ABSTRACT

Title of dissertation: INVESTIGATION OF THE RELATIONS BETWEEN DOMAIN-
SPECIFIC BELIEFS ABOUT WRITING, WRITING SELF-
EFFICACY, WRITING APPREHENSION, AND WRITING
PERFORMANCE IN UNDERGRADUATES

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Writing has been called the "neglected 'R'" in the traditional trilogy of reading, 'riting, and 'rithmetic (National Commission on Writing, 2003). Writing performance continues to languish, despite societal expectations that students should be able to write clearly and precisely. Sociocognitive theory predicts that writing beliefs are related to writing performance. Much research has focused on writing self-efficacy beliefs and their link to writing apprehension and writing performance, while research exploring another type of belief, domain-specific beliefs about writing itself, is sparse. This study examined the relations between these beliefs about writing, writing self-efficacy, and writing apprehension, and their links to writing performance.

This research was a three-phase study. Phases I and II involved instrument construction and validation, while Phase III examined the relations among the research

variables. Two hundred eighty-seven Hispanic women students completed a test battery in class measuring demographics, beliefs about writing, writing self-efficacy, and writing apprehension. Writing performance was measured separately on an authentic writing task, a take-home paper, by both an overall grade and six component grades. Inter-rater agreements on these grades ranged from $r = .83$ to $.91$.

Hierarchical regression analyses revealed that beliefs about writing independently predicted writing performance and that some beliefs about writing (e.g., Good writers adapt their message to their readers) are adaptive and associated with strong writing performance, while other beliefs about writing (e.g., Readers are impressed by big words) are maladaptive and relate to weak writing performance. In addition, apprehension about making grammatical and other mechanical errors had a stronger negative effect on writing performance than the more traditional concept of writing apprehension, which concerns sharing one's writing with others and having it critiqued. After controlling for domain-specific beliefs, writing self-efficacy weakly predicted writing performance as well.

These results support the need for future research examining the relations among the research variables and writing performance in samples that are more balanced with respect to gender and ethnicity, and with other writing tasks. Because beliefs about writing demonstrated the largest beta weights in the regression equations, these beliefs may have the most promise for promoting both writing research and practice.

INVESTIGATION OF THE RELATIONS BETWEEN

DOMAIN-SPECIFIC BELIEFS ABOUT WRITING,

WRITING SELF-EFFICACY, WRITING APPREHENSION, AND

WRITING PERFORMANCE IN UNDERGRADUATES

By

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Dissertation submitted to the Faculty of the Graduate School of the
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DEDICATION

To Edward and Celia,

my parents,

who gave me opportunities

that they never had

to pursue an education

and

to Helen, Chester, and Stanley,

my aunt and uncles,

who helped me fulfill my dreams after mom and dad were gone

and

to Edward, Robert, Dianne, and Susanne,

my brothers and sisters,

who have stood with me in love and support for so many years

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CHAPTER I

INTRODUCTION

Writing is one of the two pillars of basic literacy (National Commission on Writing, 2003). Writing allows us to express ourselves personally and publicly, to communicate with others, to gather and clarify information, to explore our thoughts and feelings, to document and transmit our findings, and to exercise our rights and duties as citizens.

> At its best, writing has helped transform the world. Revolutions have been started by it. Oppression has been toppled by it. And it has enlightened the human condition. American life has been richer because people like Rachel Carson, Cesar Chavez, Thomas Jefferson, and Martin Luther King, Jr., have given voice to the aspirations of the nation and its people.
> (National Commission on Writing, 2003, p. 10)

Writing skills are an essential part of the academic foundation all children need. Writing allows students to express themselves, perform key assignments, develop essential critical thinking skills, and enhance their cognitive functioning (Graham & Perin, 2007c). Now that a writing assessment has been added to the college entrance examinations, writing is a gateway to higher education (e.g., National Council of Teachers of English, 2008). Writing is also an essential skill in the workplace, the arena for which we are training our students to succeed and excel in the future. The National Commission on Writing for America's Families, Schools, and Colleges, which surveyed 120 human resource directors in companies affiliated with the U.S. Business Roundtable, reported that writing skills are an essential prerequisite to highly skilled, well paying,

professional jobs (National Commission on Writing, 2004). As the National Commission on Writing (2003) stated, "Writing today is not a frill for the few, but an essential skill for the many" (p. 11).

