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THE RELATIONSHIP BETWEEN WRITING ACHIEVEMENT, WRITING SELF-EFFICACY, WRITING APPREHENSION AND PERCEIVED VALUE OF WRITING BY GENDER FOR THIRD-GRADE STUDENTS IN A SUBURBAN SCHOOL DISTRICT

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THE RELATIONSHIP BETWEEN WRITING ACHIEVEMENT, WRITING SELF-

EFFICACY, WRITING APPREHENSION, AND PERCEIVED VALUE OF WRITING BY

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Abstract

Writing requires strong motivation to persevere through the unique problem solving

and self-monitoring process required for a successful execution of the task. Results of writing

achievement research often reveal a gender gap. Typically, girls outperform boys at local,

state, national, and international writing assessments. This study examined the relationship

between writing achievement ability and writing motivation by gender for third-grade

students in a suburban school district. This study is important due to a dearth of information

on academic motivation in the domain of writing because what does exist is usually focused

on students from middle school to college age, not elementary age students. Academic

motivation in literacy needs to be better understood in order to both maximize instructional

practices suited toward this goal and to increase the development of self-efficacy among

students.

This study employed a quantitative approach using the following measures: self-

efficacy for writing, writing apprehension, writing valuation, the *Connecticut Mastery Test's*

Direct Assessment of Writing, and general aptitude from the *Otis-Lennon School Ability Test*

(OLSAT). The first analysis involved an examination of any differences in writing achievement scores for boys and girls, after covarying for general aptitude. Then, two regression analyses were conducted, one for boys and one for girls. Analyses were used to predict the variation in writing achievement scores by first entering ability into the equation and then entering scores for writing motivation (self-efficacy for writing, writing apprehension and writing valuation). This study included 107 general education third-grade students in this district, out of a population of approximately 300 students. For the purposes of this study, general education students are defined, as those not identified as special education students. However this definition does include students who participate in the pull-out program for those students identified as academically gifted. Results from this study provide insight for creating instructional practices critical to developing students' self-efficacy and perseverance in writing.

Results indicate general aptitude does not significantly influence writing achievement, but that there is a significant difference in writing achievement scores for boys and girls (F (1, 104) = 11.950, $p=.001$). Stepwise regression analysis indicated writing apprehension and self-efficacy influenced boys' writing achievement scores, and self-efficacy influenced girls' writing achievement scores. It appears different factors may be influencing success in writing achievement based on gender. Further research is needed to explore this issue.

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School of Professional Studies
Department of Education and Educational Psychology
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Doctor of Education Dissertation

The Relationship Between Writing Achievement, Writing Self-efficacy,
Writing Apprehension, and Perceived Value of Writing by
Gender for Third-Grade Students in a Suburban School District

Presented by

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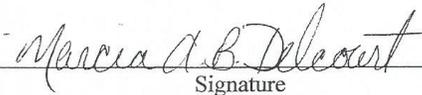
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DEDICATION

This work is dedicated to Edward T. McGettigan, Sr., a man of ahead of his time, who always believed this day would come; to my sister, Susan, who helped make this dream a reality; and to my daughters, Avery and Brady, who waited patiently for mommy to finish.

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THE RELATIONSHIP BETWEEN WRITING ACHIEVEMENT AND WRITING

MOTIVATION BY GENDER FOR THIRD-GRADE STUDENTS IN A SUBURBAN

SCHOOL DISTRICT

Rationale for Selecting the Topic

Male students are becoming the second sex according to William S. Pollock in a Business Week cover story. "It's not just that boys are falling behind girls, it's that boys themselves are falling behind their own functioning and doing worse than they did before" (Conlin, 2003, p. 74). Former Secretary of Education, Rod Paige, commentated in a U.S. Department of Education press release on November 19, 2004 regarding the National Assessment of Educational Progress (NAEP) 2002 results, "It is clear that girls are taking education very seriously and that they have made tremendous strides. . . . The issue now is that boys seem to be falling behind. We need to spend some time researching the problem so that we can give boys the support to succeed academically" (U.S. Department of Education, 2004, p.1). As there is tremendous political and economic pressure on states to reach mandated levels of performance under the No Child Left Behind Act (Anthes, 2002), it is essential to move every child forward. If analysis of test data reveals any type of gap, then that gap must be addressed. This research seeks to shed some light on the issue of a gender achievement gap in writing by examining the relationship between writing achievement and writing motivation by gender for third-grade students in a suburban school district.

Recently, a great deal of attention has been paid to the issue of the gender achievement gap in writing; this is an especially important area of inquiry in light of the high-stakes testing movement (Sammons, 1999; Schmoker, 2001). Results of numerous studies have documented that boys outperform girls in math and science (Dee, 2005;

Demack, Drew & Grimsley (2000); Gorard, Rees & Salisbury, 1999; van Langen, Bosker & Dekkers, 2006). Lately, researchers have begun to focus on the gender gap in reading (van Langen, Bosker & Dekkers, 2006) and writing (Gormley, Hammer & McDermott, 1993; Schick, 1992) and student attitude toward achievement (Warrington, Younger & Williams, 2000). Results of these studies suggest that girls are performing better than boys in these academic areas (Salisbury, Rees, & Gorard, 1999; van Langen et al., 2006; Warrington, Younger & Williams, 2000). This conclusion is born out in the results of the National Assessment of Educational Progress (NAEP) data as described below.

The National Center for Education Statistics (NCES) administers a different core subject achievement assessment every two years: the NAEP test. In 2002, the NCES administered a writing assessment to a nationally representative sample of fourth-, eighth-, and twelfth-grade students. This sample included approximately 276,000 students from 11,000 schools. The students were graded at the basic, proficient, or advanced levels. Female students attained higher average scores in 2002 than male students at all three grade levels tested (Persky, Daane & Yin, 2003). Furthermore, according to the NCES 2003, Persky et al. report, "Females outperformed males on average by 17 points at grade 4, 21 points at grade 8, and 25 points at grade 12" (p. xiii). In Connecticut, the average scaled score in writing for female fourth-grade students was 184 for females and 166 for male students (NCES, 2003). When looking at levels of writing in Connecticut for 2002, the percentage of students at or above proficient was 60% female and 39% male for fourth-grade students (NCES, 2003).

Several explanations have been advanced to account for the difference in writing achievement, including brain-based differences (Gurian, 2001; Sax, 2005), developmental differences (Ready, Logerfo, Burkam, & Lee, 2005; Sax, 2005), social (Demack, Drew, &

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Grimsley, 2000), Lynch, 2002), educational (Dee, 2005, Taylor, 2005), or motivational

differences (Pajares, Miller, & Johnson, 1999; Pajares & Valiante, 1999; 2001; Parsons,

Adler & Meece, 1982). This study focuses on the relationship of writing motivation to

writing achievement and how this relationship may vary depending on the student's gender,

by studying grade 3 students.

Statement of the Problem

The gender gap in literacy is an international phenomena that has been studied through

many lenses in order to understand why boys underperform as compared to girls (Lofqvist &

Lindell, 1989; Schick, 1992; van Langen, Bosker, & Dekkers, 2006). High stakes testing ties

funding to student performance and progress, and thus any achievement gap becomes a

problem, as exemplified by authors in Great Britain who wrote: "It would seem that,

wherever one looks, girls are outperforming boys—and often by a what appears to be a

substantial margin . . .. these findings report on the actual results schools obtained, and point

to a potentially sizeable problem" (Gray, Peng, Steward & Thomas, 2004, p. 530).

In the United States, any achievement gap is closely analyzed under the No Child Left

Behind (NCLB) law, as the goal of the law is to move every child forward, and those schools

that fail to do so will be penalized (NCLB, 2002). On September 29, 1999, the Los Angeles

Times reported that based on NAEP writing assessment data for 4th, 8th, and 12th grades, "the

most comprehensive assessment of how well American students can write shows that only

about one in four has the level of proficiency needed for success in school or future jobs, the

U.S. Department of Education reported Tuesday" (Cooper & Groves, 1999, p. 1). The low

writing scores were not the only problem. This article further reported that, "As in an earlier

assessment of reading, girls substantially outscored boys in all three grade levels tested. So

large was the gender gap, that twice as many girls as boys placed in the two top writing categories" (Cooper & Groves, 1999, p. 1).

As this gap continues to widen over time, many researchers have indicated that this particular achievement gap in literacy may be tied to other alarming trends, such as the higher high school drop out rate among males compared to females. Research on this gap has focused on possible underlying causes such as low socioeconomic status (Demack, Drew, & Grimsley, 2000), family typology (Lynch, 2002), gender of teacher (Dee, 2005), teaching methodology (Taylor, 2005), developmental differences (Ready, Logerfo, Burkam, & Lee, 2005) and neurological differences (Gurian, 2001; Sax, 2005). However, no matter what underlying causes are researched, all these studies underscore the importance of investigating any gender gap in achievement as these differences may result in unequal life choices for boys and girls (Klein, 2004) or at the very least, failure to fulfill explicit needs of boys and girls (Gurian, 2004).

Motivation has emerged as a promising area of investigation for researchers who are attempting to understand the gender gap in achievement between boys and girls (Faigley, Cherry, Jolliffe, & Skinner, 1985; Pajares & Valiante, 1999; 2001). However, most of the research conducted in academic motivation spotlights performance in math (Meece, Anderman & Anderman, 2006; Pajares, 2003). Existing motivation research in literacy usually concentrates on reading achievement, not writing achievement (Bruning & Horn, 2000). As the gap in writing achievement is larger than that of reading (NCES, 2000), this appears to be an area in need of greater study.

According to the Trends in Educational Equity of Girls & Women, "Higher levels of educational attainment are associated with certain labor market outcomes, such as higher

labor force participation rates, higher rates of employment, and higher earnings" (Freeman, 2004, p. 13). Freeman contends that while boys and girls start school at a relatively equal standing, girls surpass boys on reading and writing assessments at fourth-, eighth- and twelfth-grades. Furthermore, boys have a greater chance of repeating grades than girls (Freeman, 2004). In addition, girls have a lower dropout rate from high school than boys, enjoy the bulk of the undergraduate enrollment, and receive the majority of bachelor's degrees (Freeman, 2004).

Most of the research on the relation of motivation and achievement has focused on middle school to college level students, not elementary students; and on the academic domains of math and reading, not writing (Pajares, Miller, & Johnson, 1999). Most theorists agree that the development of these factors begins at an early age. Greater insight into elementary age students is needed as well as greater focus on the academic domain of writing (Pajares et al., 1999; Wigfield, 1994). Therefore, as self-beliefs begin to form at earlier ages, it is necessary to study this population as well. Pajares clearly defines the importance of studying students' self-beliefs, "This focus on students' self-beliefs as a principal component of academic motivation is grounded on the assumption that the beliefs that students create, develop, and hold to be true about themselves are vital forces in their success or failure in school" (Pajares, 2003, p. 140).

The purpose of this study was to examine the relationship between writing achievement, as measured by the *Connecticut Mastery Test Direct Assessment of Writing* (Connecticut State Department of Education, 2004), and writing motivation (as measured by three dimensions: *Writing Self-efficacy Scale* (Pajares, Miller, and Johnson, 1999), *Writing Apprehension Scale* (Pajares, Miller, and Johnson, 1999), and the *Perceived Value of Writing*

Scale (Pajares, Miller, and Johnson, 1999), by gender, controlling achievement by general aptitude, as measured by the *Otis-Lennon School Ability Test* (OLSAT) (Harcourt Assessment, 2006). For the purpose of this study, the construct writing motivation was defined by writing self-efficacy, writing apprehension and perceived value of writing (Pajares, Miller, and Johnson, 1999). This study followed the protocol set by the majority of research in this particular area. Through quantitative methodology, the data were analyzed to provide direction as to which motivational factors played a key role in impacting student writing.

Significance of the Study

Communication skills are essential to success in life. Writing, by its very nature, is a skill that requires perseverance. The findings of this study could be of critical value in assisting educators, especially language arts teachers, to increase their students' motivation to write, ultimately increasing their writing achievement. As much of present published research does not focus on elementary age students, this study adds to the literature through by examining the relationship of third-grade students' writing achievement by investigating the effect of writing motivation (writing self-efficacy, writing apprehension and perceived value of writing) with respect to gender. Differences in characteristics that are associated with motivation should provide information about the effects of motivation and other influences that may enhance our knowledge associated with the gender gap in a younger population as it has in older populations. Understanding the motivational factors involved in the gender gap experienced in the district on the *Direct Assessment of Writing* may provide important clues explaining the impact of motivation on the size and direction of the gender

gap in writing. As Miller and Meece (1999) explain, third-grade students are more motivated

in writing if they are working on high-challenge tasks such as essay writing.

