Variable	Step Entered	Standardized Coefficient (β)	Unstandardized Coefficient (B)	<i>p</i> -value
Ethnicity	1	.409	212.33	.000
Instruction on academic writing	2	-.430	-.63	.000
Formal instruction	3	.709	1.14	.000
Instruction on writing phase	4	-.310	-.63	.012
Instruction on Journals	5	-.279	-1.17	.039

Note. $R^2 = .37$.

The expected increases in lexile scores for middle school grades are 250 per year, 200 points for the ninth grade year, and 225 points for the tenth grade year (Scholastic, Inc., 2005). Differences in ethnicity indicate approximately one half of an academic year of difference in lexile scores between African American students and those who are not. The

time spent on academic writing for both middle and high school students for the 10 week period of teacher participation exceeded 200 minutes (see Table X); for every 200 minutes spent on the instruction of academic writing, SRI scores decreased by an average of approximately 126 points or half of the growth expected in lexile scores for a year; instruction on the writing phase of the writing instruction resulted in similar decreases. Both middle and high school teachers spent an average of over 100 minutes on instruction for journals (see Table X), which decreased reading proficiency by over 100 points or half of the expected growth in lexile scores for a year. Middle school teachers spent an average of over 400 minutes using formal instruction, which increased SRI scores by over 440 points; high school teachers spent an average of 278 minutes providing formal instruction for a gain of almost 300 points of reading proficiency. The time spent on formal instruction increased reading scores by over a grade level of reading scores.

The variables not statistically significant in this model were eligibility for free or free or reduced lunch, and time spent on instructional methods used other than formal instruction, instruction nonacademic writing, and instruction the other phases of the writing process than writing. The beta values for these variables were consistently lower than for the significant variables; had they been significant, they would have nominally changed the SRI scores.

4.2.3 *Research question 3: To what extent does the amount of time students spend writing, the genre of writing students do, the particular part of the writing process students use, and students gender predict students' reading test scores?*

A comparison of the descriptive statistics of the mean scores and standard deviations from first and second SRI administrations indicates a high correlation ($r = .93, p < .001$). The high intercorrelation eliminated the first administration of SRI from further consideration in the model (see Appendix D for the rationale for using the second administration of SRI scores as the outcome variable).

An initial multiple regression model was used with all of the potential variables to be included in the model and included time spent on academic writing, journals, nonacademic writing, the writing phase of the writing process, and the other phases of the writing process, and grade level, gender, ethnicity, and eligibility for free or reduced lunch. The variable obviously not statistically significant ($p > .75$) was excluded from further consideration; no variables were eliminated from the model based on this criterion.

The remaining variables were entered into a stepwise regression. The results of the final model of the stepwise regression appear in Table XIII. The independent variables that were statistically significant predictors of the scores of the second SRI administration were ethnicity ($\beta = .321, p < .001$), grade level ($\beta = .193, p < .01$), time spent on phases of the writing process other than writing ($\beta = -.280, p < .001$), time spent on nonacademic writing ($\beta = .265, p < .001$), time spent on the writing phase of the writing process ($\beta = -.180, p < .01$), and time spent on writing journals ($\beta = -.153, p < .01$). These results

Table XIII

Stepwise Regression Results for the Prediction of SRI Scores by Student Writing Activity

Predictor Variable	Step Entered	Standardized Coefficient (β)	Unstandardized Coefficient (B)	<i>p</i> -value
Ethnicity	1	.321	166.37	.000
Grade level	2	.193	103.00	.002
Phase other than writing	3	-.280	-.53	.000
Nonacademic writing	4	.265	.43	.000
Writing phase of the writing process	5	-.180	-.23	.001
Journals	6	-.153	-.28	.002

Note. $R^2 = .36$.

indicate that the scores of students are not African American have reading scores 166.37 points higher than African American students. (This number of points is different than its counterpart in the regression for teacher instructional practices [question two] and suggests that the other variables in the model influence ethnicity.) The results for the variable of grade level indicate that the scores of high school students are 103.00 points higher than those of middle school students. For every minute students use the phases of the writing process other than writing, reading scores decreased by .53, and for every minutes students write without consideration to formal conventions reading scores increased by .43 points. Reading scores decreased by .23 points for each minutes spent on the writing phase of the writing process, and writing journals reduced reading scores by .28 points per minute.

The expected increases in reading scores for middle school grades are 250 points in lexiles per year, 200 points in lexiles for the ninth grade year and 225 points in lexiles for the tenth grade year (Scholastic, Inc., 2005). Differences in ethnicity indicate approximately over one half of a school year of difference in reading proficiency between students. The differences in grade level also indicate approximately one half-year of increased reading proficiency in students. Although the decreases and increases in reading scores seem small from the student writing activity variables, they become sizable when multiplied by the average time spent on each activity during the 10-week period (see Table IX for average time spent on each student writing activity). Students spent an average of in excess of 100 minutes on phases of the writing process other than writing, and a loss of .53 reading points per minutes becomes over 53 points for the 10-week period. Students spent over an average of 150 minutes on writing without formal conventions; at an increase of .43 points per minutes, writing in this genre resulted in an increase of over 60 points, approximately one fourth the expected growth in reading proficiency during a school year. Students used the writing phase of the writing process for an average of over 133 minutes and experienced a reduction of .23 points per minute for a total loss of over 25 points for the 10-week period. The time students spent on writing in journals was under 40 minutes and at a loss of .28 points per minutes for a small loss of approximately 11 points. The combined relationship of these predictor variables accounted for 36% of the variance in the second set of SRI scores.

The variables not statistically significant in this model were student gender, time spent on academic writing, and eligibility for subsidized lunch. These variables, had they been statistically significant, would have nominally impacted SRI scores.

CHAPTER V

SUMMARY, DISCUSSIONS, AND RECOMMENDATIONS

The results of this study further the understanding of the relationship between reading and writing. The following sections provide a summary of the findings, a relevant discussion to the topic, implications for practice, limitations of the study, recommendations for practice and future research, and concluding remarks.

5.1 Summary of the Findings

The purpose of this study was to further investigate the relationship between reading and writing. Teacher participants obtained student histories of SRI scores and completed a daily survey that measured the amount and type of writing instruction they provided to students and the amount and type of writing students composed during their class. Data on 307 middle and high school students in 18 classrooms were collected from 10 language arts or English teachers during the 2008-2009 school year in two school districts located in Ohio. The data on students' histories obtained for this study included grade, gender, ethnicity, eligibility for subsidized lunches, and scores from SRI administrations. The data measuring instructional practices of teachers for writing collected and combined for this study were demographic and professional information, and the amount time spent on specific genres, the time using five different teaching

methodologies, and the time spent on each phase of the writing process taught. The data on student writing activity data collected and combined for this study were the amount of time students spent writing on specific genres and the time using each phase of the writing process. The data on the writing genres, methodology used, and the phase of writing process used were merged by commonalities and remained continuous variables for the analysis of teacher instructional practice and student writing activity. The scores from SRI administrations were not changed for analysis. Variables for grade level, student ethnicity and student gender were dummy-coded.

A comparison of the descriptive statistics revealed improvement of SRI scores for all grade levels. In both the first and second administration of SRI scores, students in eighth, ninth, and tenth grade earned the highest score possible on the SRI. A comparison of the mean SRI scores of both administrations with the lexile and corresponding grade levels (Scholastic, Inc., 2005) indicates student performance at appropriate reading levels with the exception of high school students; the mean of sixth grade scores were lower than grade level and the mean scores for seventh and eighth grade students exceeded the corresponding grade level range. Mean scores for high school students were lower than for seventh and eighth grade students.

5.1.1 Research question 1: Are there statistically significant differences in the instruction of writing between middle and high school classrooms?

The results of the ANOVA suggest there are a few statistically significant differences in the teaching practices of writing instruction between middle and high school language arts and English teachers. The sole genre indicating statistically significant differences between middle and high school teachers was time spent on academic writing (the

combined variable of letters, research report, extended response, functional documents, persuasive essays, descriptive writing, and short answer); middle school teachers spent more time on instruction for this genre than high school teachers. Differences in the combined variables entitled phases other than writing (prewriting, revision, and publishing) were statistically significant with middle school teachers spending more time on these phases than high school teachers.