<div align="center">The State of Writing Skills in the United States</div>

Nevertheless, despite their importance, writing skills in the United States are poor across all segments of the population, from school children to college students to working adults (Graham & Perin, 2007c; National Commission on Writing, 2004; Salahu-Din, Perksy, & Miller, 2008). The most recent results from the National Assessment of Educational Progress (Salahu-Din et al., 2008) indicate that although writing achievement among 8th and 12th graders has risen significantly from 1998 to 2007, only one-third of the nation's 8th graders and one-quarter of the country's 12th graders are proficient in writing. More disturbing, one-eighth of the nation's 8th graders and close to one-fifth of the nation's 12th graders lack even basic writing skills. A mere 2% of the 8th graders and 1% of the 12th graders have advanced skills. Girls in both grades score higher than boys, and whites and Asians in both grades score higher than blacks and Hispanics. Data from our nation's workplaces is similarly disconcerting. The National Commission on Writing, dismayed at the need for and cost of remediation in writing, has called writing "the neglected 'R' in school reform" (National Commission on Writing, 2004).

Research in writing is needed to address this national crisis, but such work is only recently emerging from its fledging period and becoming plentiful enough to meet the nation's needs for sound and tested approaches to writing research and instruction. For example, writing research has only recently become extensive enough to merit the publication of the first handbooks of writing research (i.e., Bazerman, 2008; MacArthur,

Graham, & Fitzgerald, 2006; Smagorinsky, 2005). These publications identify a number of strong theoretical lenses for studying writing and developing sound classroom interventions. One of these theoretical frameworks is Albert Bandura's (1989) social cognitive theory.

Social Cognitive Theory

Social cognitive theory establishes a triadic reciprocity in which individuals, their behavior, and their environment reciprocally act upon each other. People are thus both the producers and products of their environments as they shape and are shaped by their social structures. People and their environments reciprocally act upon one another via psychological processes including cognitive processes, such as beliefs and self-regulation, and emotional processes, such as anxiety.

Beliefs

Self-Efficacy

One of the most central psychological processes in Bandura's theory is an individual's self-efficacy or belief in his or her "capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Self-efficacy has strongly predicted behavior and performance in a variety of arenas including education, sports, and health maintenance, and business (Bandura, 1997). Bandura maintains that people are more likely to take on challenges for which they are self-efficacious, try harder to succeed at them, persist more in the face of obstacles and setbacks, and do so with less anxiety and negative affect. Bandura describes four sources of self-efficacy: (a) one's previous experiences with the task or domain, (b) the vicarious experiences one attains by observing others, (c) verbal persuasion, including

encouragement and feedback, and (d) the physiological feedback one receives in association with the task, such as sweaty palms or a churning stomach (Bandura, 1997).

Writing self-efficacy is one's confidence in one's ability to perform writing skills and writing tasks. A large number of prominent educational psychologists, including Roger Bruning, Steve Graham, Frank Pajares, Dale Schunk, and Barry Zimmerman (e.g., Graham, Schwartz, & MacArthur, 1993; Pajares & Valiante, 2006; Schunk & Swartz, 1993; Shell, Murphy, & Bruning, 1989; Zimmerman & Bandura, 1994), have applied social cognitive theory to writing by exploring the relationship between self-efficacy for writing and writing performance in studies involving students ranging from 4th graders to college undergraduates. In this and other research, writing self-efficacy has consistently been associated with writing performance, as students with high writing self-efficacy write better than those whose writing self-efficacy is low. With respect to gender, Pajares, Miller, and Johnson (1999) found that the 3rd, 4th, and 5th grade girls in their study wrote better than did the boys, but had similar writing self-efficacy. Pajares and Valiante (1999) investigated this paradox and found that both the girls and the boys who participated thought the girls were better writers than the boys. The authors concluded that the girls had evaluated their writing self-efficacy according to a stricter standard than did the boys. As for ethnicity, Pajares and Johnson (1966) found that the white 9th graders in their study had higher writing self-efficacy and writing performance than did the Hispanic 9th graders they studied. This research supports Bandura's theory that self-efficacy acts as a mediator between performance, in this case writing performance, and other influences on behavior, such as skills and abilities. The researchers who pioneered in this area (e.g., Meier, McCarthy, & Schmeck, 1984) developed the first generation of writing self-

efficacy measures, which heavily emphasized mechanical writing issues, such as grammar and punctuation, over substantive writing, such as argument and organization. Subsequent investigators (e.g., Zimmerman & Bandura, 1994) created a second generation of more comprehensive measures that brought these substantive and mechanical issues into better balance and thus into increased alignment with the standards for the writing tasks they were assessing. Aside from the Pajares group's investigation of gender and ethnicity, however, little research on woman or Hispanics, an important and growing population in the U.S. (Bernstein, 2005), has been done with respect to writing beliefs and performance.

Beliefs About Writing

A second type of belief that seems to affect writing performance is beliefs about writing, such as students' beliefs about what good writing is and what good writers do, including the effectiveness of various writing strategies and processes. In contrast to writing self-efficacy, writers' beliefs about themselves with respect to their ability to write, beliefs about writing address writers' beliefs about writing tasks and skills as well as the procedures involved in performing these tasks and skills well.