Definition of Terms

1. The *Connecticut Mastery Test (CMT)* is a statewide mandated mastery test

   currently administered to all students enrolled in grades 3 through 8, during the

   month of March each year. The *Connecticut Mastery Test* measures student

   performance in the areas of mathematics, reading, and writing. The CMT Writing

   Test is the *Direct Assessment of Writing* (DAW), a holistically scored essay

   (Connecticut State Department of Education, 2004)

2. *Gender Gap* is a lopsided difference or inequality between the sexes on any

   specified dimension (Abramson & Stephenson, 2006).

3. *Motivation* is defined by Graham and Weiner (1996) as, " . . . the study of why

   people think and behave as they do" (p. 63).

4. *Perceived Value of Writing* within Bandura's social cognitive theory refers to the

   value students assign to an activity, which is mediated by their context-specific

   self-efficacy. Thus if one believes one is good at writing, then one will assign a

   greater value to the task of writing (Pajares 2003, Pajares et al. 1999)

5. *Self-efficacy* is defined by Bandura as a context-specific belief of what one can

   accomplish. Therefore, if a student believes he or she can write well, this belief

   will influence the choices, effort, persistence and perseverance he or she will

   make (Bandura, 1997).

6. *Writing Apprehension* is a type of writing anxiety students experience as they try

   a writing task according to Daly and Miller (1975).

Research Questions

1. Is there a significant difference in writing achievement scores between boys and girls after accounting for aptitude scores?

2. To what extent and in what manner can the variation in writing achievement scores for third-grade boys be explained by self-efficacy for writing, writing apprehension, and value of writing scores after the influence of ability is explained?

3. To what extent and in what manner can the variation in writing achievement scores for third-grade girls be explained by self-efficacy for writing, writing apprehension, and value of writing scores after the influence of ability is explained?

Overview of Methodology

While a causal comparative design, which compared boys and girls with respect to their writing achievement after controlling for general aptitude, was used for research question 1, a correlational design was used to uncover the relationships between writing achievement among third-grade students and the three dimensions of writing motivation (writing self-efficacy, writing apprehension, and perceived usefulness of writing), again controlling for ability in research questions 2 and 3. The research instruments included three scales to measure the dimensions of writing motivation: (a) The *Writing Self-Efficacy Scale* as adapted by Pajares, Miller, and Johnson (1999), (b) *The Writing Apprehension Test*, an adaption by Pajares, Miller and Johnson (1999), based on the Daly and Miller test (1975), and (c) *The Perceived Value of Writing Scale* adapted by Pajares, Miller and Johnson (1999) based on the *Writing Outcome Expectation Scale* by Shell, Murphy and Bruning (1989).

Writing performance was measured by the *Connecticut Mastery Test Direct Assessment of Writing* (Connecticut State Department of Education, 2004), a statewide holistically scored essay exam. General aptitude was measured by the *Otis-Lennon School Ability Test* (Harcourt Assessment (2006), a general aptitude test administered to second-graders in this district. The sample participating in this study consisted of 107 third-grade students from a suburban school district. Administration of the three writing motivation scales occurred in small group settings. The instrumentation, testing administration, and data collection procedures were based on the weight of previous research, which explored the relationship between writing achievement and writing motivation.

Limitations and Delimitations

This present study has external validity limitations since a convenience sample was used and included very specific, and not easily generalizeable, groups of participants. However, enough detail was provided to replicate this study if desired. To combat internal validity threats, valid and reliable instruments were used, ability was controlled for, trained administrators were employed and writing motivation was tested in close enough proximity to the writing achievement test (DAW).

Concerning delimitations, the sample only included third grade students whose parent or guardian granted permission to participate in the study. Another delimitation was that the students in this sample attended a specific school district and that these students had never taken any type of self-efficacy, writing apprehension or perceived value of writing instrument.

Statement of Ethics and Confidentiality

Permission to participate in this research was sought from the district's superintendent, each school principal, and all parents of students. To assure confidentiality, each participant was assigned a confidential identification number. All data were stored in a locked filing cabinet in the researcher's home and were maintained there until the findings were published, accessible only to other researchers for whom the data proved useful in further comparative analyses and who were enrolled in Western Connecticut State University's Doctor of Education in Instructional Leadership Program.

Organization of the Dissertation

This dissertation is organized into five chapters. This chapter introduced the study by providing a description of the problem, explained the purpose and value of this study, and what limitations and delimitations the researcher faced. In addition, key terms were defined, research questions illuminated and the theoretical base of the study was introduced. Chapter two reviews the related literature, including the disparate perspectives on academic motivation and competency beliefs underscoring why Bandura's theory of self-efficacy fits this study better than any other theoretical perspective. Chapter two provides a discussion of key studies in the area of self-efficacy and writing achievement and explains how self-efficacy, along with related constructs, was operationalized in these studies. Chapter three provides an explanation of the methodology of the study. Chapter four reveals the results of the study. Chapter five provides an analysis of the results, as well as conclusions and suggestions for further study.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter provides insight into Bandura's theory of self-efficacy and how this theory relates to other theoretical perspectives on writing competency. Following this review, the remainder of the chapter focuses on key studies on the relationship between writing self-efficacy and writing achievement. The chapter will examine how these constructs, along with related measures, were operationalized and what the relationship was to gender.

Theoretical Background

Bandura's (1986) social cognitive theory, a theory of motivation, defines human functioning as "a model of triadic reciprocality in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other" (p. 18). It is the ability of humans to self-regulate which is fundamental in social cognitive theory. Bandura suggested that humans tend to create standards for behavior and then compare the outcome of a situation to the standard they created for it internally (1986). Thus, whether one is successful or not, against that personal standard, may predict how that person will act again in a similar circumstance. Bandura stressed that this idea of self-efficacy, or one's judgments of capabilities to achieve success with a task, is essential to controlling one's actions (1986). Bandura stated, "It is partly on the basis of self-percepts of efficacy that they choose what to do, how much effort to invest in activities, how long to persevere in the face of disappointing results, and whether tasks are approached anxiously or self-assuredly" (1986, p. 21).

Individuals form these internal standards from four sources of information: mastery experience, modeling, social persuasion and emotional state. Of these four information

sources, mastery experience and modeling are the most significant influences on self-efficacy (Bandura, 1986). If one has mastered writing an essay on a personal experience, one might expect to have the same successful experience with a similar task, such as writing a report. The opposite is true as well. If one has failed at that same task, then one might not only expect failure again, but try to avoid the task entirely. Modeling by a peer of like experience is the most successful type of vicarious learning. As Bandura stated, "seeing or visualizing other similar people perform successfully can raise self-percepts of efficacy in observers that they too possess the capabilities to master comparable activities" (1986, p. 399). However, if that same peer fails at the task, then one might lower one's judgment of likely success. Social persuasion is not as strong an influence and usually depends on the value one attaches to the persuader. For example, for a student, persuasion by a teacher might not be that valued, but if a peer one respects provides encouragement, a student may attach more value to that persuasion. Finally, one's emotional state may influence efficacy, particularly if one has either high or low efficacy toward a task. If a student has high efficacy, then the positive emotional state possessed at the beginning of the task will likely be maintained through any obstacles. However, if one is anxious at the beginning of a task, then one is likely to give up at the first obstacle (Faigley, Daly & Witte, 1981).

Related Theories

While the present study is based on the theoretical model by Bandura, other theories of academic motivation are considered to illuminate for the reader why social cognitive theory best fits this study and how social cognition theory, particularly self-efficacy, relates to other motivation theories, such as Expectancy-Value (Atkinson 1957, 1964), Achievement Goal (Dweck & Leggett, 1988; Eccles & Wigfield, 2002), Social Learning (Bandura, 1977)

and Attribution Theory (Weiner, 1986). Graham and Weiner (1996) defined motivational theory " . . . as study of why people think and behave as they do" (p. 63). Atkinson's Expectancy-Value theory is based on the idea that motivation is determined by what one expects to get, the probability that one will get it, and the incentive value one attaches to the successful completion of the task (Atkinson 1957, 1964).

Expectancy-value theory developed by Atkinson (1957, 1964) is based upon the early work by Lewin, Dembo, Festinger and Sears (1944) on level of aspiration, or the goal that people set in a task. This theory of motivation suggests that there are two cognitive aspects which come into play to determine one's motivation: what success or failure may be expected at a task and how invested one is in the task itself, or the value of it. Atkinson suggested that there were different but related motives: achievement motives, probabilities for success, and incentive values of success. He believed that achievement motives directed one toward success or failure, with the concept that there is a positive correlation between one's own successes and one's investment in the task. Additionally, if one values the task, is invested in it, and believes success is attainable, then one is motivated to achieve the task. Further, Atkinson considered that individuals valued achieving more difficult tasks than easier ones (Schunk & Pajares, 2005).

Current views on expectancy-value theory divert from Atkinson's original notion. Wigfield and Eccles (1992) advocate a theory in which the two constructs, expectancy and value, are positively related and have greater weight and diversity of choices associated with each decision toward a task. One may be motivated in one direction and therefore make a certain choice, which will then move one along a path away from other choices. While the expectancy beliefs are task-specific and are thought to control performance, persistence and

task choice; competence beliefs are domain-specific. While both expectancy value and self-efficacy share similarities, such as the determining factor of one's expectations controlling cognitive motivation, Bandura (1997) suggested that one's self-efficacy directly influences how one values a task, as the more one believes in one's ability to complete a task, the greater the value will be attached to the task. Bandura (1997) contended that researchers supporting the expectancy-value model placed too much emphasis on outcome expectation, while he believed that efficacy expectations were better predictors of performance and choice. Wigfield and Eccles (2000) contend that their " . . . expectancy construct is more similar to Bandura's efficacy expectation construct than it is to the outcome expectancy construct" (Wigfield & Eccles, 2000, p. 71).

Weiner (1986) suggested in his attribution theory that individuals believe either they have the ability or do not have the ability to complete a task, and that this possession of, or lack of ability, is not subject to change and it may determine their success or failure at that task. Weiner's attribution theory is comprised of the following components (or causes): ability, effort, task difficulty, and luck. These components occur within three causal dimensions: locus of control, stability, and controllability (Weiner, 1986). Weiner further defined locus of control as either internal or external. Stability indicates if a cause changes over time; for example, ability may not change but internal cause and effort may change. Controllability relates both to areas one can control, such as skill or efficacy and to areas one cannot control, such as aptitude, mood, luck or others' actions (Weiner, 1986). Attribution theory is associated with motivation and is often used to describe how a high achiever's motivation differs from a low achiever.

Weiner contended that these attributions, or beliefs in what cause an achievement outcome, are predictive of the outcome. If one believed one is successful at a task because of luck, then one may not believe that one can recreate that success, as it was not within the individual's control in the first place. If the individual had a successful completion of a task, and believed it was due to ability, then the individual will likely repeat that success due to this positive belief. However if an individual believed that the failure is due to lack of ability, then the next outcome would likely be a failure again as the individual possesses a negative belief that the task is not within one's control because the individual does not have the ability (Weiner, 1986).

Weiner theorized in his attribution theory that "causal judgments regarding factors such as effort and task difficulty affect performance" (Bandura, 1986, p.402). Bandura suggested that these judgments are information sources mediating one's self-efficacy but that attributes alone do not affect performance. "Children who regard themselves as highly efficacious ascribe their failures to insufficient effort, whereas those who regard themselves as inefficacious view the cause of their failures as stemming from low ability. . . self-efficacious children tend to attribute their successes to ability but ability attributions affect performance indirectly through perceived self-efficacy" (Bandura, 1986, p. 402).

In this study, self-efficacy is the best indicator of the writing competency beliefs as self-efficacy judgments are more task and situation-oriented. The weight of empirical evidence reveals that self-efficacy has a direct effect on academic achievement. Studies have revealed the close relationship of strong self-efficacy to the use of cognitive strategies such as metacognition and to the ability to persist in the face of obstacles (Pintrich & DeGroot, 1990). When Multon, Brown, and Lent (1991) examined the self-efficacy research published

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over a 10-year time span beginning in 1977, their meta-analysis revealed a strong connection between self-efficacy and academic outcomes. Specifically, self-efficacy related to academic achievement (r_μ=.38) and accounted for approximately 14% of the variance. The strongest effect sizes in this meta-analysis were from those studies that examined the relationship of a particular type of self-efficacy to a specific cognitive academic measure rather than those that compared a more general self-efficacy stance with general achievement outcomes. In relation to the present study's population, Multon, Brown and Lent (1991) indicated that the body of work focusing on elementary school-age students supports the relationship of their self-efficacy beliefs to motivation and performance.