The results of the ANOVA indicate that the time spent on the instruction of academic writing for middle school students is greater than for high school students for the teachers included in this study. This finding is consistent with earlier research indicating the greater attention of literacy achievement in the lower grades than in the upper grades (Alvermann, 2005a; Vacca, 2002). Instruction of academic writing may include lessons on understanding and interpreting text, skills that may be weaker in younger students (Flood & Lapp, 2000; Hoffman, 1991; ODE, 1999; Shanahan, 1984). Obvious explanations exist for these observations. Middle school students have less experience in writing than high school students by virtue of their younger age and having spent less time in school thus requiring a greater amount of instruction. By the time a student reaches high school, he is likely to have been exposed to the requisite demands of writing and should not need as much instruction as younger students. Additionally there may be specific curricular requirements in writing instruction for specific grade levels that demand varying amounts of time to complete; the context of writing is dependent on the curriculum exposed to in school (Dyson, 1990; Hicks, 1996). The participating middle and high school teachers in one district are required to have students produce four specific writing products – a business letter, narrative, research paper, and persuasive

essay. The specific requirements of each genre change little throughout the middle and high school making much of the normal instruction for a specific genre redundant. Providing instruction on what students already know is counterproductive for increased student achievement and engagement.

The time spent on the instruction on the phases of writing other than writing (prewriting, revision, and publishing) had also statistically significant differences in middle and high school classes. Prewriting entails brainstorming and the organization of ideas (Hayes & Flower, 1983, Lindemann, 1995; Vacca & Vacca, 1989; Vacca & Vacca, 2005; Zimmerman & Risemberg, 1997b). The phase of revision entails rereading (Flower & Hayes, 2003) and organizing material (Elbow, 1973). The phase of publishing is the presentation of students' written work to an audience. More experienced students in organizing prior knowledge, revision, and publishing should need less assistance in these activities than students with less experience. Instruction on what is already known by students reduces the amount of time available to spend on learning new writing techniques as well as the time available for reading; in addition, the teaching of what students already know can disengage them from future classroom activities.

The variables for teaching methodology (formal instruction or other instruction) did not yield any statistically significant differences between middle and high school participating teachers. Participating teachers reported the use of explicit instruction, cooperative groups, and the use of graphic organizers, strategies which are recommended by previous researchers (Burns, 1999; Combs, 1997; Langer, 2002; Lindemann, 1995; Robb, 2003; Tompkins, 2001). The descriptive statistics suggests that the participating teachers used a variety of instructional methodology in their instruction on writing and

the results of the ANOVA indicate no distinctive differences exist in the methodologies used by middle and high school teachers. This pattern could be attributed to various origins. The teaching of composition may not be required for secondary pre-service teachers in a similar manner to the teaching of reading as observed by the Carnegie Corporation (2006). As a result, teachers may apply strategies learned at in-service training or the strategies from their own experience as writers to their instruction on writing. Teachers may also rely on materials provided by the classroom text on composition. The middle and high school teachers in District “1” used the same textbook publisher; the grade level exercises provided by the publisher are similar for middle and high school grades. Another possible explanation is that pre-service language arts and English teachers may have been exposed to instruction on the teaching of reading through coursework experiences, degree, or textbook used in classes. Both formal and other instruction are used in the teaching of reading, and teachers may have applied the reading strategies to writing.

Analysis indicated there were no statistically significant differences in the genres middle and high school students used for writing or in the phase of the writing process used. Previous research does not make the distinction of student’s age when discussing the phases of the writing process (Burns, 1999; Christenbury, 1994; Flower & Hayes, 1994; Lindemann, 1995; Murray, 2003; Perl; 2003; Tompkins, 2001; Vacca & Vacca; Vygotsky, 1962; Williams, 1989). The differences in writing activities between middle and high school students were not statistically significant although the time students used the phases of the writing instruction other than writing neared statistical significance. The data analysis in this study indicates that middle school students used these phases far

greater than high school students, and reasons for this pattern can only be speculated. Being more experienced writers, high school students may not need as much time or be given as much time to prepare to plan, edit, or publish writing products as needed by middle school students. As more experienced writers, high school students should have a greater sense of what is needed to produce a writing assignment that is sufficient for their teachers and need less support.

The differences between the instructional practices of middle and high school teacher participants and writing activities of middle and high schools students provide insights into what is done in classrooms. Yet these differences do not show the relationship between reading and writing.

5.1.2 Research question 2: To what extent does the amount of time teachers provide writing instruction, the method of writing instruction, the genre of the writing addressed in the instruction, the process of writing discussed, and student gender predict students' reading test scores?

The SRI scores from the two administrations were intercorrelated. The resulting high intercorrelation eliminated the scores from the first administration of SRI scores from further consideration in the model. The relationship of the scores from the two administrations of the SRI supports the consistency of reading progress in students; good readers remain good readers as they get older (Alvermann, 2005b; Cunningham & Stanovich, 1977; Quirk & Schwanenflugel, 2004); those students with higher SRI scores on the first administration were likely to earn higher scores on the second. Poorer readers were likely to remain poorer readers within a span of 10 weeks. The purpose of this study

was not to provide specific reading remediation but, rather, to study the relationship that writing and writing instruction have with it.

The variables of gender and eligibility for free or reduced lunch were removed from the teacher practices model and the phase of the writing process other than writing was removed from the student activity model. The removal of the eligibility for subsidized lunch from the model contradicts the national patterns of reading proficiency (Lee et al., 2007), which identified an achievement gap based on levels of family income. The aggregate results of the national and statewide data do not take into account the remediation for reading provided by individual districts. District “1” has employed five literacy coaches for several years; District “2” employs at least one curriculum coach who works in a similar capacity. The result of steps like these taken by individual districts may have resulted in more students reading within the grade level lexiles.

Ethnicity was the first significant variable found in the model. The results of the model indicated that being African American negatively impacted reading proficiency. The efforts of the two school districts to improve reading proficiency did not eliminate the racial achievement gap as they seem to have done with the income gap.

Of the other variables analyzed in the stepwise regression, time spent on the formal instruction on writing was the only statistically significant predictor of the second set of SRI reading scores that had a positive relationship with reading scores. Instruction on writing shares characteristics with instruction on reading. The recommended instructional approach to improve literacy is explicit instruction (Alvermann, 2005a; Ambe, 2007; Combs, 1997; IRA, 2002; NCTE, n.d; Richek et al., 2002; Tompkins, 2001). The variable of formal instruction for this study was comprised of two methodologies of explicit

instruction – lecture and modeling. When providing formal instruction to students, teachers may use technology that requires reading even when the instruction is about writing. In addition when formal instruction is given, students may be required to take notes or may be accountable for the information presented. The interest of students drawn to the information presented with technology and the increased actions of writing notes on the part of students result in active learning. The increase in reading when explicit instruction is used to teach writing suggests the effectiveness and transferability of this methodology to related domains.

Teachers may select specific instructional methods and content because the students they are teaching are poor writers. The majority of students in the study was in ungrouped classes and had varying needs of writing instruction, which might have caused negative results on the analysis of some instructional methods. Time spent on the instruction during the writing phase of the writing process, on academic writing, and on journals have a negative relationship with reading scores. Another explanation is that these instructions were too specific in content. Langer (2002) warns that instruction that is limited reduces its effectiveness. These types of instruction may not increase reading proficiency since they exclude the connection to prior knowledge (Sadler, 2005).

Instruction on the writing phase of the writing process excludes planning and evaluation processes, skills which could be transferred to reading proficiency (Flood & Lapp, 2000; Lewin, 2003; Vacca & Vacca, 1989). By secondary school matriculation, students may have already been exposed to instruction on the writing phase of the writing process, academic writing, and journals, and any subsequent instruction may be superfluous. Students who had instruction on using the writing phase of the writing process,

instruction on academic writing, and instruction on journals may find the repetition of this information to be of little interest to them as they are not learning new material. The time spent on these instructions reduces the amount of writing time for students. When a teacher provides writing instruction on the writing phase of the writing process, academic writing, and journals, students are not actively writing. The analysis in the study did not separate the content of instruction from the methodology employed by the participating teacher. Thus the varying results on time spent on instruction for writing supports the idea that no one approach is uniformly successful for reading remediation (IRA, 2002). At the same time, however, certain types of instruction may be detrimental to reading proficiency.