The investigation of these beliefs is only in its early stages. Nevertheless, a few themes are emerging from the initial studies in this area, such as a distinction between a focus on substantive versus mechanical issues (e.g., comprehensive revision as opposed to surface editing) and an emphasis on artistic creation as opposed to strategy-based craftsmanship. Several of the researchers working in this area (e.g., Graham et al., 1993; Silva & Nicholls, 1993) have indicated that these domain beliefs about writing affect writing performance. Most hypothesize that this effect is cognitive and mediated by the

strategies writers select. Others suggest that this link is affective as certain beliefs about writing, such as the belief that writing skills are innate, may foster writing apprehension and the extent to which students like to write (Charney, Newman, & Palmquist, 1995; Palmquist & Young, 1992). Thus, some beliefs may be adaptive, or related to good writing, while others may be maladaptive, or associated with weak writing performance. This classification and terminology is consistent with that used by motivational researchers such as Dweck and Leggett (1988) and writing researchers includes Pajares and Valiante (2006).

Of the few studies of these beliefs, some look at only one or two beliefs about writing, such as the notion that writing skills are an innate gift or a skill that develops with time and practice (Charney et al., 1995; Palmquist & Young, 1992). Although some of these studies are rooted in the theory of rhetoric (Silva & Nicholls, 1993) or in the research on reading and not writing (White & Bruning, 2005), none reflects the beliefs and principles underlying expert writing and editing practice. According to Glaser and Chi (1988), experts differ from novices in a number of ways, including their ability to see and represent problems in their domain at a deeper level than do novices. Investigating the beliefs underlying expert practice may lead to the discovery of adaptive beliefs that could serve as the bases of writing instruction.

Anxiety

Bandura's theory also addresses emotional aspects of the individual, especially anxiety. Bandura theorizes that a person's self-efficacy determines the extent of his or her anxiety in a given situation. People with low self-efficacy tend to search for ways to

avoid anxiety-producing situations, while those with high self-efficacy are more likely to confront such situations and reduce the threat they pose (Bandura, 1997).

Writing researchers have been studying writing apprehension, a type of anxiety, since 1975. People with high writing apprehension avoid writing, especially when it is to be evaluated in some way. They expect negative evaluations of their written work and thus avoid classes and jobs that involve writing (Daly & Miller, 1975b). The early research of writing apprehension found that individuals with high writing apprehension wrote statistically significantly less well than those with low writing apprehension (Hillocks, 1986). Researchers studying writing through the lens of social cognitive theory have included writing apprehension in their research since 1985. These researchers found statistically significant associations between high writing apprehension and both low writing self-efficacy (e.g., Meier et al., 1984) and poor writing performance (e.g., Pajares, Britner, & Valiante, 2000; Pajares & Valiante, 1999). In path-analytical investigations, the effects of writing apprehension were nullified when writing self-efficacy was included in the model (Pajares & Valiante, 1997). Pajares and Valiante interpreted these results as a confirmation of Bandura's theory (1997) that anxiety is a byproduct of efficacy.

<center>Writing Assessment</center>

Assessments of student writing performance on college entrance exams, most state-level, high-stakes tests, and most research on writing tend to be based on a single writing sample written on demand in response to a prompt during a short period of time, usually 20 to 30 minutes, in a classroom or a testing center (Hillocks, 2008). This type of assessment has serious shortcomings including its frequently inflexible format; its lack of

authenticity; the restraints it places on students' use of writing strategies and their writing process, including planning, revising, and reflection; its possible emphasis of writing speed over writing skill; and its possible discrimination against certain groups of students, particularly those who are unfamiliar with the topic associated with the writing prompt (e.g., Coker & Lewis, 2008).

Most of the writing samples gathered for such assessments are scored holistically with a single score like the letter grade students commonly receive on their papers in school. However, some researchers (e.g., White & Bruning, 2005) have assessed individual components of writing and then determined the effects of the independent variables on these various components; others have summed these component scores or computed their mean value to create an overall, holistic score that reflects key writing components (e.g., Shell et al., 1989). Although holistic scores are more parsimonious, component or analytical scoring can give a finer-grained view of the students' writing performance and how this performance is shaped by personal factors and interventions. Some work has been done with respect to determining which components of writing are most important and thus should be included in analytical assessments (e.g., Diederich, 1966). However, little research has been conducted recently in this area.

Statement of the Problem

Taken together, the studies performed to date offer valuable insights for both researchers and writing teachers about the importance of writing self-efficacy and writing apprehension on overall writing performance and about the relationship of these two variables on one another. The research literature points to the promise of expanding this research model to include beliefs about writing in that several of the researchers working

in this area have noted a relation between beliefs about writing and writing performance (e.g., Silva & Nicholls, 1993). Although several common themes seem to be emerging in studies defining beliefs about writing, this literature remains fragmented and disjointed, with very few researchers to date building upon the work of the others.