Mathematics Self-efficacy Studies

In a study by Pajares and Kranzler (1995), both self-efficacy and mental ability were examined to determine their relationship to mathematics performance. Mental ability is widely accepted as the predominant predictor of achievement yet this study revealed that self-efficacy made an independent strong predictor of mathematics achievement (Pajares & Kranzler, 1995).

Pajares and Kranzler (1995) examined the impact of math self-efficacy and general mental ability on the math problem-solving performance of 329 high school students from a social cognitive perspective. The researchers sought to investigate whether math self-efficacy made an independent contribution to math problem solving performance against the other variables in the path model, namely, math anxiety, math background, gender, and general mental ability (Pajares & Kranzler, 1995). In the context of Bandura's social cognitive theory, greater self-efficacy leads to greater perseverance and determination to succeed at a

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task (Pajares & Kranzler, 1995). The researchers included that general mental ability is the strongest predictor of academic achievement (Pajares & Kranzler, 1995).

General mental ability was assessed through *Raven's Advanced Progressive Matrices* test as the researchers stated that this test would diminish the confounding effect found with such assessments. In addition, this assessment afforded good means to control for aptitude in this study by Pajares and Kranzler (1995), and proved reliable with a test-retest reliability coefficient of .91 over a 6 to 8 week period. Pajares and Kranzler employed the *Mathematics Confidence Scale,* originally created by Dowling in 1978, to measure math self-efficacy. The *Mathematics Confidence Scale* draws from three problem-solving areas (arithmetic, algebra and geometry), employs three levels of cognitive arenas (computation, comprehension and application) against two problem circumstances (real and abstract) (Pajares & Kranzler, 1995). Pajares and Kranzler found a coefficient of .92 on the *Mathematics Confidence Scale* with item-total score correlations, which ranged from .30 to .74 (Pajares & Kranzler, 1995). Pajares and Kranzler (1995) measured math anxiety with *The Mathematics Anxiety Scale* created by Betz in 1978. This instrument is a 10-item questionnaire with half of the statements positively worded and five of the statements negatively worded. The researchers reported a Cronbach's alpha coefficient of .90 (Pajares & Kranzler, 1995). Pajares and Kranzler measured math background by what level the students had reached prior to their involvement in this study. For example, Applied Math was marked as level 1 while Calculus was marked as level 7. The grades received in these courses were not used, only the fact that the students took the courses was included as a variable.

Pajares and Kranzler (1995) employed a path analysis to investigate both the direct and indirect effects between variables. The researchers hypothesized the following

relationships in their path model: (a) gender; (b) general mental ability; (c) math background; (d) math self-efficacy; and (e) math anxiety (as the codeterminant with math self-efficacy). According to Pajares and Kranzler (1995), "The model was fully specified; that is, a variable was hypothesized to influence all variables preceding it in the model" (p. 13). The independent variables in the path model accounted for 61% of the variance in performance, $F(5.323)=99.1$, $p<.0001$. The results revealed that there was no difference in gender regarding ability, self-efficacy or performance, however, girls reported higher math anxiety. Further, self-efficacy had a strong, direct effect on performance ($\beta=.348$) compared to the effect of ability ($\beta=.321$), therefore, self-efficacy made an independent contribution to performance (Pajares and Kranzler, 1995).

Writing Motivation and Writing Self-efficacy

Bruning and Horn (2000) provide a synthesis on writing motivation research and suggestions on how best to develop motivation to write. The researchers examine the various theories from both the cognitive sciences and literary studies that pertain to writing motivation. Bruning and Horn (2000) point out that writing is a problem solving task of incredible complexity as it includes demonstrating knowledge of topic, audience, purpose, style, perspective, logic, writing conventions and rhetorical stance. "In a difficult and complex task like this, motivational issues will assume particularly prominent status" (Bruning & Horn, 2000, p. 26). The researchers contend that current research must expand to further study social cognitive variables connected to cognitive analyses (Burning & Horn, 2000).

Bruning and Horn (2000) suggest that based on current writing motivation research, there are four clusters of conditions that are essential to developing and increasing writing

motivation: (a) nurturing functional beliefs about the nature of writing and its outcomes, (b) foster student engagement through authentic goals and contexts, (c) providing a supportive context for writing, and (d) creating a positive emotional environment. Bruning and Horn (2000) provide detailed analysis and suggestions within each of these four clusters on what conditions are needed to establish further growth in these areas. The researchers contend that, "Building lasting motivation to write requires careful attention to the conditions under which students write" (p.34). Motivation is a key factor in writing success. Bruning and Horn (2000) concluded that self-efficacy instrument is the best measure of writing motivation, "because of its consistent relation to writing performance and solid theoretical grounding, self-efficacy has emerged as a major focus in studies of writing motivation" (p. 28). As stated earlier, Bandura (1986) suggested any self-efficacy measures should reflect the specificity of self-efficacy task in relation to what type of achievement is being measured.

According to Schunk and Pajares (2005), " . . . self-efficacy is generally assessed at a more microanalytic level than are other competence beliefs" (p.91). Schunk and Pajares (2005) discuss that when self-efficacy is employed in motivation research, an individual's level, generality, and strength of the belief to complete a specific task or to perform in a specific situation is measured. Whereby when other competence beliefs are used, individuals are not questioned as specifically (Schunk & Pajares, 2005). Schunk and Pajares (2005) report that "correlations between self-efficacy and academic performances in investigations in which self-efficacy is analyzed at the item- or task-specific level and closely corresponds to the criterial task have ranged from .49 to .70; direct effects in path analytic studies have ranged from $\beta = .349$ to .545" (p. 92). A conclusion derived from these studies is that self-

efficacy scales need to be both domain-specific and task-specific to accurately measure a particular academic performance.

Writing Self-Efficacy and Writing Achievement

Key studies have focused on the relationship between writing self-efficacy and writing achievement which overlap in the type of self-efficacy instrument employed, as well as related variables that are measured (Pajares & Johnson, 1993; Pajares & Valiante, 1997; Shell et al., 1989; Shell et al., 1995; Zimmerman & Bandura, 1994). In addition to writing self-efficacy, other constructs such as writing self-concept, writing attitude, writing apprehension, and perceived value of writing have also come into play as the essential links to obtaining a full picture of the level of efficaciousness (Graham & Harris, 1989; Pajares & Valiante, 1997; Schunk & Pajares, 2005; Shell et al., 1995; Zimmerman & Bandura, 1994).

Pajares's research dominates the study of self-efficacy in several academic areas, including writing. A study by Pajares and Johnson (1993) examined the relationship between self-efficacy, outcome expectancy, writing apprehension and writing achievement of 30 undergraduates students. Various statistical analyses were used to determine the relationship among the variables themselves and to determine the relationship of the variables to writing achievement. These analyses included, Pearson Product Moment correlations, and a step-wise multiple regression model, along with two-tailed t-tests. The most widely used measure of writing achievement, holistically scored essays, was employed and the interrater reliability scores were above .85. To measure writing self-efficacy, Pajares and Johnson (1993) used an instrument created by Shell et al. (1989). Additionally, the authors used Shell et al.'s writing outcome expectations instrument (perceived value of writing) as well.

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To measure writing apprehension, Pajares and Johnson (1993) used the Daly and Miller *Writing Apprehension Test*. Writing self-efficacy was significantly related to writing performance on both pre-test and post-test measures, respectively .39 and .38. Writing outcome expectations were significant only on the posttest measure. While writing apprehension negatively correlated with writing self-efficacy, it did not predict writing performance (Pajares & Johnson, 1993). As was demonstrated in earlier research, Pajares and Johnson (1993) suggested that writing apprehension provided further insight into levels of writing self-efficacy but rarely stood alone as a predictive measure of writing achievement. The multiple regression model indicated that writing self-efficacy, outcome expectations, writing apprehension and prior writing achievement predicted writing achievement at the end of the term, $F(6,23)=8.17$, $p < .0001$, and explained 68% of the variance in performance (Pajares & Johnson, 1993). As it only accounted for 1% of the variance in the model, writing apprehension was not significant but interestingly, remained stable throughout the study even though writing self-efficacy increased (Pajares & Johnson, 1993).

Academic motivation research interests educators as the "self" is seen as a primary determinant of academic success or failure (Schunk & Pajares, 2005). Key research by Schunk and Pajares (2005) focused on self-perceptions of competence, specifically, perceived self-efficacy, defining this construct as " . . . one's perceived capabilities to learn or perform behaviors at designated levels" (p. 85). This construct of self-efficacy was described by Schunk and Pajares (2005) as one which has been operationalized in many areas including education, health, business, sports, and interpersonal relations. Competence beliefs foremost in motivation research (excluding self-efficacy) include self-concept, outcome expectations, and expectancy-value.

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Self-concept Versus Self-efficacy

Although self-concept is sometimes confused with self-efficacy, self-concept is defined as ". . . one's collective self-perceptions formed through experiences with and interpretations of the environment, and heavily influenced by reinforcements and evaluations by significant other persons" (Schunk & Pajares, 2005, p. 88). The construct of self-concept is not attached to any one theorist; thus, there is little agreement on how to operationalize it. In some studies it may appear as "self-esteem, self-awareness, self-image, self-perception, self-appraisal, self-schema, self-worth, self-evaluation, or even the self itself" (Schunk & Pajares 2005, p. 88). Self-concept has been defined as being multifaceted, hierarchical, developmental and differentiable. The hierarchical perspective refers to the global self-concept at one end of the spectrum to discrete self-perception of academic or specific subjects, at the other end.

Bong and Skaalvik (2003) discussed how self-concept and self-efficacy were different constructs yet should be considered together in a study since self-efficacy is what informs an individual's self-concept. These researchers saw self-concept as "stable" and "past-oriented" while self-efficacy is "malleable" and "future-oriented" (p. 10). Hence, self-concept research has focused on the skills one has to master a task; while self-efficacy focused on the belief that one can accomplish a task (Bong & Skaalvik, 2003). According to Pajares and Schunk (2002), self-efficacy and self-concept are related as those with high academic self-efficacy may likely possess strong self-concept as well and alternately, strong self-concept may likely increase one's self-efficacy toward a new task. However, the authors warn that this symbiotic relationship does not always exist as one may possess strong self-concept yet have little self-efficacy toward a certain task if one is not invested in the task.

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Reading and Writing Self-Efficacy Studies

Shell, Murphy and Bruning (1989), examined the relationship between self-efficacy and outcome beliefs for reading and writing performance. The researchers measured reading performance through the *Degrees of Reading Power* test *(DRP)*. To measure writing performance, holistically scored essays were used. These essays were graded by two expert raters and the interrater reliability was .75. Shell, Murphy and Bruning (1989) created reading self-efficacy and writing self-efficacy instruments based upon Bandura's suggestions regarding the specificity of self-efficacy instruments in relation to what type of achievement was being measured. For both measurements, students rated the likely chance of their success for each prompt on a 0 (no chance) to 100 (certain) scale. Both the reading self-efficacy and the writing self-efficacy instruments consist of two scales, one that measures efficacy toward specific skills and the second scale measures specific tasks. For example, the researchers created a writing self-efficacy instrument consisting of two scales. The first scale measured students' confidence related to specific writing skills, for example, correctly punctuating a paragraph. The second scale investigated students' confidence related to specific writing tasks; for example, writing a term paper.

The reading self-efficacy skill and task subscales had Cronbach's alphas of .92 and .93, respectively. While the writing self-efficacy skill subscale had a Cronbach's alpha of .92 with a reported task subscale of .95. Shell, Murphy and Bruning (1989), also created a reading outcome expectations instrument and a writing outcome expectations instrument in which students rated (on a 7-point Likert scale) the importance of reading and writing related to attaining various life goals, for example becoming financially secure.

The sample consisted of 153 undergraduates (38 males, 115 females), most of whom were White and middle-class (Shell, Murphy & Bruning, 1989). The regression analyses results revealed a significant positive curvilinear relation between reading outcome expectancy and reaching achievement ($r = .25$, p $= .007$) and a high but not significant curvilinear correlation between writing outcome expectancy and writing achievement *(r = .17 vs. $r = .13$)* (Shell, Murphy & Bruning, 1989). A step-wise regression analysis was used and revealed that within-domain reading model accounted for significant variance in reading achievement ($R^2 = .32$), $F (3, 149) = 23.81$, $p < .0001$, where self-efficacy had the largest impact and outcome expectancy a lesser impact. There was significant variance accounted for in reading achievement ($R^2 = .34$), $F (4, 148) = 19.06$, $p < .0001$ in the cross-domain model where self-efficacy had again the strongest impact (Shell, Murphy & Bruning, 1989). In regards to writing, the within-domain model accounted for significant variance in writing achievement ($R^2 = .10$), $F (1, 151) = 17.02$, $p < .0001$ where self-efficacy but not outcome expectancy, was the strongest component (Shell, Murphy & Bruning, 1989).