5.1.3 Research question 3: To what extent does the amount of time students spend writing, the genre of writing students do, the particular part of the writing process students use, and students gender predict students' reading test scores?

The results of this research question indicate statistically significant differences in reading scores due to ethnicity, grade level, and specific student writing activities. The findings on ethnicity support the existence of a racial gap in reading, although somewhat greater than on the national level than in local schools (Lee et al., 2007) and is consistent with national trends that identify African American students achieving lower scores than students of other ethnicities (Lee et al., 2007).

Grade level is a statistically significant predictor variable for reading scores in this study and is consistent with earlier findings. Previous research indicates that scores for older students are higher than for younger (Lee, et al.; Scholastic, Inc., 2005). Other research observed that writing impacts reading comprehension in older children more

than in younger children (Shanahan, 1984). As children age, the curriculum in school becomes progressively more difficult. Greater demands are made for both reading and writing. Additional practice of the skills in reading and writing provide the experience needed to meet the increasingly challenging demands. Cognitive difficulties become harder to hide and increasingly affect learning as well as assessment. Successful students become more proficient at using the graphic system required for writing. More writing provides more opportunity to form words. As observed in the model, forming words in writing requires thought that may be applied to reading when encountered in reading. Problem-solving in writing is a skill that can be transferred to reading.

Time spent on the student writing activity without regard to writing conventions had a positive relationship with reading scores. This variable was comprised of creative writing, narratives, and other genres that were not of an academic nature or a journal assignment. Both creative writing and narratives permit the writer to express himself through words on print through jokes or personal experience (Lindemann, 1995). Creative writing can include stories, verse, and song lyrics, which often are the result of deep thought and feelings on the part of the writer. Narratives often reflect aspects of the life and experiences of the writer. Both creative writing and narratives stem from within the writer as opposed to academic writing which includes research papers and essays from material positioned outside of the writer. Unlike academic writing, which involves the intellectual processes of definition, process, and information, creative writing and narratives can be emotionally based, thus making the use of prewriting and editing a source of interference in composition.

The time students spend on all of the phases of the writing process and journals had a negative relationship with reading scores. Prewriting is the planning of writing and includes brainstorming, research, and the organization of ideas (Burns, 1999; Christenbury, 1994; Lindemann, 1995; Murray, 2003; Tompkins, 2001; Vacca & Vacca, 1989; Vygotsky, 1962; Willimas, 1989). None of the acts of planning are directly transferable to prereading. Planning in writing is generative by the writer whereas planning in reading is not. The cognitive elements of these acts are generating information, setting goals, and organizing prior knowledge (Zimmerman & Risemberg, 1997b). Readers do not have to generate the information as writers do but may set goals on the amount they read. Writers are required to generate the information through text and may set goals about both the quantity and quality of their writing. Both readers and writers need to organize prior knowledge. The results of this study suggest that the aspects of prewriting that link to reading are overshadowed by those aspects that do not.

Revision, the second aspect of the writing process other than writing, may be too different to transfer to reading. The acts of revision include rereading, reviewing, and evaluating (Flower & Hayes, 2003), correcting (Emig, 1981; Vacca & Vacca, 1989), and rewriting (Garica & de Caso, 2004). Of these various acts, only rereading and reviewing are directly transferable to reading. Repeated reading is a strategy recommended by previous research (Rasinski, 2003) and appears in various reading programs (Horner & O'Connor, 2007; Kepron, 1998; Quirk & Schwanenflugel, 2004; Spiegel, 1005). The other acts of revision are not applicable to reading as readers rarely receive the opportunity to correct or modify published text.

The writing in journals also does not share skills for reading and is often done during a short time period, which may negate a deeper understanding of material and, consequently, reduce reading proficiency; Marnell and Hammond (2005) note a cause and effect relationship of understanding of material and reading proficiency. Journals may not be graded immediately and cause the opportunity for immediate feedback on knowledge, as defined by previous research (Marnell & Hammond; Wooten & Cullinan, 2004) to be lost. Unchecked writing without teacher or peer comments does not lead to improvement in writing or thinking. Weaknesses in journal responses that are narratives perpetuate similar linguistic weaknesses as in reading (Weber, 1990). Since students tend to writing on journals using paper and pencil, there is not necessarily a correction of phonics errors. Phonics is a key process in reading (Ambruster & Osborn, 2001; Boget & Marcos, 1997; Lapp & Flood, 2005; ODE, 1999), and errors in phonics are problems for secondary readers (Ediger, 2005). When a student spells a word incorrectly when writing suggests that he may fail in recognize the word when reading. The patterns of teacher response to journals makes journal writing a liability for reading proficiency and may explain why journal writing negatively predicted SRI scores.

5.2 Discussion

Reading proficiency has only modestly increased in recent years for secondary students (Lee et al., 2007). What few reading programs exist for secondary students are not universally used or effective (Barry, 2000). Although the relationship between reading and writing has been studied (Grobe & Grobe, 1977; Langer, 1986, Loban, 1964, Lunsford, 1978; Shanahan & Tierney, 1990; Sovik et al., 1996), none have considered writing as an alternative source of remediation for remedial secondary readers. Writing is

an activity done regularly in language arts and English classes as well as in other content areas albeit in different forms, genres, and phases of the writing process. This study was an attempt to capture and isolate the aspects of writing that most strongly effect reading proficiency at two different grade levels, which are reflected in the model presented earlier (see Figure II).

The descriptive statistics and results of the stepwise regressions obtained from this study are consistent with those in the *Nation's Report Card: Reading 2007* (Lee et al., 2007); reading proficiency slowly improves, and an achievement gap exists between students of different ethnicities. The scores from two administrations of the SRI used in this study demonstrated an increase in scores over the time period of teacher participation, yet increases in mean scores did not necessarily translate to exceeding grade level performance. This finding is consistent with the previous research suggesting good readers improve their reading skills and weak readers do not (Alvermann, 2005b; McQuillan & Au, 2001). The high intercorrelation between the scores of the two SRI administrations is a further indication of consistency in students' reading levels. Even though the SRI is designed to provide information on the individual growth of each student, a 10-week span between tests does not indicate long-term growth desired in value-added progress. The model (see Figure II) presumes that sufficient time is spent to develop the requisite knowledge and skills for writing that students need to improve reading proficiency.