Researchers from the fields of rhetoric and composition have led the way in the investigations of this area along with some educational psychologists (e.g., White & Bruning, 2005), but there has yet been no effort to examine the beliefs underlying expert writing and editing practice. Much more information is needed about the nature of these beliefs, such as whether they affect writing performance and the mechanisms through which they may do so, either directly or indirectly via such variables as writing self-efficacy and writing apprehension. Much more also remains to be learned about which of these beliefs may be adaptive and which may be maladaptive, and why.

Such research would likely benefit from writing assessments of more authentic samples of student writing than short on-demand essays, including samples students write with time for planning, the use of a full complement of writing strategies, reflection, and revision. The investigations needed to fill these gaps in the literature will likely need to be more fine-grained than the studies of more straightforward constructs such as writing self-efficacy and writing apprehension. They thus will need more specific measures of writing performance that reflect the various components of good writing. Some work has been done on the development of such measures, but this does not seem to be an area of active research at this time.

Purpose of the Study

This correlational study extends the research literature on writing self-efficacy, writing apprehension, and writing performance by adding *beliefs about writing* to this line of research. The study also attempted to integrate the work on beliefs about writing and broaden it to include the perspective of expert writers and editors. The measures of writing self-efficacy, writing apprehension, and writing performance were expanded as well to increase their alignment with one another and with expert writing and editing practice. The writing task used was an actual paper that undergraduates wrote for credit in an educational psychology class. The research questions guided this study were as follows:

1. What is the relation between beliefs about writing, writing self-efficacy, writing apprehension, and writing performance?

2. What are the unique contributions of beliefs about writing, writing self-efficacy, and writing apprehension to writing performance?

Based on the literature, I expected some beliefs about writing (e.g., the belief that writing helps one understand the content that one is writing about) to be adaptive (i.e., predictive of high writing performance) and some (e.g., the belief that writing skills are innate) to be maladaptive (i.e., predictive of weak writing performance). In addition, I expected high writing self-efficacy and low writing apprehension to be positively associated with strong writing performance and low writing self-efficacy and high writing apprehension to be associated with weak writing performance.

I conducted correlational analyses to answer research Question 1 and a hierarchical regression analysis to answer Question 2. These analyses are explained in greater detail in Chapter III.

Significance of the Study

Investigating beliefs about writing within the framework of social cognitive theory may provide a more comprehensive view of the individual (person) aspects of this theory by expanding our view of the types of beliefs that affect writing performance beyond self-efficacy and apprehension, which have been well researched in the writing and educational psychology literatures (e.g., Pajares et al., 1999; Zimmerman & Bandura, 1994). Such an investigation may also create a broader view of the development of self-efficacy beliefs, which Bandura sees as among the most central of the beliefs addressed by his theory (Bandura, 1997). The exploration of beliefs about writing may help integrate and extend the research in this area, which may prove valuable for future writing researchers from both educational psychology and English composition backgrounds. Incorporating the framework of expert writers and editors into the measures of beliefs about writing, writing self-efficacy, and writing apprehension may also align research on writing more closely with expert writing practice.

The field of educational psychology may also be enhanced by the development of more fine-grained measures of writing performance that assess writing not only holistically but by a number of individual writing components, as well as writing self-efficacy measures that are more closely aligned with the beliefs underlying expert writing practice. Researchers using such measures will be able to develop more comprehensive profiles of the strengths and limitations of current writing interventions. These measures

may also be able to support the development of new writing interventions that target specific shortcomings. This type of information will allow teachers to help students with specific as well as overall writing problems. The exploration of beliefs about writing and their possible effects on writing self-efficacy, writing apprehension, and writing performance could create potential leverage points that teachers can use to improve negative attitudes about writing, the tendency to use writing strategies and processes effectively, and thus writing performance. Finally, additional research on Hispanic women will give the field a clearer understanding of this important and rapidly growing segment of the U.S. population (Bernstein, 2005).

Definitions of Terms

Beliefs about writing are writers' beliefs about what good writing is and what good writers do, including the effectiveness of various writing strategies and processes.

Self-efficacy is a person's "capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3).

Writing self-efficacy refers to a person's confidence in his or her own ability to perform various writing skills and writing tasks. (Pajares, Hartley, & Valiante, 2001)

Writing apprehension is the tendency of people to avoid writing, especially when it is to be evaluated in some way (Daly & Miller, 1975b).