Writing Attitude

In a study by Graham, Berninger and Fan (2007), the researchers investigated the connection between attitude towards writing and writing performance, and also the possibility that one's attitude towards writing improves with each advancing school year. Graham, Berninger and Fan (2007) tested three models of the structural relationship between writing attitude and writing achievement. In model 1, the researchers tested whether writing attitude influences writing achievement. In model 2, the Graham, Berninger, and Fan tested writing performances influenced writing attitude. In model 3, the researchers tested whether there was a bidirectional relationship between attitude and writing performance. In addition,

the researchers also tested whether attitude towards writing increased with students advance to higher levels of education. Graham, Berninger, and Fan employed a multiple-indicator multiple cause structural equation modeling approach to investigate whether statistically significant differences existed between first and third-grade students for the mean latent factors for writing attitude and achievement (Graham, Berninger & Fan, 2007).

The sample consisted of 128 first-grade and 113 third-grade students from a northwest metropolitan school district. The first-grade participants consisted of 70 girls and 58 boys and the third-grade participants consisted of 57 girls and 56 boys. The racial/ethnic distribution was 23% White, 8% Asian, 1% Black and Hispanic or Native American 1%. *The PAL Compositional Fluency* subtest and the *Wechsler Individual Achievement Test-2* (*WIAT-2*), specifically the *Written Expression* subtest, measured writing performance. The *PAL Compositional Fluency* subtest was scored on three measures: (a) sophistication of vocabulary, (b) average length of correct word sequences and (c) overall quality of the writing using a traditional holistic rating scale. The vocabulary measure derived from the *Contextual Vocabulary subtest of the Test of Written Language-2* (TOWL-2) created by Hammill and Larsen in 1988. The test-retest reliability was .82. The researchers employed two graduate students to score the second measure of length of correct word sequence. Interrater reliability between these two scorers was .99. The researchers employed two former elementary school teachers to score the overall writing quality of the essays and the interrater reliability was .93. The researchers revealed that the grade-based reliability for the *WIAT-2* for first grade students was .91, and for third grade students, .78. The test-retest reliability was .87.

Writing attitude was measured by a 7- question survey instrument (Graham, Berninger & Fan, 2007). Questions included, "How do you feel about writing for fun at home." The students marked their responses by choosing one of four images of Garfield the Cat, from unhappy (score =1) to very happy (score =4). The researchers obtained a Cronbach's alpha of .85. Graham, Berninger and Fan (2007) defined writing attitude ". . . as an affective disposition involving how the act of writing makes the author feel ranging from happy to unhappy" (p. 518). Graham et al. (2007) suggested that in light of Roseburg's (1998) defined level of affect as (1) personality trait, (2) moods which can change and (3) ephemeral emotions, their definition of writing attitude most closely matches Roseburg's second level of affect (a mood that can change). Results of this study indicated that model 1 was the best fit for the data; thus, writing attitude influenced writing performance.

Various researchers (Anderman & Wolters, 2006; Graham, Berninger & Fan, 2007; Isen, 1999; McLeod, 1987) suggest that a positive writing attitude may increase different factors such as: more sophisticated writing strategies, creativity, and frequency and focus of students' writing. Anderman and Wolters (2006) contend that ". . . students have a level of motivation that they experience phenomenologically; that influences their initial and ongoing engagement with regard to a particular activity" (p. 369). Anderman and Wolters (2006) wrote extensively on the relationship between goals, values and affect to performance or achievement. Anderman and Wolters (2006) argue that attitude, or affect, holds a complicated role with learning, achievement and especially with cognitive processing. The authors contend that this complexity arises out of the theory that there are different types and levels of affect and that each influences cognitive processing differently. The researchers propose that a student's affect, or attitude, is often a result of the goal that the student set

(Anderman & Wolters, 2006). Anderman and Wolters (2006) stated that, "Target goals drive affective reactions by serving as standards or objects that student use to evaluate their progress" (p. 381).

In their seminal work on researching the process of writing, Hayes and Flower (1981) acknowledged that writing was a goal-directed process and that writers produced both main writing goals, and many subgoals along a hierarchical structure. The researchers investigated the process of writing through a protocol analysis. This analysis involved having the adult subjects record their thinking processes out loud as they wrote an assigned composition piece (Hayes & Flower, 1981). Hayes and Flower (1981) contended that the task of writing was so demanding that it required greater emotional effort than other academic tasks. The researchers argued that writing takes its toll on the writer as it is a self-directed, highly complex activity requiring the employment of a variety of mental operations all at the same time, including three main processes: planning, sentence generation, and revision (Hayes, 1996). As writing is a difficult and complicated process, the impact of a negative attitude has greater effect on this subject matter as opposed to other areas of the curriculum as it usually manifests into writing anxiety whereas a positive attitude increases the value of the task and the skill involved (Graham, 2006).

McLeod (1987) defines writing anxiety as having a negative attitude which could interrupt the cognitive process of writing. The researcher further explains that the writer is intellectually capable of writing but is blocked in some way by the level of negative attitude or writing anxiety (McLeod, 1987). McLeod (1987) points out that that ". . . it is impossible to write without some emotion occurring" (p.432). McLeod (1987) argues that the level of

and type of emotions which come into play during the writing process are connected to one's interpretation of sensory data, that these data may enable or disable the writing process.

McLeod (1987) discussed how a positive attitude, or value of the task, might give some students an edge. She referred to work by Larson where students "became deeply engaged in the writing task, experiencing what they called *flow"* (McLeod, 1987, p. 428). Mihali Csikszentmihalyi, a colleague of Larson's, defined flow as an experience in which an individual is deeply and positively involved in a task and McLeod pointed out that the students who felt *flow* were no more skilled than the students who held negative values toward writing and thus felt anxious about the task (McLeod, 1987). McLeod (1987) suggested that further research into what makes a writing task inherently valuable to students in order to increase the possibility of "flow" would be of value. She further argued that a "theory of affect" pulling from three areas, writing anxiety, motivation, and beliefs, is the direction researchers should pursue to understand the interplay of the cognitive and the physiological (1987). Thus, one may have the motivation and beliefs to write but one may be prevented from experiencing "flow" due to the physiological results of writing apprehension.

Writing Apprehension

Daly and Miller (1975) originated the term writing apprehension when they studied the connection of attitudes toward writing and other outcomes. These researchers concluded that writing apprehension may not only hinder students' writing performance but may also have a negative impact on career choices. A negative attitude toward writing usually manifests into writing apprehension (Daly, 1975). In a study by Faigley, Daly and Witte (1981), the authors examined the relationship of writing apprehension to writing competency and to writing performance among 110 college freshmen. Faigley, Daly and Witte (1981)

measured writing ability with eight different standardized writing skills tests and measured

writing performance by looking at two different types of writing assignments: a personal

essay and a persuasive essay. The Daly-Miller writing apprehension instrument (1975a) was

used to measure writing apprehension. The essays were analyzed in both depth of quality

and on three syntactic measures (the mean number of words per clause, the number of words

per T-units [an independent clause with all the subordinate elements attached or embedded]

and the frequency of nonrestrictive modifiers).

One-way analyses of variance between the high-and low-level of apprehension

groups revealed significant differences between the two groups on almost all measures,

where the low-level apprehension toward writing group performed higher than the high-level

group. The two-way analyses of variance on the two writing performance instruments

repeated this same pattern; holistic quality scores for, $F(1,108)=8.20$, p $<.07$; for total length,

$F(1,108) = 7.33$, p $<.008$; for words per T-unit, $F(1,108)=3.01$, p $<.08$; for words per clause,

$F(1,108) = 9.66$, p $<.002$; for T-units with final nonrestrictive modifiers, $F(1,108)=3.15$, p

$<.07$; and words in final nonrestrictive modifiers, $F(1,108) = 3.37$, p $<.06$ (1981). The high-

level of writing apprehension group performed lower on general verbal ability, matters of

usage and written conventions, and wrote significantly less with not as much fluency,

maturity and development. The authors concluded that the relationship between writing

apprehension and writing performance is bi-directional and that further research is needed to

more fully understand how apprehension develops.

In a study by McCarthy, Meier and Rinderer (1985), the researchers investigated the

relationship of efficacy expectations to the quality of writing, and the relationship of various

psychological variables (locus of control, cognitive style and anxiety) to effective writing.

McCarthy, Meier, and Rinderer (1985) ran two separate studies which tested these hypotheses: (a) students with strong self-efficacy were stronger writers than those with low self-efficacy, (b) students with low anxiety were better writers than those with high anxiety, (c) students who believed their locus of control was internal were stronger writers than those who believed their locus of control was external, and finally, (d) students who possessed high order critical thinking skills were stronger writers than those with low critical thinking skills.

In the first study, the sample consisted of 137 college freshmen in beginning writing courses in the Midwest. The researchers measured writing performance based on expository essays written in the beginning of the term and at the end of the term that used similar prompt topics. In close proximity of time to writing the first essay, the students were given a *Self-Assessment of Writing*, which measured their writing self-efficacy (McCarthy, Meier & Rinderer, 1985). Students rated their ability on 19 specific writing skills. In addition, the students were given a writing anxiety measure, a questionnaire which asked them to rate their perceptions of locus of control and a cognitive inventory which measured whether students had deep or shallow cognitive processing (McCarthy, Meier & Rinderer, 1985).

The expository essays were graded by four expert raters from the university's English Department. These essays were graded based on how well the students demonstrated the 19 skills from the *Self-Assessment of Writing* instrument. The interrater reliability was $r = .92$ (McCarthy, Meier & Rinderer, 1985).

In this first study, the authors determined that only self-efficacy was statically significant in the step-wise regression analyses (McCarthy, Meier & Rinderer, 1985). However, due to some testing condition problems in the post-test, the researchers ran a second study with a sample of 60 different college freshmen in the spring. The results

revealed that self-efficacy and anxiety both made independent contributions to writing performance at the pre-test but only self-efficacy was a significant effect to writing performance for the post-test. The researchers argued that, "individuals with greater writing apprehension tend to be less effective writers, while those with less apprehension are better writers" (p. 467). McLeod (1987) also encouraged study of writing apprehension, along with other affective factors, to help clarify how affective components undergird the writing process and outcomes.

In another study including writing apprehension, Wachholz and Etheridge (1995) examined the writing self-efficacy and writing apprehension of 43 college freshmen developmental writers. The students took the *Daly Miller Writing Apprehension Test* (WAT), a 26-item Likert scale instrument. Those students who scored at least one standard deviation above or below the mean were chosen for further study where they were asked to articulate their thoughts on what it meant to be a good writer, what their own writing experience was like, and how they measured their writing self-efficacy. To follow up on the test data, the researchers also conducted interviews with five high-level writing apprehension students and five low-level writing apprehension students.

When asked what qualities made a good writer, the low writing apprehension students concluded that a good writer was "… someone who has a good imagination, who writes with clarity and variety, and who develops ideas skillfully" (Wachholz & Etheridge, 1995, p. 13). However, those students with high writing apprehension defined good writers as those with natural talent or those skilled in mechanics who make no writing errors. These results marry well with the underlying tenets of Bandura's social cognitive theory. The low apprehension students theoretically were able to devote more effort and persistence toward a writing task

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because, in addition to their belief that they were capable of success, these students believed that it was within their control to achieve success; whereas the high writing apprehension students believed that good writing was innate, therefore not within their control, so they would theoretically devote little effort or persistence to a task that they perceived as having a negative outcome no matter what they did (Wachholz & Etheridge, 1995).

Writing Achievement and Writing Motivation by Gender

In a study by Pajares, Miller and Johnson (1999), the investigators focused on elementary age school students as it had been suggested that it was this age level where competency beliefs formed. This study reconstructed previous measures to more closely align with theoretical concepts and to align better with the focus age group; elementary students in grades three, four, and five. In addition, the authors investigated gender differences in writing self-efficacy as previous studies had contradictory outcomes. Pajares, Miller and Johnson (1999) controlled for aptitude in order to best separate out the predictive value of writing self-efficacy to writing achievement. The study sample was 363 students (174 girls and 189 boys) in three grade levels (105 third-graders, 123 fourth-graders and 135 fifth graders). The sample was predominately White and middle class. The investigators included only general education students in the sample. The students completed the instruments in a group setting where the administrator read aloud each of the instruments one item at a time. The performance task, a 30-minute essay, was established as a high stakes performance assessment and holistically scored in a widely accepted manner used by writing self-efficacy researchers. The interrater reliability was .80.