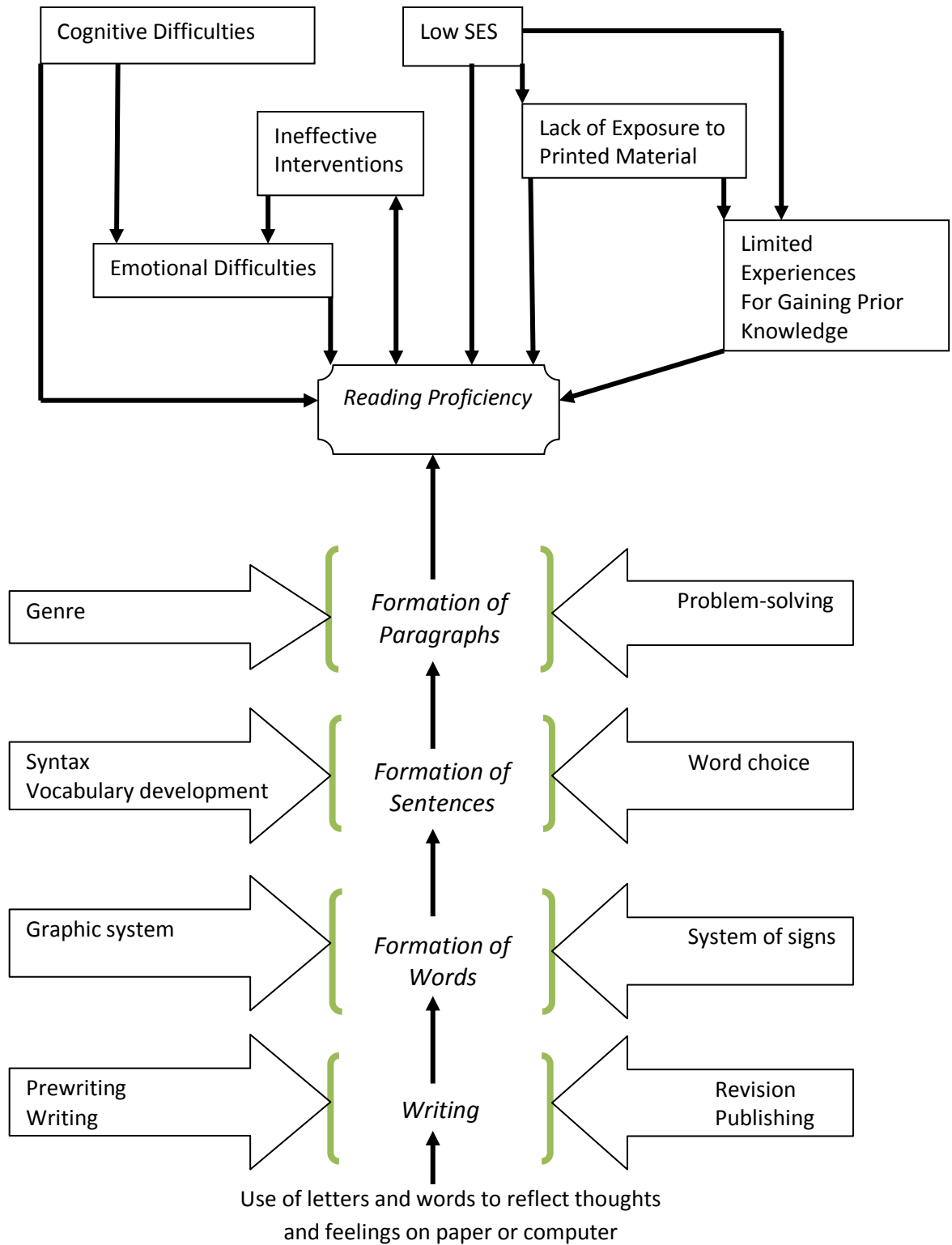


Figure 2. Negative and positive influences on reading proficiency. (Negative influences are displayed in rectangles and positive influences are displayed in brackets.)

While students average scores improved from the first administration of the SRI to the second, eighth grade students achieved higher scores than ninth and tenth grade students. Two specific reasons may explain this pattern of performance. First, more of the participating middle school teachers could have taught honors sections than participating high school teachers. Ungrouped high school classes in District “1” often have students reading significantly below grade level. The resulting SRI scores of struggling readers lowers the average score for the grade level. A second reason could be demographics. The participating classes from District “2” were largely comprised of non-African American students in District “1”. This second reason is supported by the performance of District “2” by the State of Ohio (Stephens, 2007).

Grade level was a statistically significant variable in the student activity analysis. The results indicated that older students achieved higher scores on the SRI than younger ones. By virtue of being older, high school students are expected to achieve higher reading scores than younger students. Students are able to use previously learned strategies as they progress through school. In addition, students increase their exposure to different instructional methodologies as each year, the cumulative number of teachers in their matriculation increases. Maturity occurs each year as well. Students become more aware of how they learn and can define what they will do in school and what they will not do in school. They also become more aware of themselves as writers. Students, if not explicitly taught different, will develop their own writing processes. For many students these processes are two short steps – get the assignment and write. If not taught otherwise or made mandatory, they will not engage in prewriting or revision. Their writing process

condenses the formation of words, sentences, and paragraphs. While some thought may enter into their process, they largely do not allow time for critical thought, a skill vital to reading proficiency. Quickly produced writing reduces the opportunity for students to decide on the best vocabulary word in forming sentences and of problem-solving as a component to forming paragraphs in the model (see Figure II). If students do not develop their sentence formation, their paragraph formation and reading proficiency will be compromised as well.

Grade level differences were not specifically considered in the framework developed for this study (see Figure II). Yet these differences are apparent in the positive influences on reading proficiency. As students progress to higher grades in school, they are afforded additional opportunities to write. Reading and writing share almost identical processes (Langer, 1986; Lewin, 2003; Rosenblatt, 1994; Shanahan & Tierney, 1990; Tierney & Pearson, 1983; Wittrock, 1983). Words are letters strung together in a prescribed manner. As a child writes out a particular word, he becomes aware of the letters that comprise the word. As the child writes the word more frequently, the child gains practice with the word and exposure to the letters that form the word. Regular writing of a word increases the familiarity with it so when encountered in different contexts, it may be more easily recalled. Writing may require a greater knowledge of a particular word since there are no context clues as when encountering an unknown word in printed text. The logic of writing a word improving the fluency of reading should extend to adolescent readers as well as emergent readers. The increased familiarity with word usage in sentence and paragraph production should improve reading proficiency (see Figure II); there is no evidence to suggest that the skills in writing are not at some level transferred to reading

skills. The second two of the three of the research questions were generated out of the sharing of processes that writing has with reading. Unfortunately, the model used could only attempt to capture the shared processes of before, during, and after activities for reading and writing; it was not designed to capture the cognitive processes.

The findings of this study illustrate aspects of the relationship between writing and writing instruction and reading proficiency. Only one specific instructional practice of teachers positively influenced reading proficiency, formal instruction. Yet two combined genres, academic writing and journals, joined instruction on writing to negatively influence reading proficiency. These findings suggest much about the transferability of writing instruction to reading. The skills learned by students from formal instruction in writing largely resemble those in reading as noted in the model (see Figure II). Taking notes during formal instruction is not mechanically or cognitively different for reading and writing. Yet instruction specifically on the specific act of writing may be too different from instruction on the act of reading to transfer. Instruction on academic writing and on journals is redundant to many students and not transferable to reading. By secondary school, students have experienced the steps in forming the paragraphs that, when combined with other paragraphs, produce an essay. Extended periods of instruction are not needed. The instruction on journals, once given, need not be repeated regularly. As shown by the results of the ANOVA, adequate instruction on journals and academic writing is provided by middle school teachers and should be only minimal in high school.

The influence of the ethnicity of the student receiving instruction on writing was statistically significant in this study although not delineated in the model (see Figure II). Results of both the teacher practice analysis and student writing activity analysis indicate

ethnicity as of great importance. That ethnicity enters into performance when measured by the instructional practices of teachers is dire cause for concern. The disparity based on ethnicity of SRI scores suggests that the African American students in the study may be the recipients of any of the negative factors contributing to reading proficiency. If these students were from low income families, they would have had limited exposure with printed material or had little experience that would have to be gained prior knowledge for material addressed in school. Any gaps in reading would have further exasperated with ineffective interventions received in school. If ethnicity replaced low SES on the model, opportunities could be sought to provide additional exposure to printed material and experiences for gaining prior knowledge to preschool African American students. Of more likely relevance in the model are the emotional issues that contribute to lower reading proficiency. Within adolescence, students are influenced by others who may impede reading progress (Richek, et al., 2002). In addition to facing adolescent-related issues, African American students also face cultural influenced issues (McShepard et al., 2007; Sowell, 2005). Thus, ethnicity, as a variable in this study, could have captured the effect of other negative influences on reading proficiency, which should be considered when generalizing the results.

Ethnicity was the first variable to be identified as a significant predictor of reading scores in the analysis of the second and third research questions. Unlike the influence of ethnicity on instruction, ethnicity as a significant predictor on reading proficiency was also consistent with previous research; White students earned higher test scores on the achievement tests than African American students (Hoover et al., 2005; Thurmond, 1977). Hoover, Politzer, and Taylor posit bias in tests due to ethnicity. The literature

about the SRI does not include discussion of performance differences from students of different gender or ethnicity. In addition to possible test bias, lower performance in reading assessments suggests that the interventions provided are ineffective for African American students. Interventions that do not engage students contribute to emotional issues resulting from poor performance and create a recursive cycle.