Delimitations

This study was limited in a number of ways. This study examined three variables that may affect writing performance; other promising variables were not considered here. In addition, the study was conducted in an education course at only one university in south Florida, a multicultural area with a rich international influence, where teacher

candidates are primarily Hispanic females. The study also used only a single writing sample to assess student writing performance even though Hayes, Hatch, and Silk (2000) found that a relatively large number of samples may be need to obtain writing consistency, a form of test-retest validity. Although these writing samples were written for an actual class for class credit, there was no assurance that the participants prepared them entirely on their own.

<div align="center">Limitations</div>

This study also had a number of research limitations. First, the study used a correlational design, which does not facilitate the exploration of cause-and-effect relations. The participants were volunteers, which raises the possibility that those who did not elect to participate or complete the study may have been different in some important way from those who did not participate. It is thus not possible to generalize beyond the types of students who agreed to participate. The measures were self-report instruments that were administered in a single setting. As noted in the research literature (Podsakoff et al., 2003), this type of measure is subject to common method variance and, therefore, is susceptible to inflation of the correlations. Self-report measures, too, only indicate the participants' perceptions about the variables. This study did not include observations or other measures that might confirm or challenge these self-reports.

CHAPTER II

REVIEW OF RELEVANT RESEARCH

This review provides a conceptual framework for an exploration of the existing research on the affects of beliefs about writing, writing self-efficacy, and writing apprehension on writing performance, as well as a summary and discussion of the research conducted in this area. The review has six major sections. The first looks at the quality of writing achievement in the United States today as well as the general state of writing research. The second section discusses social cognitive theory, the conceptual framework for this study, which maintains that individuals, their behavior, and their environments mutually influence and shape one another in a triadic reciprocity. The following three sections examine the three independent variables in this study. Section 3 discusses beliefs about writing, which are individuals' beliefs about writing and writing tasks, including the nature of good writing and good writing practices. Section 4 addresses the second type of belief, writing self-efficacy beliefs, which are writers' beliefs about themselves with respect to their writing skills and their ability to execute writing tasks. Section 5 deals with an emotional variable, writing apprehension, a specific type of anxiety. Finally, the last section of the paper addresses how the research literature has assessed writing performance, the dependent variable, examining the writing tasks commonly used in writing research as well as the methods of assessing these tasks.

Writing: "The Neglected 'R'"

The Importance of Writing Skills

Writing is a basic skill required to flourish in school, at work, and as a citizen (Graham & Perin, 2007c). President Vartan Gregorian (2007) of the Carnegie

Corporation of New York states, "the ability to read, comprehend, and write—in other words, to organize information into *knowledge*—can be viewed as tantamount to a survival skill" (p. 2). Students must learn to write clearly and effectively so they can compose reports, take exams, and otherwise express themselves in their classrooms, both online and face to face. Students also need to be able to write to learn so they can refine their personal thoughts, develop key critical thinking skills, and learn essential subject matter (Graham & Perin, 2007c).

Writing is also required in the workplace, where the level of writing skills required for successful employment is now on par with that needed for academic success in college (Graham & Perin, 2007c). The National Commission on Writing for America's Families, Schools, and Colleges, which surveyed 120 human resource directors in companies affiliated with the Business Roundtable and employing almost 8 million people, reported that writing is an essential "threshold skill" (National Commission on Writing, 2004, p. 3) to highly skilled, well paying, professional work. "People who cannot write and communicate clearly will not be hired and are unlikely to last long enough to be considered for promotion," according to one human resources director (p. 3). "Writing ability could be your ticket in…or it could be your ticket out," said another (p. 3). Human resources directors in state governments concur. A survey of the state human resources directors conducted by the National Governors Association for the Commission on Writing revealed that good writing is even more important in state government jobs than it is in the private sector (National Commission on Writing, 2005). Advances in technology will only make writing skills more important (National Commission on Writing, September 2004).

People need writing skills, too, to be active citizens and participate fully in society. People need writing skills to apply for jobs, inquire about insurance benefits, formally complain about inadequate service and contracts that are not fulfilled, voice their preferences to their elected representatives, blog about issues that are important to them, and write letters to the editors of their newspapers. In Gregorian's (2007) view, keeping democracy and our society available to all entails ensuring that all citizens have access to information and knowledge, and thus the power to improve and assert themselves, support their families, thrive, and succeed.