The *Writing Skills Self-Efficacy Scale* measured beliefs on 9 items on writing on a scale from 1 to 100 and the authors reported a coefficient alpha reliability of .88. With the

sample of fifth-grade students, positive correlations with coefficients above .68, between items and scale scores were reported (Pajares, Miller & Johnson, 1999). In addition to the writing self-efficacy instrument, students were asked to compare their writing abilities to other students in the following categories: to boys in the class, to girls in their class, boys in their school, girls in their school, to all students in their class, and to all students in their school. A 6-point Likert scale was used where definitely false was 1 and definitely true was a 6. The second instrument employed in the study assessed writing self-concept based upon Marsh's (1990) *Academic Self Description Questionnaire* adapted for writing. This instrument also used a 6-point Likert scale ranging from 1 for definitely false to 6, definitely true. The 1990 Marsh study reported alpha coefficients ranging from .88 to .94 for the different academic areas for students in fifth- and sixth-grades. The Pajares, Miller and Johnson (1999) study reported an alpha coefficient of .86. The third instrument used in the study was a *Writing Apprehension* measure based on the Daly Miller *Writing Apprehension Test* (1975). Again, a 6-point Likert scale was used. The investigators reported an alpha coefficient of .80.

A fourth instrument was the *Perceived Usefulness of Writing* scale based on the Writing Outcome Expectations Scale used by Shell et al. (1989). This measure employed a 6-point Likert scale ranging from extremely unimportant to extremely important for 9 items. The authors reported an alpha coefficient of .78. A fifth instrument, the Self-Efficacy for Self-Regulated Learning scale, measured student responses on 7 items based on Bandura's, *Children's Multidimensional Self-Efficacy Scale*. Pajares, Miller and Johnson (1999) reported a coefficient alpha of .80. The final instrument measured writing aptitude. The investigators

used a teacher rating of students on a 5-point scale (the same as used by the holistic scorers on the essays).

Pajares, Miller and Johnson (1999) used a multiple regression analysis where self-efficacy was entered as the criterion variable. The model included the following interactions: gender and grade level, gender and self-efficacy, grade level with self-efficacy and a three-way interaction between gender, grade level, and self-efficacy. In addition, a path analysis (with a variance-covariance matrix) was used to investigate any effects the variables might have produced (1999). The investigators used a multivariate analysis of covariance (MANCOVA) to examine any gender or grade level differences among the variables.

The results of the analysis report that writing self-efficacy was a strong predictor of writing achievement after controlling for aptitude (ß = .397), while writing apprehension, perceived usefulness, self-efficacy for self-regulation, gender and writing self-concept were not significant. The path analysis confirmed these findings. For the MANCOVA, while the interaction of gender and grade level was non-significant, the study reported that, "there were significant main effects for grade level, Wilk's λ = .72, F (24, 694) = 5.22, $p < .0001$, and for gender, Wilk's λ = .90, F (12, 347) = 3.10, $p < .0001$" (1999). According to the researchers:

> We found gender differences favoring girls on writing performance,
> apprehension, self-concept and self-efficacy for self-regulation as well as on
> five of the six-ability comparisons. Gender differences in writing performance
> emerged despite the fact that girls were also rated better writers by their
> teachers (means for aptitude were 3.4 for girls and 3.0 for boys), t (361) =
> 5.73, $p < .0001$. (Pajares, Miller & Johnson, 1999, p. 56)

The investigators suggest that using teacher ratings of students, an affective scale, was perhaps not the optimal choice as a measure to control for aptitude and caution that the affective factors' effect on writing performance may have been more than the path analysis revealed. They advocate using a different aptitude control in future studies (1999). The investigators further suggest that any future studies of this nature should include gender as well as social comparative information.

In a study by Pajares and Valiante (2001), 218 fifth-graders were the subjects of a study examining the influence of self-efficacy, writing apprehension, perceived usefulness of writing and writing aptitude on writing achievement (essay performance). Pajares and Valiante (2001) employed instruments in this study based solidly on Bandura's social cognitive theory. Pajares and Valiante hypothesized that writing self-efficacy was as Bandura suggested, a mediating mechanism of personal agency, and that perceived value, apprehension, and attitude were common mechanisms of personal agency. The investigators suggest that according to Bandura, the mediating mechanism has direct influence on performance while the common mechanisms influence performance but as a part of the mediating mechanism (Pajares & Valiante, 2001). Self-efficacy had a direct influence on writing achievement ($ß = .356$) when writing aptitude was controlled (Pajares & Valiante, 2001).

In addition, similar to the previous study, all gender differences favored girls. According to the investigators, MANCOVA results revealed a significant univariate effect for sex, Wilk's $\lambda = .88$ $F_{(4, 212)} = 7.44$, $p < .0001$. The breakdown of gender differences on the variables is as follows: writing apprehension, $F_{(2,215)} = 20.06$, $p < .0001$, perceived usefulness, $F_{(2,215)} = 4.87$, $p < .009$, and writing self-efficacy, $F_{(2,215)} = 18.84$, $p < .0001$

(Pajares & Valiante, 2001). The variable of writing apprehension and perceived usefulness of writing had no significant influence on performance, which corresponded to social cognitive theory in that common mechanisms were ancillary to the mediating mechanism (Pajares & Valiante, 2001). Also aligning to Bandura's theory that previous achievements were the most significant source of information informing the level of a person's self-efficacy, was the direct effect of aptitude (ß = .311) on self-efficacy (Pajares & Valiante, 2001). While gender did not make an independent contribution to performance, the investigators reported a direct effect from gender to perceived usefulness (ß = -.152) and to apprehension (ß = .257) and to self-efficacy (ß = -.173) (2001).

Measurement

Key studies (Graham, Berninger & Fan, 2007; Meier, McCarthy & Schmeck, 1984; Pajares & Johnson, 1993; Pajares, Miller & Johnson, 1999; Pajares & Valiante, 1997) underscore the role of writing self-efficacy within the larger domain of writing achievement. These findings have served to clarify our understanding of the relationship of self-efficacy to the interplay between cognitive and affective processes involved in the complicated task of writing. These studies also revealed the importance of operationalizing the theoretical constructs closely to the academic domain and the task under study. Bandura (1986) advocated for the use of task-specific and domain-specific scales to best reveal the predictive nature of efficacy. For example, one should use a specific self-efficacy scale for essay writing to measure how writing self-efficacy relates to writing achievement in essays. Use of a general self-efficacy instrument would not be helpful because it is too global and self-efficacy tasks need to be specific to examine this construct. The meta-analysis of Multon, Brown and Lent (1991) revealed that effect sizes were dependent on the efficacy scales and

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performance measures used in a study. The most direct effects occurred in studies that were microanalytic in nature; with specific self-efficacy scales matched to specific task performance assessments. Pajares (1996) noted that " . . . self-efficacy beliefs should be assessed at the optimal level of specificity that corresponds to the criterial task being assessed and the domain of functioning being analyzed" (p. 547).

Summary

Research findings examined in this chapter support Bandura's theory of self-efficacy. This theory of motivation contends that the way one judges one's capability to successfully achieve a task, mediates one's performance. The judgment influences the effort, perseverance, and emotional state with which one approaches a task. These studies indicated that self-efficacy made an independent contribution to academic performance in some part. The degree of that contribution depended on the specificity of the efficacy scale.

CHAPTER III

METHODS AND PROCEDURES

This chapter provides a description of the research methodology and procedures used in the study. The chapter is organized around the following sections: (a) research perspective, (b) research questions, (c) research design, (d) population and sample, (e) instrumentation, (f) data collection and (g) data analysis.

Research Perspective

This study employed the sociocognitive research perspective. Writing is a multifaceted activity requiring perseverance. As Hidi and Boscolo (2006) suggested, "Writing tasks are often complex, demanding, and perceived as risky by students; therefore writing lends itself to be investigated in terms of a writer's beliefs of his or her ability to compose a good text" (p. 5). Therefore, this study employs three instruments that capture the complexity of the construct writing motivation: *Self-efficacy for Writing, Writing Apprehension* and the *Perceived Value of Writing*.

Research Questions

1. Is there a significant difference in writing achievement scores between boys and girls after accounting for student aptitude?

2. To what extent and in what manner can the variation in writing achievement scores for third-grade boys be explained by self-efficacy for writing, writing apprehension, and value of writing scores after the influence of ability is explained?

3. To what extent and in what manner can the variation in writing achievement scores for third-grade girls be explained by self-efficacy for writing, writing

apprehension, and value of writing scores after the influence of ability is

explained?

Research Design

Two types of designs were employed in this study. Research question 1 was

examined using a causal comparative design that compared boys and girls with respect to

their writing achievement, after adjusting achievement scores for general aptitude. For

research questions 2 and 3, a correlational design was utilized to investigate the relationships

between writing achievement among third-grade students and three forms of writing

motivation (writing self-efficacy, writing apprehension and perceived usefulness of writing),

after the effect of ability was accounted for in the design. Research question 2 analyzed these

relations among the scores for boys, while research question 3 focused on the girls in the

sample.

Population and Sample

All general education third-grade students from all three elementary schools in a

particular district were invited to participate in this study. Each elementary school was K-4

with approximately the same populations and distribution of students across grade levels

(Table 1). There were approximately 300 third-grade students in the district with five

classrooms per grade level at each of the three elementary schools. Of those students, 107 (56

boys and 51 girls) provided permission to participate in the study. The socioeconomic

category of this suburban district was above-average in income and predominantly White

(94.6%). The total minority student population was 5.4% (Asian American 2.9%, Black

0.8%, Hispanic 1.8%). According to the 2006-07 Strategic School Profile, the per capita

income was $82, 049 (in 2000), the population 19,395 and there was a total enrollment in the

district's schools of 4,139 students. In the 2006-07 academic year, 0% of students were

eligible for Free/Reduced-Price Meals, 3.1% of K-1 students came from Non-English home

language and only 5.1% of juniors and seniors worked more than 16 hours per week. This

district is located in the New England region. Special education students did not participate

in this study per the superintendent's request. Permission from each of the students was

obtained from a parent or guardian (Appendix A). No students were selected from the

researcher's school. Table 1 provides an analysis of student population and details number of

participants at each school and from each classroom.

Table 1

Sample Description by Gender for School and Classroom

	Total Number of Students by Class		Total Number of Student Participants	
	Boys	Girls	Boys	Girls
School A				
Classroom 1	11	9	6	1
Classroom 2	10	10	2	3
Classroom 3	9	9	4	5
Classroom 4	9	9	3	4
Classroom 5	10	8	2	2
(N = 94)	49	45	17	15
School B				
Classroom 1	8	11	4	5
Classroom 2	9	5	3	3
Classroom 3	12	8	2	4
Classroom 4	8	8	5	2
Classroom 5	12	7	6	4
(N = 88)	49	39	20	18

Table 1 (continued)

Sample Description by Gender for School and Classroom

	Total Number of Students by Class		Total Number of Student Participants	
	Boys	Girls	Boys	Girls
School C				
Classroom 1	9	9	3	4
Classroom 2	8	11	1	3
Classroom 3	10	10	4	3
Classroom 4	9	12	7	4
Classroom 5	11	10	4	4
(N = 99)	47	52	19	18

Instrumentation

The *Writing Self-efficacy Scale*, as adapted by Pajares, Miller, and Johnson (1999), for the elementary level, differs from other writing self-efficacy instruments in that it not only measures a student's belief in his or her mastery, but also measures a student's belief in his or her competency as compared to other students, otherwise known as performance orientation. The *Writing Self-efficacy Scale* serves to measure the level of competency a student feels related to writing. Part one contains 9 items, which assess students' confidence in their ability to successfully perform various writing tasks on a scale from 0 (no chance) to 100 (completely certain). These writing tasks range from "I can correctly spell all words in a one-page story or essay" to "I can write a well-organized essay that has a good introduction, body, and conclusion."

Part two contains a set of 6 questions, which are ability comparisons asking students to identify whether they believe that they are better writers than the boys in their class, the girls in their class, the boys in their school, the girls in their school, all students in this class, or all students in their school. In a 1997 study by Pajares and Valiante, the authors reported a coefficient alpha reliability of .88 and inter-item correlations of .68 and above for a sample of Grade 5 students. In this study, Pajares et al. (1999) reported a Cronbach's alpha coefficient of .85.

In this same study by Pajares et al. (1999), the researchers adapted Daly and Miller's *Writing Apprehension Test* (WAT), which contains 26 items. Pajares et al. altered this instrument for a younger audience, reducing the number of items to 9. They altered the Likert scale as well to a 6-point scale in order to be in agreement with Bandura's social cognitive guidelines; 1 for Strongly Disagree to 6, Strongly Agree. Statements which students rated on

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this instrument include, "I avoid writing," "I am afraid of writing essays when I know they will be graded," and "My mind seems to go blank when I start to work on an essay" (Pajares et al, 1999, p. 53). The alpha coefficient for reliability was .80. The Writing Apprehension scale measured the level of anxiety a student related to writing, with more anxious students having a lower expectancy of success than less anxious ones.