Writing as an intervention is not considered by educators as the means to break this cycle. Expressing thoughts on paper can be cathartic in having students objectify issues that block school performance. The practice of composing in this manner encourages students to write by providing successes in written expression. The acts of writing involved can cumulate to positively influence reading proficiency (see Figure II). These acts of writing are often more thoughtful and developed pieces of writing and will not detract from reading proficiency. By sharing a private conversation with a teacher through writing, the peer and cultural influences that detract from literacy can be minimized. Nonacademic writing permits all of these acts to occur.

The only student writing activity to have a positive relationship with reading scores was nonacademic writing. This outcome may be explained by a four considerations. First this genre has an informal style; writing is in the students' own words and resembles their speech more greatly than academic writing. Second, the familiarity students have with the words in their writing contributes to greater fluency when reading. Third, because of the personal nature of nonacademic writing, students may deliberate on word choice, vocabulary, and syntax more greatly than they do for academic writing. Word choice, vocabulary, and syntax in writing contribute to reading proficiency (see Figure II).

Fourth, students may complete a nonacademic writing assignment out of interest whereas they resist completing an academic one.

The reasons why nonacademic writing had a positive relationship with reading scores may be identical to the reasons why academic writing does not. Academic writing uses the words of others to create a completed writing product. Students may ignore technical terms when composing a research paper and not take the time and effort to learn them. Some students may become disengaged in the academic writing assignment and not complete it, thus eliminating any potential benefit to reading proficiency from completing a writing assignment in this genre.

Journals also had a negative relationship on SRI scores. This genre is a quickly produced writing product that rarely receives the critical feedback so important to good writing. Teachers in access of 100 students per day rarely have the luxury of time of leisurely and critically addressing the thoughts of students much less the mechanical errors such as spelling, punctuation, or vocabulary found in their journal entries. These elements of writing contribute to reading proficiency as seen in the original model (see Figure II). If journals negatively influence reading proficiency and other writing, the question arises why they are used uniformly by teachers. Unfortunately the answers tend not to be of an academic nature. A student can use a journal opportunity to privately convey a message or question to the teacher with which they seek adult input. Arguable, developing a positive relationship with a teacher should improve academic performance, but as noted by the results of this study, it was not evident in SRI performance.

Neither the model (see Figure II) nor analysis reflected the percentage of students completing writing activities. Participating teachers may have allotted the time for

students to complete their writing activities, but there was not measure of determining how many actually did. Differences in the rates of completion between journals, academic writing, and nonacademic writing may account for the differences in the relationship of these writing genres with reading scores.

With the additional insights into the relationship between reading and writing gained by the results of this study, the model (see Figure II) should be revised (see Figure III). This study did not attempt to address the cognitive and emotional difficulties and the ineffective interventions that adversely impact reading proficiency; these factors are unchanged from the original model. Other negative factors in the model are changed. The factor of low social economic status (Hart & Risley, 1995) is replaced by ethnicity making the revised model consistent with previous research (Lee et al., 2007). The differences due to ethnicity in reading scores found in this study may be due to a lower frequency of writing opportunities. The factor of limited experiences for gaining prior knowledge is changed to journal writing, which involves a more superficial thought process than other forms of writing. The influence of peers is captured in the revised model and has been previously found to diminish reading proficiency (Richek, et al., 2002).

Grade level has a dual affect in this model (see Figure III). It is a negative factor for younger students; the reading proficiency of younger students is due to less reading as a course of being younger. At the same time, grade level is a positive factor for older students; students in the higher grade have spent more time reading and writing than those younger. As a positive factor of writing proficiency, grade level is placed in the same location as formal instruction. Formal instruction often involves the taking of notes,

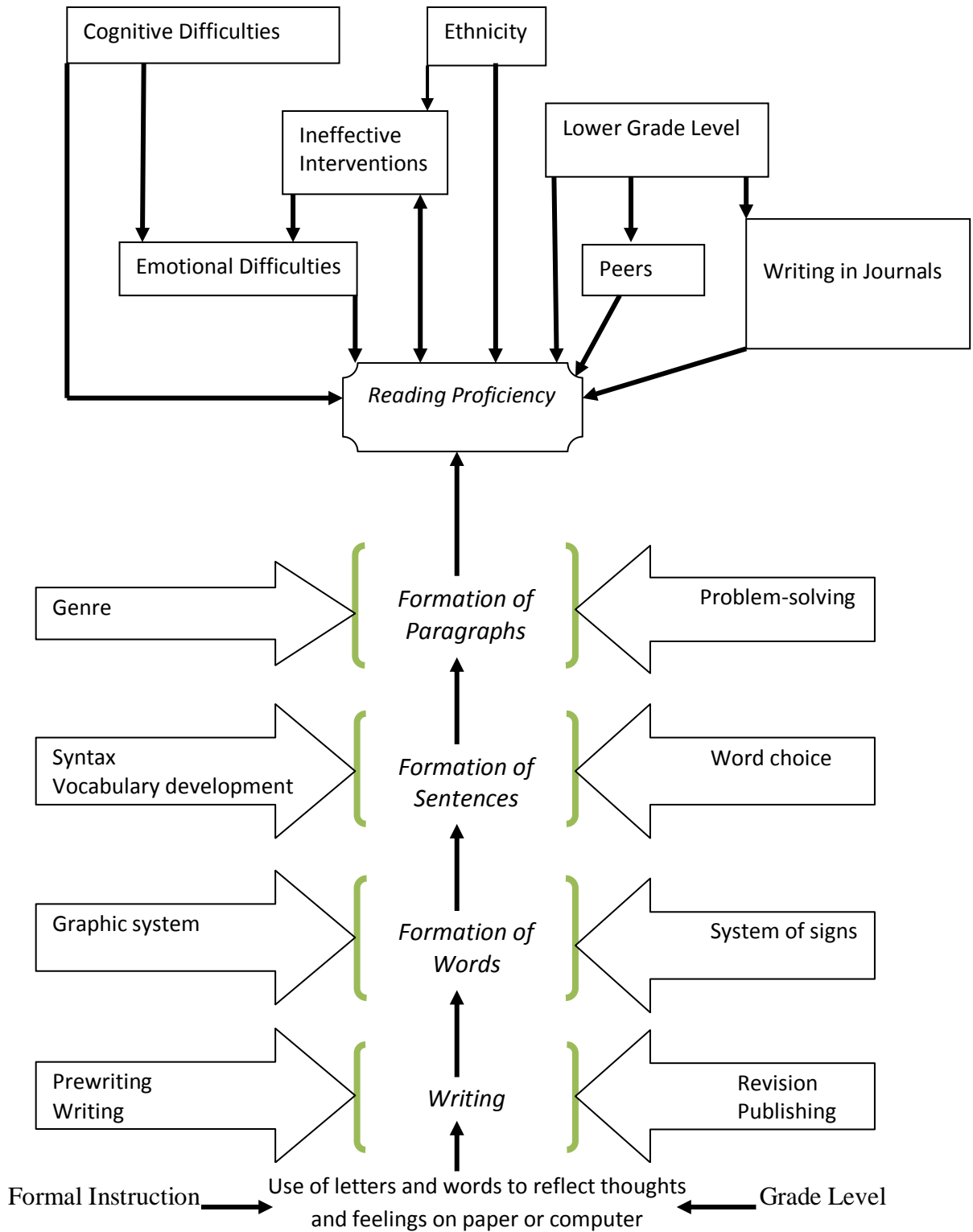


Figure 3. Negative and positive revised influences on reading proficiency. (Negative influences are displayed in rectangles and positive influences are displayed in brackets.)

which requires the specific attention of students. The subsequent activity on the part of students utilizes the steps in the formation of paragraphs. The influence of these steps on reading proficiency remains unchanged in the revised model.