> Those who enrich themselves by learning to read with understanding and write with skill and clarity do so not only for themselves and their families, but for our nation as well. They learn in order to preserve and enhance the record of humanity, to be productive members of a larger community, to be good citizens and good ancestors to those who will follow after them. (Gregorian, 2007, p. 2)

Writing Performance in the United States Is Weak Across Age Groups

Despite the importance of literacy skills, however, writing skills among Americans are poor across age groups and contexts (e.g., Graham & Perin, 2007c). For example, in the 2007 National Assessment of Educational Progress (NAEP), "the Nation's Report Card," only 33% the 8th graders and 24% of the 12th graders met the criteria for writing proficiency; a mere 2% of the 8th graders and 1% of the 12th graders were advanced; and 12% of the 8th graders and 18% of the 12th graders were not able to demonstrate even basic skills (Salahu-Din et al., 2008). Although NAEP writing scores are increasing, gains have been incremental and almost exclusively at the lower and middle levels

(Salahu-Din et al., 2008; see Table 1). With respect to low-level functioning, the percentage of 8th graders having at least basic skills rose from 84% in 1998 to 85% in 2002, and again to 88% in 2007. The percentage of 12th graders with at least basic skills also rose overall. After dropping from 78% in 1998 to 74% in 2002, the percentage of high school seniors with at least basic skills increased to 82% in 2007. As for mid-level writing performance, more 8th graders achieved proficiency in the last decade. The percentage of 8th graders who were at least proficient rose from 27% to 31% between 1998 and 2002, and increased again in 2007 to 33%. The percentage of 12th graders who were at least proficient also increased, but less markedly. In both 2002 and 2004, 24% of the 12th graders were proficient or better, a slight rise over the 22% who attained this level in 1998. By contrast, the percentage of students performing at an advanced level remained relatively flat. The percentage of 8th graders with advanced-level writing increased from 1% in 1998 to 2% in 2002 and remained at that level in 2007, while the percentage of 12th graders performing at an advanced level rose from 1% in 1998 to 2% in 2002 and then dropped back to 1% in 2007 (Salahu-Din et al., 2008). Thus, the writing interventions and initiatives that have been put in place in the last decade seem to have been helpful at the lower and middle levels, but not the advanced level. This is not surprising for two reasons. First, most of the methods teachers use to teach writing are not powerful enough (Graham, 2005). Second, most teachers receive little or no training in how to teach writing (few states require this training for licensure), and most think they are unprepared to teach writing and are anxious about doing so (Coker & Lewis, 2008; Graham, 2005; Kiuhara, Graham, & Hawken, 2009).

Table 1

NAEP Writing Scores, 1998-2007

	At or Above Basic	At or Above Proficient	Advanced
	Grade 8		
1998	84*	27*	1*
2002	85*	31	2
2007	88	33	2
	Grade 12		
1998	78*	22*	1
2002	74*	24	2*
2007	82	24	1

Note: * designates statistically significantly different from 2007
Source: Salahu-Din, D., Perksy, H., & Miller, J. (2008). *The Nation's Report Card: Writing 2007* (NCES 2008-468). Washington, DC: National Center for Education Statistics, U.S. Department of Education.

NAEP writing scores reflect a number of achievement gaps with respect to gender, race/ethnicity, SES, and whether the students were English language learners. Detailed data on these differences are available for 8th graders, but not 12th graders (Salahu-Din et al., 2008) (see Table 2). With respect to gender, both 8th- and 12th-grade females have had higher scores than their male peers since 1998, and this gap shows no sign of decreasing. In 2007, 93% of the 8th grade girls demonstrated at least basic skills as compared to 82% of the boys, and 41% of the 8th grade girls were at least proficient compared to 20% of the boys. By contrast, differences among racial/ethnic groups have grown smaller among 8th graders, with Blacks and Hispanics gaining on Whites and Asian/Pacific Islanders, and Asian/Pacific Islanders improving the most. Among 8th graders, 92% of the Whites as well as the Asian/Pacific Islanders demonstrated at least basic skills as opposed to 80% of the Blacks, 79% of the Hispanics, and 79% of the

Table 2

Demographic Differences in NAEP Writing Scores, 8th Graders, 2007

	At or Above Basic	At or Above Proficient	Advanced
Overall National Scores			
All 8th Graders	87	31	2
Gender			
Male	82	20	1
Female	93	41	3
Race/Ethnicity			
White	92	39	2
Black	80	15	-
Hispanic	79	17	-
Asian/Pacific Islander	92	45	5
American Indian/Alaska Native	79	21	1
SES*			
Eligible	80	17	-
Not Eligible	93	40	3
English Language Learners (ELL)			
ELL	58	5	-
Not ELL	89	32	2

Note: * = As assessed by eligibility for free/reduced-price school lunch

American Indian/Alaska Natives. With respect to the next level, proficiency, 45% of the

Asian/Pacific Islanders were at least proficient as opposed to 39% of the Whites, 21% of

the American Indian/Alaska Natives, 17% of the Hispanics, and 15% of the Blacks.

Among 12th graders, the scores of Whites, Blacks, Hispanics, and Asian/Pacific Islanders

all increased, but the gaps among them remained about the same. Eighth graders who

were eligible for free or reduced-price school lunches had much lower scores than those

who were not eligible, with 80% of the children receiving this benefit demonstrating

basic skills as opposed to 93% of those who were not eligible, and only 17% of the

eligible students attaining proficiency as opposed to 40% of those who were not eligible. For 12th graders, scores were related to the educational attainment of the students' parents. Those whose parents had more formal education scored higher than those who did not. (Comparable data were not reported for 8th graders.) Hillocks (2008), in a discussion of the 1998 NAEP scores, called these achievement gaps "a problem that we ignore at our peril" (p. 327).