The *Perceived Value of Writing Scale* (Pajares et al., 1999) measures the value a student attaches to writing, which also relates to mastery orientation. The higher the value, the more competent a student feels in mastering the task (Pajares et al., 1999). Pajares et al. (1999) adapted the *Writing Outcome Expectations Scale* by Shell et al., to develop their measure, the *Perceived Value of Writing Scale*. This instrument has eight items, which test how much the students value writing (Pajares 1999). This instrument also has a 6-point Likert scale from 1 for Strongly Disagree to 6 for Strongly Agree. Items include, "Being a good writer is important to me," "Writing stories is interesting for me," and "Writing is a lot of fun" (Pajares et al, 1999, p. 53). Pajares and Valiante (1997) reported an alpha coefficient of .84 with fifth grade students and an alpha coefficient of .78 in a study of grades 3, 4 & 5 (1999).

The *Connecticut Mastery Test Direct Assessment of Writing* (DAW) is a state-wide holistically scored essay. The essays are scored on a 6-point scale employed by two different assessors to develop a summed score. Inter-rater correlations for the two ratings were high in the 2004 Technical Report from the state (2004), indicating values which were equal to or greater than a .73 consistency rating for all grade levels (Technical Report, 2004).

The *Otis-Lennon School Ability Test (OLSAT)* is a general aptitude test. In this district, the OLSAT is group administered to all second-grade students in the month of May. According to the publisher, Harcourt Assessment (OLSAT, 2007), this test measures " . . . the cognitive abilities that relate to a student's ability to learn in school" (p. 2). It is a group intelligence test used in many schools and has internal consistency reliability coefficients ranging from .88 to .95 (OLSAT, 2007).

Both the DAW and the OLSAT are administered to general education students in their classrooms unless otherwise stipulated by a student's 504 plan. The DAW is one holistically scored essay test to be completed in one hour. The prompt for the essay is narrative. The trained assessors score these essays using the state writing rubric. The OLSAT contains two subtests (verbal and nonverbal), and is administered in two 45 minutes sessions over two days, one test per day. The OLSAT is computer scored and both parts are administered by classroom teachers.

Data Collection

The writing motivation instruments (*Writing Self-efficacy, Writing Apprehension* and *Perceived Value of Writing*) were group administered in homeroom classes during one period. Writing resource teachers were trained as administrators and read directions and survey items aloud as well as clarified any unfamiliar terms. This information was carefully scripted and procedures well reviewed. The three instruments were collected in sealed envelopes. These procedures were similar to other protocols in academic motivation research (Pajares, 1999). The holistically scored essay data, the *Connecticut Mastery Test Direct Assessment of Writing*, as well as the *Otis-Lennon School Ability Test* scores, were collected from the district database. To ensure confidentiality, a technical administrator, who was not

involved with the investigation, coded the student identification numbers. The same coding system was used for the three additional data sources.

With the exception of the *DAW* and *OLSAT*, the other instruments, (the *Writing Self-efficacy* score, *Writing Apprehension* and *Perceived Usefulness of Writing*) were scored according to the protocol set by the creators of those instruments as previously indicated.

Data Analysis

Data were analyzed using the SPSS (SPSS Inc., 1999) data analysis program. Research question 1 was analyzed using an ANCOVA. Scores for the dependent variable, writing achievement, were adjusted for any differences in general aptitude, and then the means for boys and girls were compared. Research questions 2 and 3 investigated the predictive ability of three aspects of writing motivation (writing self-efficacy, writing apprehension and perceived value of writing) to explain the variation of scores in writing achievement for boys and for girls, after the effects of ability were accounted for. Two multiple regression equations were examined, one for boys (research question 2) and another for girls (research question 3). Results were interpreted at $p \leq .05$.

Summary

A quantitative design framed this study, which investigated the relationship between writing achievement and writing motivation by gender for third-grade students in a suburban school district. A detailed description of instruments, test administration, and data collection procedures was supplied to further aid any future research in this area. Instrumentation, testing and data analysis followed the format of well-established research in this area (Shell et al., 1989) Pajares, Miller & Johnson, 1999); Pajares & Valiante (2001). Chapter 4 discusses the results of this study.

CHAPTER IV

ANALYSIS OF FINDINGS

Chapter 4 presents the findings of the analysis completed for this study examining the relationship of writing achievement and writing motivation for third grade boys and girls in a suburban school district. The study's participants are described and data on the assessments used in the study are presented. The results used to answer each research question are presented. The chapter ends with a summary.

Study participants

A total of 107 third grade boys (n=56, 52.3%) and girls (n=51, 47.7%) participated in this study on writing. There were three schools participating in the study, School A, School B, and School C of the district, with five teachers per school. Table 2 illustrates the frequency and percentage for each school by gender. Overall there were five more boys than girls participating in this study. The socioeconomic category of this suburban district was above-average income and predominantly White. Special education students did not participate in this study per the superintendent's request.

Table 2

Demographic data: frequencies and percentages for all schools by gender

School	Gender		Total
	Girls	Boys	
School A	15 (46.9%)	17 (53.1%)	32 (29.9%)
School B	19 (47.4%)	20 (52.6%)	38 (35.5%)
School C	18 (48.6%)	19 (51.4%)	37 (34.6%)
Total	51 (47.7%)	56 (52.3%)	107 (100.0%)

Descriptive information from all instruments

A total of five different instruments were used in this study. There were two academic measures; the *Otis-Lennon School Ability Test* (OLSAT) and the *Connecticut Mastery Test Direct Assessment of Writing*. The OLSAT is a general aptitude test and the *Connecticut Mastery Test Direct Assessment of Writing* (DAW) is a statewide holistically scored writing essay. The writing samples were scored on a 6-point scale and the scores of two assessors were summed to create a total score. The OLSAT total score and the verbal and non-verbal scores were used in the analyses.

The three non-academic measures included the *Writing Self-efficacy Scale* (WSES) (Pajares, Miller, & Johnson; 1999), *Writing Apprehension Test* (WAT) (Pajares, et al., 1999), and the *Perceived Value of Writing Scale* (PVWS) (Pajares et al., 1999). The WSES consists of two parts with the nine items in Part A using a response scale of No Chance (0) to Completely Certain (100). Part B consisted of six items using a Likert-type six-point response scale of Definitely False (1) to Definitely True (6). The WAT also contains two parts, A and B. Part A has ten items utilizing a six point Likert response scale of Strong Agree (6) to Strong Disagree (1). Part B of the WAT contained six items using a six point Likert type response scale of Definitely False (1) to Definitely True (6). The PVWS consisted of eight items using a six point Likert response scale of Strongly Agree (6) to Strongly Disagree (1). Table 3 summarizes information on the non-academic instruments used in this study. The overall mean presents the average of the responses for the items in each section of the assessment calculated for each person.

Table 3

Summary of non-academic measures for all students

Scale	No of Items	Range of Scores	Mean	SD
Writing Self-efficacy Scale Part A[a]	9	0-100	87.58	9.32
Writing Self-efficacy Scale Part B	6	1-6	3.87	1.00
Writing Apprehension Test Part A	10	1-6	3.22	.62
Writing Apprehension Test Part B	6	1-6	4.03	.75
Perceived Value of Writing Scale	8	1-6	4.86	1.16

[a] This subscale was based on a scale from 0 to 100. All other scales ranged from 1-6.

Table 4 illustrates the overall data for the academic measures used in this study. Students in this district tend to perform at the high end of the range as one can discern from Table 4.

Table 4

Summary of academic measures for all students (N=107)

Test	Mean	SD	Range
Connecticut Mastery Test Direct Assessment of Writing	9.37	1.34	6 - 12
Otis-Lennon School Ability Test Total	605.18	30.02	524 - 701
Otis-Lennon School Ability Test Verbal	595.06	29.99	540 - 670
Otis-Lennon School Ability Test Non-Verbal	619.12	38.17	504 - 705

Research Questions

Three research questions were posed by this study. Each of the questions was addressed individually and the level of significance for all analyses was $p \leq .05$ or less.

Research Question 1

Is there a significant difference in writing achievement scores between boys and girls after accounting for their scores in aptitude?

An analysis of covariance (ANCOVA) was used to examine this question. The independent variable for this analysis was gender, the dependent variable was the DAW and the covariate was the OLSAT Total Score. The Levene test for homogeneity of variance indicated the assumption of equal variances could be made as indicated in Table 5.

As can be seen from Table 5, the adjusted and unadjusted means for boys and girls on the DAW were very similar. Boys (M=8.96, SD=1.28) scored statistically significantly lower on the DAW than did girls (M=9.82, SD=1.28).

Table 5

Adjusted and unadjusted means for gender for Direct Assessment of Writing

	Unadjusted Mean	Adjusted Mean
Girls	9.82	9.82
Boys	9.82	8.96

Table 6

Levene's test of equality of error variances

F	df1	df2	Sig.
.698	1	105	.405

Note. Tests the null hypothesis that the error variance of the dependent variable is equal across groups. Dependent variable is *Connecticut Mastery Test Direct Assessment of Writing*.

An analysis of covariance (ANCOVA) was calculated on the dependent variable, the Connecticut Mastery Test Direct Assessment of Writing comparing gender after covarying for ability with the Otis Lennon School Ability Test. The ANCOVA results in Table 7 indicated there was a significant difference for gender ($F_{(1, 104)} = 11.950$, $p = .001$). The covariate did not significantly influence the dependent variable.

Table 7

ANCOVA for Direct Assessment of Writing comparing gender after covarying for ability

Source	Type III Sum of Squares	Df	Mean Square	F	p	Partial Eta Squared
Corrected Model	19.716[a]	2	9.858	5.984	.003	.103
Intercept	22.017	1	22.017	13.365	.000	.114
Otis-Lennon School Ability Test[b]	.010	1	.010	.006	.939	.000
Gender	19.687	1	19.687	11.950	.001	.103
Error	171.331	104	1.647			
Total	9593.000	107				
Corrected Total	191.047	106				

[a]R Squared = .103 (Adjusted R Squared = .086)

[b]Covariate

When verbal and non-verbal OLSAT scores were considered as separate covariates in similar results were found. Girls' scores on the OLSAT were statistically significantly higher than boys' scores (verbal: F (1,104)=11.946, *p* =.001; Non-Verbal: F(1,104)=11.946, *p* =.001).

The lack of influence of the covariate on the DAW scores was largely due to the low correlations between the OLSAT scores and the DAW. The correlations as a measure of the linear relationship between DAW and OLSAT Total, Verbal, and Non-Verbal scores were low (*r*=.012 to .047).

Research Question 2

To what extent and in what manner can the variation in writing achievement scores for third-grade boys be explained by self-efficacy for writing (Part A and Part B), writing apprehension (Part A and Part B), and value of writing scores after the influence of ability is explained?

The analysis used to address this question was a multiple regression procedure with DAW used as the dependent or predicted variable. The independent or predictor variables were WSES Part A, WSES Part B, WAT Part A, WAT Part B, and the PVWS. A stepwise regression procedure was used to develop a predictive model for boys. In a stepwise regression, at each step tests are performed to determine the significance of each independent variable as if it were the last to enter (Meyers, Gamst, & Guarino, 2006). A variable may be entered into the analysis and is measuring much of the same construct as another. This reassessment may determine the first variable to enter may no longer contribute anything to the overall analysis. The variable would then be dropped out of the analysis even though, at one time, it was a good predictor with other variables but it no longer served as a substantial

contributor. A stepwise procedure was used for this regression analysis with a probability level of p ≤ .05.

Research question 2 considered the boys in the sample (n=56) and asked if there were predictors from among WSES Part A, WSES Part B, WAT Part A, WAT Part B, and the PVWS of DAW scores for boys only. Four models were statistically significant (p ≤ .05) and are depicted in Tables 8 and 9. Table 8 reports the stepwise model summary for boys and presents a summary of each of the four models. Table 9 depicts the model coefficients for boys.

In Table 8, Model 1 R value is .304 and the R^2 value is .092 which accounts for the difference the predictor variable, WAT Part B, contributes to the DAW. Model 2 R value is .404 and the R^2 value is .162 which accounts for the difference the predictor variables, WAT Part B and WSES Part A, contribute to the DAW. In Model 3, the R value is .488 and the R^2 value is .237 which accounts for the difference the predictor variables, WAT Part B, WSES Part A, and WAT Part A, contributes to the DAW. In the final model, Model 4, the R value is .464 and the R^2 value is .207 which accounts for the difference the predictor variable, WSES Part A and WAT Part A contributes to the DAW. Therefore, based upon the most significant model, almost 47% of the variability in student writing achievement on the DAW may be predicted by knowing students scores on the WSES Part A and the WAT Part A.