5.3 Implications

The results of this study demonstrated that reading proficiency is affected by writing and writing instruction. Yet the results of the statistical analysis and the framework model are not closely aligned. Despite the differences, implications for classroom use as well as future research can be made. Teachers should attempt to compensate for as many of the negative influences on reading proficiency as possible. Whenever possible, instruction of secondary students should attempt to provide the opportunities for students to obtain the prior knowledge necessary for better comprehension. Instruction on writing should be provided by lecture and modeling. Informal instruction (cooperative learning, graphic organizers, and other methodologies) may result in ineffective interventions when heavily used. The reliance on informal instruction should be challenged.

Teachers should also focus on using the components of writing with a goal of improving reading proficiency. Rather than assign genres that negatively influence reading proficiency such as journals, teachers should insist on students using the process of writing for composition to further writing and critical thinking skills. Teachers should be aware of students who need assistive technology when writing to compensate for the frustration of students who experience difficulty when physically forming letters and words with pencil and paper. Immediate or near immediate feedback must be given for writing assignments to guide students in syntax, vocabulary, and word choice.

The implications for researchers echo many of the implications for classroom teachers. Efforts should be made to isolate each negative influence of reading proficiency for causation. Although low family income cannot be remedied through research, the effects of it can be reduced by better understanding of the deficits experienced in school and the strategies teachers can use to reduce the influence. The elements of interventions should be reviewed to ensure implementation on the effective parts and reduction of the detrimental parts.

Researchers should also seek to isolate the stronger influences of writing on reading proficiency. The frequency and quality of the phases of the writing process should be identified and studied. The formation of words, choice of words, and development of syntax should be studied for a better comparison with the cognitive processes of reading. Researcher should further analyze the genres used in writing and their relationship to reading proficiency. The problems-solving element of forming paragraphs needs to be examined for a direct influence as well.

5.4 Limitations of the Study

Numerous limitations should be considered when interpreting the results of this study:

- (1) The recruitment of teachers was limited to those districts licensed for SRI, which limited the randomness of the selection and resulted in a small sample size. The largest subsample were comprised of those who personally knew the researcher and saw her on a regular basis. Only two of the teachers in the study worked in a different district than the researcher.
- (2) Due to the small number of participating classrooms, the interaction between the instruction and student writing activity could not be analyzed. A larger sample is

needed to analyze the data hierarchically. Although an hierarchical analysis would improve the generalizability of the results, it would not permit an experimental design which is always preferable; no teacher or administration would agree to eliminating writing instruction and student writing activity.

- (3) This study did not consider the number of students in each class as a variable. Class sizes ranged from 15 to 30 students. The larger the class, the less likely a student will receive individual assistance when writing.
- (4) Teacher participants were limited in dates for administering the SRI due to insufficient technology resources available for the participating teachers. The second SRI may not have been have been administered exactly 10 weeks after the first administration.

5.5 Recommendations for Practice and Future Research

5.5.1 Recommendations for Practice

Because there were few statically significant findings on which genre, methodology, or phase of the writing process predicts reading scores, the recommendations for practice are limited and should be use with caution. The results do suggest, however, that the following should be considered:

- (1) Middle school teachers should limit the amount of time spent on instruction on academic writing to less than 200 minutes for a 10 week period. Students in classes with more than 200 minutes over 10-weeks experienced an adverse effect on their SRI scores.
- (2) Formal instruction should be included in lessons with a writing component and exceed 200 minutes for a 10 week period. Students in classes with more than 200

minutes over 10-weeks experienced a positive effect on their SRI scores.

- (3) Instruction on the writing of journals should be reduced to zero. Teachers spent an average of 37 minutes over 10-weeks writing in journals, which negatively influenced SRI scores.
- (4) Students should spend more time on nonacademic writing. Nonacademic writing has a positive relationship with SRI reading scores. During 10 weeks, students spent an average of more than 150 minutes writing these genres and had an increase of .43 points per minute.

5.5.2 Recommendations for Further Research

- (1) Multivariate measures must be used to continue the study of the impact writing has on reading proficiency as reading and writing are each multidimensional. The use of Hierarchical analysis would capture the interaction of the teacher practice and student writing activity to provide additional insight into their contribution to reading proficiency.
- (2) The variables in future studies analyzing the impact writing and writing instruction have on reading proficiency should include cognitive processes of reading and writing. Of particular concern are the processes of fluency, vocabulary, and comprehension.
- (3) Research should use a more common reading assessment and greater remuneration to capture a larger sample of both middle and high school students and teachers. The choices of reading proficiency assessments were limited as not all school districts utilize the same reading assessments. Should no other reading assessment be more commonly used, contact out-of-state universities for assistance in garnering

a greater number of participants. Larger stipends for teachers would also increase the number of participants and the duration of data collection.

- (4) Studies should be designed to include the impact of reading and writing in other content areas. Tenth grade high school students are eligible for AP History, a course both reading and writing intensive. The influence of such course should be considered when designing a study.
- (5) Other student variables should be included to capture the effect of age, attendance, grade earned, and class size in the language arts of English class.
- (6) A more sensitive survey is needed to capture either writing instruction and/or student writing activity. A segment of the research should also include a qualitative questionnaire or a journal to obtain the participating teachers' views on writing and writing instruction.

5.6 Conclusion

This study was designed to investigate the relationship between writing and writing instruction with reading proficiency as measured by the Scholastic Reading Inventory. Quantitative data used a series of ANOVAs, factorial analysis, and two stepwise multiple regressions to examine the relationship between (a) differences between the instructional practices of middle and high school teachers for writing instruction and student writing activity; (b) reading and writing; and (c) reading and writing instruction. Results of this study indicate differences between middle and high school teaching practices and student writing activities. Ethnicity and the time spent on four instructional practices of teachers were statistically significant predictors of SRI scores although the time spent on three instructional practices had a negative relationship with the SRI scores. Students' ethnicity

and grade level and the time spent on writing journals were statistically significant predictors of SRI scores; time spent on writing journals had a negative relationship with SRI scores.

The goal of President Bush was to achieve a higher level of literacy by 2014. Current reading programs have not adequately addressed the needs of remedial readers in secondary schools. Writing should be further considered as a remediation tool. As technological advances enter more schools, additional tools for remediation and the study of improving reading proficiency in students will become easier to conduct.

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APPENDIX

APPENDIX A
Institutional Review Board Approval



Cleveland State University
College of Graduate Studies and Research
Office of Sponsored Programs and Research
Institutional Review Board (IRB)

Memorandum

To: Joshua Bagaka's
Urban Education
RT 942

From: Daniel P. O'Donnell
Consultant for Compliance,
Institutional Review Board
Office of Sponsored Programs & Research

Date: 18 October 2007

Re: Results of IRB Review of your project number: 27253-BAG-HS
Co-Investigator: Donna Feldman

Entitled: The impact of writing instruction and writing on reading standardized test scores

The IRB has reviewed and approved your application for the above named project, under the category noted below. Approval for use of human subjects in this research is for one year from the approval date listed below. If your study extends beyond this approval period, please contact this office to initiate an annual review of the project. ***This approval expires at 11:59 pm on 10/16/2008.***

By accepting this decision, you agree to notify the IRB of: (1) any additions to or changes in procedures for your study that modify the subjects' risk in any way; and (2) any events that affect that safety or well-being of subjects.

Thank you for your efforts to maintain compliance with the federal regulations for the protection of human subjects.