The lack of writing skills has become problematic in colleges, universities, and workplaces. In one study, professors complained that 50% of the high school graduates are not prepared for college-level writing assignments, and 62% of these professors said that public schools are not doing an adequate job of teaching students to write. Because of this poor preparation, these professors often find themselves spending inordinate amounts of time teaching skills that their students should have mastered in high school (Achieve, Inc., 2005), and two-year colleges are struggling to find the resources to remediate such large numbers of students (Graham & Perin, 2007c). In the workplace, employers surveyed in one study estimated that 38% of the recent high school graduates lack the writing skills they need to function at work (Achieve, Inc., 2005). One human resources director interviewed by the National Commission on Writing (2004) frankly stated, "The skills of new college graduates are deplorable" (p. 14). These deficiencies in writing skills are forcing businesses and government entities to spend billions annually to train workers in the literacy skills they should have acquired before leaving high school (National Commission on Writing, 2004). In the last few editions of their widely used introductory text on human resource development, Werner and DeSimone (2008) dedicated half of an entire chapter to the development of basic skills including writing—

another reflection of the fact that employers now commonly find it necessary to provide costly basic education for skills their employees formerly learned in school.

Frustrated with this state of affairs, the National Commission on Writing, established by the College Board in 2002, has called writing "the neglected 'R'" of the classic trinity of reading, 'riting, and 'rithmetic with respect to school reform (National Commission on Writing, 2003). This lack of basic literacy creates a national competitive disadvantage in that the literacy skills of high school graduates in the United States are lower than those of graduates in the other industrialized nations (Graham & Perin, 2007c). As a result, the National Commission on Writing (2003) has called on the nation's leaders to "place writing squarely in the center of the school agenda" (p. 26) so American education can "realize its potential as an engine of opportunity and economic growth" (p. 3) by creating "a writing revolution [that] puts language and communication in their proper place in the classroom" (p. 3).

The Need for Research on Writing

Despite this agreement about importance of writing, most research on literacy, which entails both reading and writing, addresses reading only (Coker & Lewis, 2008), and research in writing is only recently beginning to meet the nation's needs for sound and tested approaches to writing research and instruction (Graham & Perin, 2007b). Unlike research in reading, which has been well enough established to support the publication of a series of handbooks of reading research for decades (the first, edited by Pearson, Barr, Kamil, & Mosenthal, was published in 1984), writing researchers published only more limited, book-length reviews of the research literature during this period.

In the early 1960s, the National Council of Teachers of English (NCTE), concerned about how both "the sound and the wild" (Braddock, Lloyd-Jones, & Schoer, 1963, p. 1) approaches to writing instruction were receiving equal coverage in the press, appointed a committee to review what was known about teaching writing. *Research in Composition*, a book by Braddock et al. (commonly known as the Braddock Report), was subsequently published in 1963. The Braddock group was able to find only five studies that involved actual writing as opposed to objective testing about writing and that entailed "research employing 'scientific methods,' like controlled experimentation and textual analysis" (p. 1). Braddock and his colleagues complained that "today's research in composition, taken as a whole, may be compared to chemical research as it emerged from the period of alchemy" (p. 5).

Twenty years later, the National Conference on Research in English commissioned George Hillocks, Jr. to review the research published since the Braddock Report. Hillocks's book-length review was published in 1986, two years after the publication of the first *Handbook of Reading Research* (Pearson et al., 1984). Only in the last few years has writing been independently researched enough to merit the publication of the first handbooks of writing research (Bazerman, 2008; MacArthur et al., 2006; Smagorinsky, 2005). These publications identify a number of strong theoretical lenses for studying writing and developing sound classroom interventions. One of these theoretical lenses is Bandura's social cognitive theory.

Social Cognitive Theory

Albert Bandura's social cognitive theory (Bandura, 1989, 1997, 2001) has offered scholars a valuable conceptual framework through which they have studied writing

achievement as well as difficulties in writing, and developed instructional interventions (Pajares & Valiante, 2006; Schunk, 2003). Bandura's theory includes elements of both the behaviorist and cognitive traditions and weds their dichotomous mechanical and autonomous views of personal agency into an interactive, three-part model involving the person, the environment, and behavior. These elements reciprocally act upon one another so that, for example, individuals are both the producers and products of their environments. However, these three elements do not exert their influences simultaneously, with equal strength, or via a single route (Bandura, 1989).