Table 8

Stepwise model predicting writing achievement summary for boys [a]

Model	R	R^2	$R^2_{adjusted}$	R^2 Change	F Change	Significance
1	.304	.092	.076	.092	$F(1, 54) = 5.501$	p=.023
2	.404	.162	.13	.071	$F(1, 53) = 4.470$	p=.039
3	.488	.237	.192	.073	$F(1, 52) = 5.005$	p=.030
4	.464	.207	.177	-.030	$F(1, 52) = 2.043$	p=.006

[a] Predictor variables: writing self-efficacy part a, writing self-efficacy part b, writing apprehension part a, writing apprehension part b, perceived value of writing

Although all four models were statistically significant, again Model 4 holds the most significance, indicating that Writing Self-efficacy Part A and Writing Apprehension Part A can predict boys' writing achievement. Writing Self-efficacy Part A focuses on an individual's writing self-efficacy level, while Part B measures an individual's self-efficacy in terms of social comparison, or how one rates oneself against others. Writing Apprehension Part A measures the level of apprehension an individual may feel toward writing an essay or a report, while Part B measures the level of apprehension an individual may feel about one's writing skills, including grammar, spelling, and punctuation.

While in previous studies, the writing achievement was measured with a holistically scored essay which students were instructed was important in order to create a "high stakes environment"; in this present study, the essay performance was truly high stakes as it was measured by the performance in the Connecticut Mastery Test Direct Assessment of Writing. Given that the stakes may have appeared higher to the students in this study, it is understandable that apprehension should be measured at a more significant level.

Table 9

Model coefficients predicting writing achievement for boys [a]

Model	Variable	B	β	t	P	Condition Index
1	Writing Apprehension Test Part B	.511	.304	2.345	.023	10.627
2	Writing Apprehension Test Part B	.478	.285	2.259	.028	11.084
	Writing Self-efficacy Scale Part A	.040	.266	2.114	.039	25.851
3	Writing Apprehension Test Part B	.311	.185	1.430	.159	11.032
	Writing Self-efficacy Scale Part A	.057	.378	2.878	.006	13.099
	Writing Apprehension Test Part A	.600	.307	2.237	.030	35.131
4	Writing Self-efficacy Scale Part A	.063	.414	3.185	.002	9.568
	Writing Apprehension Test Part A	.731	.374	2.879	.006	30.452

[a] Predictor variables: Writing Self-efficacy part A, Writing Self-efficacy part b, Writing Apprehension part A, Writing Apprehension part B, Perceived Value of Writing

In Table 9, statistical significance was found in four multiple linear regression models. The condition index values, which indicate how related one independent variable is to another, are all below 30. Thus it can be concluded that multicollinearity is not a problem in this analysis (Belsley, Kuh, & Welsch, 1980; Meyers, Gamst, & Guarino, 2006; Tabachnick & Fidell, 2001). Multicollinearity is a statistical term for the existence of a high degree of linear correlation among two or more variables in a regression model, which makes it difficult to assess the effects of independent variables on the dependent variable.

In Table 9, one can see as each predictor variable is added to the mix, the predictor variables only stay as long as they continue to contribute a positive increase in the R-Square value of the model, that is, meet the significant level of the test. The predictor variables, PVWS and WSES Part B, never met the significance level of the test and thus were not included in any model. Eventually WAT Part B was removed too leaving only the predictor variable WSES Part A and WAT Part A as influences on the DAW for boys.

The t statistic for WSES Part A in Model 4 is 3.185 and is above 2, signifying that WSES Part A is a moderate predictor of writing achievement on the DAW. The t statistic for WAT Part A is 2.879, also above 2, indicating that WAT Part A is a moderate predictor of writing achievement on the DAW, although not as strong as WSES Part A. As both of these t values are positive, there is a positive relationship between the DAW and WSES Part A, and the DAW and WAT Part A, indicating that as the values of the predictors increase, so do the values of the DAW.

Research Question 3

To what extent and in what manner can the variation in writing achievement scores for third-grade girls be explained by self-efficacy for writing (Part A and Part B), writing apprehension (Part A and Part B), and value of writing scores after the influence of ability is explained?

The analysis used to address this question was, again, a multiple regression procedure was using DAW as the dependent variable. The independent variables were WSES Part A, WSES Part B, WAT Part A, WAT Part B, and PVWS. A stepwise regression procedure was used to develop a predictive model for girls. Again, in a stepwise regression, at each step tests are performed to determine the significance of each independent variable as if it were the last to enter (Meyers, Gamst, & Guarino, 2006). A variable may be entered into the analysis and is measuring much of the same construct as another. This reassessment may determine the first variable to enter may no longer contribute anything to the overall analysis. The variable would then be dropped out of the analysis even though, at one time, it was a good predictor with other variables but it no longer served as a substantial contributor. A stepwise procedure was used for this regression analysis with a probability level of $p \leq .05$.

Research question 3 considered the girls in the sample (n=51) and asked if there were predictors from among WSES Part A, WSES Part B, WAT Part A, WAT Part B, and the PVWS for the DAW scores for girls only. One model was statistically significant ($p \leq .05$) and is depicted in Tables 10 and 11. Table 10 reports the stepwise model summary for girls and presents a summary of the model. Table 11 depicts the model coefficients for girls.

In Table 10, Model 1 R value is .285 and the R^2 value is .081 which accounts for the difference the predictor variable, WSES Part A contributes to the DAW. Therefore, almost 29% of the variability in student writing achievement on the DAW may be predicted by knowing students scores on the WSES Part A for girls.

Table 10

Stepwise model summary predicting writing achievement for girls [a]

Model	R	R^2	$R^2_{adjusted}$	R^2 Change	F Change	Significance
1	.285	.081	.063	.081	$F(1, 49) = 4.342$	p=.042

[a] Predictor variables: Writing Self-efficacy Part A, Writing Self-efficacy Part B, Writing Apprehension Part A, Writing Apprehension Part B, Perceived Value of Writing

In Table 11, statistical significance was found in one multiple linear regression model. The condition index value, which indicates how related one independent variable is to another, is below 30. Thus it can be concluded that multicollinearity is not a problem in this analysis (Belsley, Kuh, & Welsch, 1980; Meyers, Gamst, & Guarino, 2006; Tabachnick & Fidell, 2001). Multicollinearity is a statistical term for the existence of a high degree of linear correlation among two or more variables in a regression model, which makes it difficult to assess the effects of independent variables on the dependent variable.

In Table 11, as stated previously, as each predictor variable is added to the mix, the predictor variables only stay as long as they continue to contribute a positive increase in the R-Square value of the model, that is, meet the significant level of the test. All the predictor variables, with the exception of WSES Part A, never met the significance level of the test and thus were not included in any model. Thus, only the predictor variable WSES Part A is an influence on the DAW for girls.

The t statistic for WSES Part A in Model 4 is 2.084 and is just above 2, signifying that WSES Part A is a weak predictor of writing achievement on the DAW. As this t value is positive, there is a positive relationship between the DAW and WSES Part A, indicating that as the value of this predictor increases, so does the value of the DAW.

Table 11

Model coefficients predicting writing achievement for girls [a]

Model	Variable	B	β	t	P	Condition Index
1	Writing Self-efficacy Scale Part A	.036	.285	2.084	.042	17.505

[a] Predictor variables: Writing Self-efficacy Part A, Writing Self-efficacy Part B, Writing Apprehension Part A, Writing Apprehension Part B, Perceived Value of Writing

As the only statistically significant predictor for DAW scores for girls, as indicated in the multiple regression model, was the WSES Part A, which measures the individual level of self-efficacy, it appears that different factors may influence success on the DAW based on gender.

CHAPTER V

SUMMARY AND CONCLUSIONS

Chapter five provides an analysis of the results of this study examining the relationship between writing achievement and writing motivation, as defined by writing self-efficacy, writing apprehension and perceived value of writing, by gender for third-grade students in a suburban school district. Additionally, results of the current study are compared to key studies discussed in chapter two. Lastly, conclusions and suggestions for further research are provided.

Writing is a task requiring multiple skills and perseverance in order to succeed. Research on motivation has underscored the critical relationship between writing success and affective variables. This research reveals that one of the key factors for developing writing motivation is writing self-efficacy. Bandura's social cognitive theory defined self-efficacy as belief in one's ability to successfully conclude a task. Current research acknowledges self-efficacy as a strong predictor of academic success, even when ability is controlled. Graham and Weiner (1996) contended self-efficacy has become the key focus of studies in academic motivation. Additionally, writing motivation has developed into a promising area for gender gap in achievement research (Faigley, Cherry, Jolliffe, & Skinner, 1985; Pajares & Valiante, 1999, 2001).

The purpose of this study was to examine the relationship between writing achievement using the *Connecticut Mastery Test Direct Assessment of Writing* (Connecticut State Department of Education, 2004), and writing motivation using the: *Writing Self-efficacy Scale* (Pajares, Miller, and Johnson, 1999), *Writing Apprehension Scale* (Pajares, Miller, & Johnson, 1999), and *Perceived Value of Writing Scale* (Pajares, Miller, & Johnson,

1999), and controlling for achievement or general aptitude, by using the *Otis-Lennon School Ability Test* (OLSAT) (Harcourt Assessment, 2006). For the purpose of this study, the construct writing motivation was defined by writing self-efficacy, writing apprehension and perceived value of writing (Pajares, Miller, and Johnson, 1999). This study followed research protocols developed by previous studies in this particular area. Through quantitative methodology, the data were analyzed to provide direction as to what motivational factors played a key role in impacting student writing.

Review of Findings

Three research questions were posed by this study. Each of the questions was addressed individually and the level of significance for all analyses was $p \leq .05$ or less.

Research Question 1

Is there a significant difference in writing achievement scores between boys and girls after accounting for the scores in aptitude?

An analysis of covariance (ANCOVA) was used to examine this question. The independent variable for this analysis was gender, the dependent was the DAW and the covariate was the OLSAT Total Score. The ANCOVA results revealed there was a significant difference for gender ($F (1, 104) = 11.950$, $p=.001$). The covariate, general aptitude (OLSAT) did not significantly influence the dependent variable. This result reflects a national trend that a gender gap in writing achievement exists which contradicts the presence of general aptitude. This data is consistent with Bandura's social cognitive theory and propose that factors other than aptitude influence writing achievement.

Research Question 2

To what extent and in what manner can the variation in writing achievement scores for third-grade boys be explained by self-efficacy for writing (Part A and Part B), writing apprehension (Part A and Part B), and value of writing scores after the influence of ability is explained?

The analysis used to address this question was a multiple regression procedure with DAW used as the dependent or predicted variable. The independent or predictor variables were WSES Part A, WSES Part B, WAT Part A, WAT Part B, and the PVWS. A stepwise regression procedure was used to develop a predictive model for boys. A four step model was statistically significant ($p < .05$). The most comprehensive model (step 4) indicated factors from both the WAT A and WSES A predicted boys' scores on the DAW. This data is consistent with findings in other studies, notably the McCarthy, Meier, and Rinderer (1984) study of college age students. According to Bandura's social cognitive theory, affective factors such as writing apprehension play a mediational role in writing self-efficacy (Pajares, Miller & Johnson, 1999). Educators should bear this in mind when implementing writing curriculum and purposefully address both apprehension and self-efficacy in writing for boys.

Research Question 3

To what extent and in what manner can the variation in writing achievement scores for third-grade girls be explained by self-efficacy for writing (Part A and Part B), writing apprehension (Part A and Part B), and value of writing scores after the influence of ability is explained?

The analysis used to address this question was, again, a multiple regression procedure using DAW as the dependent variable. The independent variables were WSES Part A,

WSES Part B, WAT Part A, WAT Part B, and the PVWS. A stepwise regression procedure was used to develop a predictive model for girls. The statistically significant predictor for DAW scores for girls, as indicated in the multiple regression model, was the WSES Part A. It appears different factors may be influencing success on the DAW based on gender.

Compare and Contrast to Literature Review

The findings of this present study produced similar results to previous studies in that self-efficacy made an independent contribution to writing achievement. As discussed in chapter two, in the meta-analysis of self-efficacy research conducted over ten years, Multon, Brown and Lent (1991) found that self-efficacy related to academic achievement ($r_\mu=.38$) and accounted for approximately 14% of the variance. The authors suggested studies that examined a specific academic self-efficacy to a related academic area, found the greatest effect sizes. Additionally, this current study supports Multon, Brown and Lent's (1991) contention that elementary school-age students' self-efficacy beliefs are tied to motivation and performance.