Approval Category:

Date: 10/17/2007

- Exempt Status: Project is exempt from further review under 45 CFR 46.101 (b) (2)
- Expedited Review: Project approved, Expedited Category
- Regular IRB Approval

cc: Project file

Mailing Address: 2121 Euclid Avenue, KB 1150 • Cleveland, Ohio 44115-2214
Campus Location: Keith Building, Room 1150 • 1621 Euclid Avenue • Cleveland, Ohio
(216) 687-3630 • Fax (216) 687-9382



Cleveland State University

Institutional Review Board for Human Subjects in Research Application for Project Review

I. Title Page

Date: (mm/dd/yy): 06/18/07

Transaction Number (office use only): 27253-BAG

Project Title The Impact Of Writing Instruction And Writing On Reading Standardized Test Scores

PRINCIPAL INVESTIGATOR OR ADVISOR

Name: (Last, First): Bagakas, Joshua

Degree Attained: PhD, ThD, PhL, PhB

Department: URBAN EDUCATION Title: Director/Assoc. Director

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Home Phone: ()

Has the investigator completed the CITI course in the protection of human subjects? Yes No

CO-PRINCIPAL OR STUDENT INVESTIGATOR

Name: (Last, First): Feldman, Donna

Degree Attained: MA, MS, MBA, MSW

Department: Urban Education Title: Student

Electronic Mail Address: D.Feldman@chuh.org

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Home Phone: (216) 297-9100

Has the investigator completed the CITI course in the protection of human subjects? Yes No

If this is a student investigator, please indicate status:

Undergraduate

Master level student

Doctoral level student

and level of involvement in the research:

Assisting Faculty Research

Thesis

Dissertation

Classroom project: Class name/number _____

If there are more CSU investigators, please complete the "Additional CSU Investigators" form

PROPOSED PROJECT DURATION (research may not begin prior to IRB approval):

From (mm/dd/yy): 09/01/07

To (mm/dd/yy): 05/31/08 (date following anticipated approval; maximum one year later)

If expected duration of project exceeds 12 months, continuation of IRB approval will require additional action by the IRB. Renewal requests will be sent to you prior to the expiration date.

Type of funding or support: None

FOR IRB USE ONLY

Initial Evaluation	Final IRB Action
<input type="checkbox"/> Approve as is	<input checked="" type="checkbox"/> Exempt Status: Project is exempt under 45 CFR 46.101 <u>B2</u>
<input checked="" type="checkbox"/> Requires Revision before evaluation or final action	<input type="checkbox"/> Expedited Review: Approval Category _____
<input type="checkbox"/> Full IRB review required	<input type="checkbox"/> Regular IRB approval
	<input type="checkbox"/> Other: _____

Reviewer: G. Stead Signature: G. Stead Approval Date: 6/17/07

APPENDIX B

Teacher Recruitment PowerPoint

Using Writing to Improve the Reading Achievement of Secondary Students

Donna Feldman
Cleveland State University

Statement of the Problem

- ✗ Gap between good and poor readers widens in school (Quirk & Schwanenflugel, 2004)
- ✗ Secondary school teachers rarely receive training in reading remediation (Ivey & Fisher, 2006)
- ✗ Poverty adversely impacts reading (Alvermann, 2005)
- ✗ Peers can adversely impact reading (Richek et. al.)
- ✗ Few reading programs exist for struggling secondary readers (Quirk & Schwanenflugel)

Research Question #1

- Are there statistically significant differences in the instruction of writing between middle and high school teachers?

Research Question #2

- To what extent does the amount of time teachers provide instruction on writing, the method of writing instruction, the genre addressed in the instruction, and the process of writing discussed predict students' reading scores?

Research Question #3

- To what extent does the amount of time students spend on writing, the genre of writing student do, the particular part of the writing process students use, and the students' gender predict students' reading scores?

Methodology: Data Sources

- ✗ Survey instrument developed for this research
- ✗ SRI scores
- ✗ Student demographics

Methodology

Student Data

- ✖ Approximately 2,150 students from four school districts
- ✖ Gender, ethnicity, eligibility for free and reduced lunch, and two sets of SRI scores

Teacher Data

- ✖ Approximately 120 secondary classrooms
- ✖ Completion of a daily survey
- ✖ Responses will be confidential

Teacher Involvement

- Read and complete consent form
- Complete survey about teaching experience;
- Administer SRI to class(es) selected;
- Complete survey each day for 10 weeks for class(es) selected; and
- Re-administer SRI to class(es) selected

Sample Survey Question

1. I spent ____ amount of time on writing instruction (in minutes):

___ 0 to 10 min. ___ 11 to 20 min. ___ 21 to 30 min.
___ 31 to 40 min. ___ 41 to 50 min. ___ 51 to 60 min.

2. I taught _____ writing today (check all that apply and the approximate minutes [min.] involved):

___ Narrative	___ 0 – 10 min.	___ Journals	___ 0 – 10 min.
___	___ 11 – 20 min.	___	___ 11 – 20 min.
___	___ 21 – 30 min.	___	___ 21 – 30 min.
___	___ 31 – 40 min.	___	___ 31 – 40 min.
___	___ 41 – 50 min.	___	___ 41 – 50 min.
___	___ 51 – 60 min.	___	___ 51- 60 Min.

Thank you!!!

APPENDIX C

Writing Instruction, Writing, and Reading Improvement Survey

Purpose: The purpose of this survey is to identify the classroom practices of secondary teachers that pertain to writing. Since you are a language arts, English, or reading teacher, I am interested in your practices. The information you share, along with the responses of others, will be used to ascertain:

1. the amount of time language arts, English or reading teachers spend on writing instruction
2. the type of writing instruction teachers provide
3. the type of writing language teachers teach students
4. the amount of writing students do in language arts, English, or reading classes
5. the type of writing students do

I ask you to share your name (as an optional item) in case I have a question and need to contact you for further qualification. However, only I will ever see your name associated with your answers; your responses are confidential. The information shared with the district, upon request, about the results of the survey will be presented in a collective fashion that does not reveal the names of the participating teachers. The daily survey will take approximately five minutes to complete; I will ask you to complete it each day for 10 weeks. The demographic survey will also take approximately five minutes; you only need to complete this survey one time. I will also ask you to provide Scholastic Reading Inventory (SRI) scores for your students from administrations taken at the start and at the finish of the survey period. I thank you in advance for your answers to this survey and SRI administration and appreciate your effort.

Your participation in this survey is voluntary. Although you can terminate your participation at any point, remuneration for your time will be provided upon completion of each semester. All participating teachers will have their name entered into a two drawings of \$250.00 each; all participants will receive \$50.00. Your completion of this survey represents your consent for me to use information you share as a part of the project's research data. It also indicates that you understand that if you have any questions about your rights as a research participant you can contact the Institutional Review Board of Cleveland State University at (216) 687-3630. Should you have any questions concerning this consent of this research project, please contact Donna Feldman at (216) 832-1196 or D.Feldman@chuh.org.

Thank you for participating in the project. I will be happy to share the final report with you when it is completed.

Directions: As mentioned in the purpose section, the following questions relate to your teaching practices of writing during this school year. The survey is divided into two parts. The first part, demographics, asks specific questions about you and need only be taken once. The section of the survey that asks about your teaching practice should be answered after each of your classes each day. If you have a substitute teacher, please designate so on your survey. I will collect your completed surveys each week for the ten-week period.

Please select two of your classes for inclusion in the daily survey for the duration of your participation. This survey will provide a measurement of your teaching practices for writing instruction. For your convenience, the following defines the terms of the survey:

Writing Product

- Narrative – story that is either fiction or nonfiction
- Letters – business, personal, or informational requests in letter format
- Persuasive – any writing that contains an argument with the purpose of persuading the reader
- Research reports – the act of writing involved in research that include taking notes, creating an outline, composition, and revision of an informational document created by the student
- Functional document – directions that tell the reader how to assemble an object or find a location
- Journals – responses to teacher-determined questions that are not grounded in literature
- Creative – poetry, plays, or monologues
- Extended response – responses to a literature-based writing prompt of at least one complete sentence
- Short answer – a phrase or small number of sentences that answer a question
- Other – graphic organizers, concept maps, charts, etc.

Instructional Methodology

- Lecture – direct verbal instruction
- Modeling – chalkboard, overhead projection, or computer-based demonstration of writing given to student
- Cooperative learning – students complete a task in a group
- Teacher conference with student – teacher provides instruction to a student on a one-to-one level
- Graphic organizers – teacher demonstration of graphic organizer, concept maps, or charts

Phase of Writing Process

- Prewriting – discussion or written assignment that plans a student’s composition
- Writing – students physically compose
- Revision – edit of writing product
- Publishing – sharing of work by oral, written, or computer presentation by student

Demographics (to be completed once)

Please type your answer in the boxes provided on the correct response. When you finish, please place in the attached envelope.