Graham, Berninger and Fan also (2007) used elementary age students in their study which discussed in chapter two. The results of this current study have interesting correlations to the study of Graham, Berninger and Fan (2007). Graham, Berninger and Fan (2007) examined the relationship of writing achievement and writing attitude through three structured models. These models consisted of (a) writing attitude influences writing achievement in a one direction, (b) writing achievement influences writing attitude in one direction and (c) the effects of writing attitude and achievement are bidirectional and reciprocal (Graham, Berninger & Fan, 2007). The authors operationalized writing attitude in much the same way as writing self-efficacy and perceived value of writing were

operationalized in this current study. Students were asked about how writing made them feel, (whether it was for fun or assigned) and whether they enjoyed writing during their free time, or in school or during vacation. The sample in the Graham, Berninger and Fan (2007) study consisted on 128 first-grade students (n= 70 girls and 58 boys) and 113 third-grade students (n= 57 girls and 56 boys) in a large metropolitan Northwest school with a lower socioeconomic status than the current study. Of this sample, 65% were White, 23% Asian, 8% Black, 1% Hispanic, and 1% Native American.

Writing achievement was measured by a combination of student performance on the PAL Compositional Fluency subtest (essay test) and the WIAT-2 Written Expression subtest. Model 1, writing attitude influences writing achievement in one direction, was the best fit for the data. Thus how one feels about writing will predict how one will perform on these writing achievement measures. The current study supports this finding and builds upon it, as "writing attitude" is refined into three dimensions, writing self-efficacy, writing apprehension and perceived value of writing. Although perceived value of writing was not a significant influence on writing achievement, writing self-efficacy and writing apprehension were significant predictors for boys while writing self-efficacy was a moderate predictor for girls. The current study builds upon the literature by underscoring that both positive and negative affect can influence writing achievement after controlling for ability.

Additionally, the Graham, Berninger and Fan (2007) discovered that girls possessed a more positive attitude towards writing than did boys. This current study supports this finding as writing apprehension was a significant predictor for boys only.

Another study discussed in chapter two was the work done by Pajares Miller and Johnson (1999) that examined a sample of elementary age students as well. The authors

investigated whether writing self-efficacy was predictive of writing achievement and whether there were gender differences in writing self-beliefs among this population (Pajares Miller & Johnson, 1999). The population consisted of a total of 363 third- (n=105), fourth- (n=123) and fifth-grade (n=135) students from three public elementary schools in the South. The population was predominantly White and middle class and only general education students participated. Akin to the present study, a holistically scored essay was used to measure writing achievement, and the same writing self-efficacy, writing apprehension and perceived value of writing instruments were employed to measure the dimension of writing motivation.

However, the Pajares, Miller and Johnson (1999) study used teacher ratings of students to control for aptitude unlike the present study, which used an aptitude test (OLSAT) to control for same. The results of the Pajares, Miller and Johnson (1999) study shared some similarities to the current study in writing self-efficacy was predictive of writing achievement after controlling for aptitude. However, the authors found writing apprehension non-significant. Similar to the present study, the authors found gender differences in writing achievement which indicated that girls were better writers and had less apprehension than boys. The current study supports these findings and adds to the literature by employing a more accurate control for aptitude (OLSAT) and by employing a true high stakes environment by using the Connecticut Mastery Test Direct Assessment of Writing essay test.

While Pajares and Valiante (2001) employed elementary age students in their study (218 fifth-graders), their findings differed slightly from the aforementioned studies. The sample was 218 fifth-graders from three public schools; two in the South and one in the Southwest, with 115 girls and 103 boys. Similar to the Pajares, Miller and Johnson (1999)

study, a holistically scored essay was employed to measure writing achievement. The same instruments (writing self-efficacy, writing apprehension and perceived value of writing) as was used in the current study measured writing motivation. The authors found no gender difference in writing achievement but did reveal that girls possessed higher writing self-efficacy and had lower writing apprehension (Pajares &Valiante, 2001). Pajares and Valiante (2001) concurred that writing self-efficacy does make an independent contribution to writing achievement above and beyond the effect of aptitude. Again, the current study builds upon these findings by employing a more accurate measurement to control for aptitude and by engaging a true high stakes essay test. While the current study supports most of the findings of this study, the additional finding that writing apprehension is a significant influence for boys in addition to writing self-efficacy adds to the literature.

The McCarthy, Meier and Rinderer (1985) study employed a different population, college age students. However, their findings are of interest relative to this current study. The authors tested three hypotheses (a) students with high writing self-efficacy will be better writers, (b) students with less writing apprehension will perform better than students who have high writing apprehension and (c) student who believe their locus of control is internal will be better writers compared to students who believe their locus of control is external (McCarthy, Meier & Rinderer, 1985).

The study consisted of 137 college freshmen from Southern Illinois University. The students' writing ability was measured through assigned holistically scored writing essays. The students' self-efficacy was measured through a Self-assessment of Writing measure and the Writing Apprehension was measured in a similar fashion. Finally the students also completed a locus of control questionnaire. Similar to the current study, the authors found

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that writing self0efficacy and writing apprehension were significant predictors of writing achievement, although in the current study writing apprehension was significant for boys only. The current study adds to the literature by employing a sample of third-grade students.

Given the variations in gender response to writing motivation measures, it has been suggested by various researchers (Noddings, 1996; Skaalvik, 1997), that these differences between boys and girls may exist because boys and girls use different frame of reference to answer on writing motivation instruments. This difference suggests that further work is needed on assessments which will clarify any different metric used by boys and girls in their responses. The body of work conducted on the relationship between writing achievement and writing motivation indicates the symbiotic relationship between these two areas.

Limitations to the Study

One limitation to the external validity of this study is that it was a sample of convenience that was very specific to the particular population and is not easily replicated. However, the population is described in enough detail to provide the necessary explanation to the reader. Additionally, a limitation to the internal validity of this study was that self-report instruments, such as the ones employed in this study, are prone to some amount of inaccuracy by their very nature. However, it is the only method to obtain these types of data concerning student perceptions of their writing motivation. To overcome this deficit, the data collectors, who were experienced writing resource teachers, were trained to read both the directions and items and to clarify any unfamiliar or confusing terms to the students in order to insure accuracy in data collection procedures and to encourage students to provide honest responses. In addition, all instruments had adequate validity and reliability, providing confidence in the results.

The study controlled for general aptitude with the inclusion of the OLSAT scores. Finally, correlational design implies prediction but not causation. Data were carefully interpreted to identify relationships rather than causation.

It should be noted that this was an exploratory study which employed $p \leq .05$ as the significance level, but that at $p \leq .02$, there was no significant predictor beyond aptitude for writing achievement for girls.

Concerning delimitations, the sample only included third grade students whose parent or guardian granted permission to participate in the study. Another delimitation was that the students in this sample attended a specific school district and that these students had never taken any type of self-efficacy, writing apprehension or perceived value of writing instrument.

Implications of the Study

Pajares, Miller and Johnson (1999) suggested educators should direct as much attention to a student's writing beliefs as to his or her writing abilities as those beliefs may control performance as well as future academic choices. The apparent differences in writing apprehension by gender further indicate educators may choose to address these differences through explicit instruction. McLeod (1987) pointed out that it is as important to teach to improve the affective part of writing instructions as the cognitive part for writing, since writing is as much emotional as it is cognitive.

McLeod (1987) further suggests that although numerous studies have been conducted to investigate the relationship of writing apprehension to writing achievement, little to no studies have been done to understand how writing apprehension develops. Given the findings of this current study, along with the other studies mentioned in the review of literature, it

behooves educators to not only understand the levels of writing self-efficacy in their students, but to measure their levels of writing apprehension. Furthermore, educators should understand that levels of writing self-efficacy and levels of writing apprehension might vary according to the writing task and or topic. Additionally, McLeod (1987) suggests that not all writing apprehension is negative, that at time, over-anxious writers may find that they are more engaged in the writing, and thus, more apt to perform well.

Bruning and Horn (2000) build upon McLeod's work and other writing motivation research and established clear guidelines for educators to improve writing motivation. The authors suggest that there are four clusters of conditions that are key to developing and increase writing motivation: (a) nurturing functional beliefs about the nature of writing and its outcomes, (b) foster student engagement through authentic goals and contexts, (c) providing a supportive context for writing, and (d) creating a positive emotional environment.

Bruning and Horn (2000) advocate further research in the area of writing motivation is as key as further cognition research. The authors state: "Although there is a wealth of practical knowledge about writing instruction, there is still relatively little in the way of scientific analysis aimed at the motivational factors critical to writing development. " (Bruning & Horn, 2000, p 26.) Bruning and Horn (2000) assert that there is a direct relationship between the writing beliefs that teachers possess and their ability to model and nurture their students. As the authors point out, most children learn to communicate orally with great confidence, so should learn to communicate in written form with the same confidence.

Among the authors plentiful suggestions built around the four "clusters" are letting students see how teachers process their own writing, letting students write about what interests the, giving explicit feedback for improvement and providing a positive, safe environment to write (Bruning & Horn, 2000).

Suggestions for Future Research

Bruning and Horn (2000) urged researchers to further study social cognitive variable connected to cognitive analyses in order to better understand writing motivation. The authors suggest that researchers need to investigate what task conditions promote writing motivation and "flow" (Bruning and Horn, 2000). Qualitative research would be helpful in this area as researchers could ascertain by studying skilled writers of different ages, gender, and background to investigate what factors engage them in the writing task.

Additional research needs to be done with a more easily generalizeable population. Future assessments of self-efficacy need to be refined to account for any differences which boys and girls may have in their frame of reference used to respond to such instruments. Further, it is advisable to monitor student writing results in a longitudinal experimental study with the aim or investigating not only whether these findings may change over time, and what could be done to address that possibility, but to examine whether or not instructional practices may influence these findings.

The essential key to future research in the academic area of writing is the marriage of the investigation of the affect as well as the cognitive. In no other academic area is the intertwined relationship between the two so imperative to understand. Mihali Csikszentmihalyi wrote of the important balance between emotional and cognitive engagement when he described "flow". As Piaget himself said, "At no level, at no state, even

in the adult, can we find a behavior or state which is purely cognitive without affect nor a

purely affective state without a cognitive element involved" (Derry & Murphy, 1986, p. 29).

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APPENDIX A
PARENT PERMISSION LETTER

Consent to Participate in Doctoral Dissertation Research Study
The Relationship Between Writing Beliefs and
Writing Achievement in a Suburban Elementary School

Spring 2007

Dear Parent or Guardian,

My name Joan McGettigan and I am a fifth-grade teacher at XXXX School. I am also enrolled in the doctoral program for Instructional Leadership at Western Connecticut State University. Part of the degree requirements involves completing original research on a topic of importance to the field of education. The purpose of this letter is to inform you of my research and to obtain your approval for your child to participate. Details are provided below; however, the general focus is on the effect of writing beliefs on writing achievement for grade 3 students. All information gathered will coded to preserve anonymity and the strictest standards of confidentiality will be adhered to in the crafting and presentation of the dissertation. I have presented my research proposal to my University committee and to the XXXXX School administration; both have given approval for me to proceed with the study pending parent approval of student participation. Detailed information is provided below, as is a response form for you to complete and return.

This study examines the relationship of writing self-efficacy, writing apprehension and the perceived usefulness of writing and their relationship to achievement as measured by the Direct Assessment of Writing portion of the Connecticut Mastery Test. I have chosen this research topic because I believe any additional understanding I can bring to this area will benefit XXXXX School students and their teachers as we develop confident, capable and creative writers.

To complete my research I will need to gather the following data: Connecticut Mastery Test Direct Assessment of Writing scores, OLSAT scores and responses to three instruments which will be administered during the school day, *Writing Self-efficacy*, *Writing Apprehension* and *the Perceived Usefulness of Writing* to each participant. These instruments are fairly short in length and take approximately 15 minutes each. A coding system will be used to maintain anonymity and confidentiality.

The 3 instruments listed above will be delivered and collected in sealed envelopes. Administration will be carefully scheduled so as not to interrupt academic instruction. Responses will not be shared with anyone, including classroom teachers or administrators; they will not affect your child's grades in anyway.

All data will be reported in group form. At no time will names of students, schools or the district be reported or used in the study or dissertation. It is my belief that my research will be provide insight on the relationship between writing self-efficacy and writing achievement in ways that benefit students and their learning. Upon request, I will share the results of the research. Your participation in the study is completely voluntary, and you are free to remove your child from the study at any time.

If you have any questions, or would like to speak with me further about the project, please contact me at XXXX School (203-XXX-XXXX) or via email at XXXX. If you agree to have your child participate in the research, please complete the attached form, and return it to your child's teacher by May xx. Thank you for your support.

Sincerely yours,
Joan McGettigan