Area of licensure or certification:

Subject taught:

- Language Arts
- English
- Reading

Grade level(s)

- 6th
- 7th
- 8th
- 9th
- 10th
- 11th
- 12th

Race

- White
- African American
- Asian American
- Hispanic
- Other:

Gender

- Male
- Female

Years teaching:

Years teaching in the district:

Thank you for completing these questions.

Daily Survey

Please type your answer in the boxes provided on the correct response. When you finish, please place the survey in the attached envelope.

Period:

- | | | |
|---------------------------------|---------------------------------|---|
| <input type="checkbox"/> First | <input type="checkbox"/> Fourth | <input type="checkbox"/> Seventh |
| <input type="checkbox"/> Second | <input type="checkbox"/> Fifth | <input type="checkbox"/> Eighth |
| <input type="checkbox"/> Third | <input type="checkbox"/> Sixth | <input type="checkbox"/> I had a substitute this period |

For the following questions, please refer to the definitions of terms of the survey.

1. I spent _____ amount of time on writing instruction (in minutes):

- | | | | | | |
|--|---|---|---|---|--|
| <input type="checkbox"/> 0 to
10 min. | <input type="checkbox"/> 11 to 20
min. | <input type="checkbox"/> 21 to
30 min. | <input type="checkbox"/> 31 to
40 min. | <input type="checkbox"/> 41 to
50 min. | <input type="checkbox"/> 51 to 60 min. |
|--|---|---|---|---|--|

2. I taught _____ writing today (check all that apply and the approximate minutes [min.] involved):

<input type="checkbox"/> Narrative <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Journals <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Descriptive <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Letters <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Creative <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Short answer <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Research report <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Functional document <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Other: <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Extended response <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Persuasive <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	

3. To teach writing today, I used _____ (check all that apply and the approximate minutes [min.] of each).

___ Lecture ___ 0 – 10 min. ___ 11 – 20 min. ___ 21 – 30 min. ___ 31 – 40 min. ___ 41 – 50 min. ___ 51 – 60 min.	___ Cooperative learning ___ 0 – 10 min. ___ 11 – 20 min. ___ 21 – 30 min. ___ 31 – 40 min. ___ 41 – 50 min. ___ 51 – 60 min.	___ Graphic organizers ___ 0 – 10 min. ___ 11 – 20 min. ___ 21 – 30 min. ___ 31 – 40 min. ___ 41 – 50 min. ___ 51 – 60 min.
___ Modeling ___ 0 – 10 min. ___ 11 – 20 min. ___ 21 – 30 min. ___ 31 – 40 min. ___ 41 – 50 min. ___ 51 – 60 min.	___ Other: ___ 0 – 10 min. ___ 11 – 20 min. ___ 21 – 30 min. ___ 31 – 40 min. ___ 41 – 50 min. ___ 51 – 60 min.	

4. The phase of writing I taught was (check all that apply and the approximate minutes [min.] involved):

___ Prewriting ___ 0 – 10 min. ___ 11 – 20 min. ___ 21 – 30 min. ___ 31 – 40 min. ___ 41 – 50 min. ___ 51 – 60 min.	___ Revision ___ 0 – 10 min. ___ 11 – 20 min. ___ 21 – 30 min. ___ 31 – 40 min. ___ 41 – 50 min. ___ 51 – 60 min.
___ Writing ___ 0 – 10 min. ___ 11 – 20 min. ___ 21 – 30 min. ___ 31 – 40 min. ___ 41 – 50 min. ___ 51 – 60 min.	___ Publishing ___ 0 – 10 min. ___ 11 – 20 min. ___ 21 – 30 min. ___ 31 – 40 min. ___ 41 – 50 min. ___ 51 – 60 min.

5. My students did _____ writing in class today (check all that apply and the approximate minutes involved):

<input type="checkbox"/> Narrative <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Journals <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Descriptive <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Letters <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Creative <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Short answer <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Research report <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Functional document <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Other: <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Extended response <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Persuasive <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	

6. The phase of writing my students did was (check all that apply and the approximate minutes [min.] involved):

<input type="checkbox"/> Prewriting <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Revision <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Writing <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Publishing <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> 51 – 60 min.

7. My students spent _____ amount of time writing:

0 to 11 to 20 21 to 31 to 41 to 51 to
10 min. min. 30 min. 40 min. 50 min. 60 min.

8. For homework, I assigned _____ writing (check all that apply and the approximate minutes you feel it should take students to complete).

<input type="checkbox"/> Narrative <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Journals <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Descriptive <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Letters <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Creative <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Short answer <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Research report <input type="checkbox"/> <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Functional document <input type="checkbox"/> <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Other: <input type="checkbox"/> <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.
<input type="checkbox"/> Extended response <input type="checkbox"/> <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.	<input type="checkbox"/> Persuasive <input type="checkbox"/> <input type="checkbox"/> 0 – 10 min. <input type="checkbox"/> <input type="checkbox"/> 11 – 20 min. <input type="checkbox"/> <input type="checkbox"/> 21 – 30 min. <input type="checkbox"/> <input type="checkbox"/> 31 – 40 min. <input type="checkbox"/> <input type="checkbox"/> 41 – 50 min. <input type="checkbox"/> <input type="checkbox"/> 51 – 60 min.	

Thank you for answering each question.

APPENDIX D

Discussion and Rationale for Using the Second Administration of SRI Scores as the Outcome Variable

Under optimal and ideal circumstances, an experimental design is preferred ((Rossi, Lipsey, & Freeman, 2004). It was impossible to define a control group in this study; all language arts and English classes require writing and writing instruction. While pre- and post-test SRI scores were obtained for this study suggesting the development of a quasi-experiment and the SRI was designed to be sensitive enough to show improvement in reading for a 10-week period, the high correlation of the two sets of SRI scores ($r = .93, p < .001$) indicates little difference between the two sets of scores. A stepwise regression was used to explore the relationship of teacher instructional practices and the net SRI scores (see Table XIV).

Table XIV
Stepwise Regression Results for the Prediction of Net SRI Scores by Teachers' Instructional Practices

Predictor Variable	Step Entered	Standardized Coefficient (β)	Unstandardized Coefficient (B)	<i>p</i> -value
Phases other than writing	1	.315	.22	.000
Instruction on nonacademic writing	2	-.253	-.15	.001

Note. $R^2 = .06$

A comparison of the results from the original model (see Table XII) with the model using net SRI scores indicates the removal of ethnicity, instruction on academic writing, formal instruction, instruction on the writing phase of the writing process, and instruction on journals and the addition of phases other than the writing

phase. The variables of instruction on the phase other than writing ($\beta = .315, p < .001$) and on nonacademic writing ($\beta = -.253, p < .01$) were statistically significant predictors when using net SRI scores as the outcome variable. The variance explained by using net SRI scores as the outcome variable is .06.

The stepwise regression results for the prediction of net SRI scores by student writing activity are presented in Table XV. A comparison with the original model used in the study (see Table XIII) with the model using net SRI scores as the outcome indicates the variables of ethnicity, phase of the writing process other than writing, nonacademic writing, and the writing phase of the writing process excluded as statistically significant predictors. The only statistically significant predictor in the model with net SRI scores was grade level ($\beta = -.212, p < .001$); in the original model, this variable had a positive relationship with the outcome variable but, in the model with net scores, has a negative relationship. The variance explained by using the net SRI scores as the outcome variable is .05.

Table XV

Stepwise Regression Results for the Prediction of Net SRI Scores by Student Writing Activity

Predictor Variable	Step Entered	Standardized Coefficient (β)	Unstandardized Coefficient (B)	<i>p</i> -value
Grade Level	1	-.212	-39.54	.000

Note. $R^2 = .05$

The use of the net scores as the outcome variable was rejected for several reason. First, the variance explained by using the net SRI scores in the model was significantly lower than the original models. Second, the two of the original research

questions indicate the purpose of the study was to investigate the contributions writing and writing instruction make to reading scores; the questions did not require the analyses of changes in reading scores. The purpose of this study and its subsequent design was not to show causality but relationship and to further the knowledge about the reading and writing relationship in terms of teacher practice and student activity. Third, previous research (Lunsford, 1978; Shell et al., 1995) about the relationship between reading and writing used one administration of one reading test for analysis.