The environment thus has many aspects, such as social structures that both foster and constrain people's behavior via their psychological processes. "Thus, for example, economic conditions, socioeconomic status, and educational and family structures affect behavior largely through their impact on people's aspirations, sense of efficacy, personal standards, affective states, and other self-regulatory influences, rather than directly" (Bandura, 1989, p. 15). Environmental influences on writing include the nature of writing instruction, the nature and structure of the genres that we value and write, the writing strategies that we have developed and pass down to others, our methods of assessing writing performance, and the rewards that we bestow on good writers as well as the sanctions we impose on weak writers.

The person in Bandura's model is an active agent of experience as opposed to a passive "undergoer" of experience (Bandura, 1989, p. 4). The person, like the environment, is also multifaceted, influenced by his or her cognition, affect, and biology. People influence their behavior via their weighing of options, their appraisals of their own abilities, the choices they make, and the self-regulatory mechanisms they use as they

enact those choices. The person affects the environment, too, in that people create and shape the social structures that both nurture and limit them.

Among the cognitive aspects of the person are self-reflection and beliefs, with none of these beliefs "more central or pervasive" (Bandura, 1989, p. 1175) than self-efficacy, one's "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Self-efficacy is a crucial element in Bandura's social cognitive model in that "People's beliefs in their efficacy thus affect almost everything they do: how they think, motivate themselves, feel, and behave" (Bandura, 1997, p. 19). The greater a person's sense of self-efficacy, the more likely he or she is to address, restructure, and defuse stressful situations (Bandura, 1997). Self-efficacy differs from more general personal beliefs like self-esteem and self-confidence in that it is not an overall personality trait or global self-assessment, but a reflection of an individual's beliefs about his or her ability to perform specific tasks and achieve particular goals in defined contexts. Thus, writing self-efficacy describes a person's self-efficacy for performing various writing tasks with respect to various writing genres in a variety of contexts and for specific audiences.

Self-efficacy beliefs exert their influence on behavior via the courses of action a person attempts, as people tend to engage in tasks for which they think they are competent and feel confident and avoid those for which they do not; the amount of time and effort that people expend on these activities; the extent to which they persevere and are resilient when confronted with obstacles and setbacks; and the amount of anxiety they experience as they perform a task. Four sources of self-efficacy beliefs are commonly cited. The main source is a person's previous successes and failures; the other three are

verbal persuasion from others, the vicarious experiences the person has while observing others, and the feedback from the person's own physiological system, such as sweaty palms or a sour stomach (Bandura, 1997).

Social cognitive theory also discusses beliefs other than self-efficacy beliefs (e.g., outcome expectancy beliefs, people's views of the likely consequences of their actions [Bandura, 1997]). This study will examine yet another type of belief, beliefs about a task or domain of study, in this case writing. In contrast to writing self-efficacy, which is a writer's beliefs *about him- or herself* with respect to his or her ability to write, beliefs about writing relate to the writer's beliefs *about writing*. These beliefs include his or her views about what good writing looks like, the mindsets of effective and ineffective writers, the skills that good writers need, and the actions they take to write well.

The affective aspects of Bandura's model encompass emotions, including anxiety. According to Bandura, "Anxiety involves anticipatory affective arousal that is cognitively labeled as a state of fright" (Bandura, 1997, p. 138). Bandura does not see threat as a "fixed property of situational events….Rather, threat is a relational matter concerning the match between perceived coping capabilities and potentially hurtful aspects of the environment" (Bandura, 1997, p. 140). Self-efficacy helps determine the extent of a person's anxiety about a given task because it affects the extent to which he or she interprets tasks as challenges or threats. People with high self-efficacy approach tasks with calm serenity, while those who are fearful experience anxiety and stress (Bandura, 1997). Self-efficacy affects behavior via emotion as well as cognition in that people with high self-efficacy are more likely to take on stressful problems and make them into

something less threatening, while people with low self-efficacy are more likely to feel anxious and avoid encounters that may be painful (Bandura, 1977).

A classic study by Yerkes and Dodson (1908) gives us additional valuable information on the affects of anxiety on behavior and performance. The Yerkes-Dodson Law maintains that low and moderate amounts of anxiety can improve performance by focusing a person's concentration or motivation. However, levels that exceed the optimal point tend to become debilitating. Thus, the relation between anxiety and performance is curvilinear—a relation often illustrated by an inverted U-shaped curve (Chamberlain & Hale, 2007).

This study will continue the tradition established by scholars such as Pajares (e.g., Pajares & Valiante, 2001) and Bruning (Shell, Colvin, & Bruning, 1995) and examine the effects of a particular type of anxiety, writing apprehension, and its interplay with writing self-efficacy. The next part of this chapter will discuss the research literature on the independent variables investigated in this study: beliefs about writing, writing self-efficacy, and writing apprehension.

Beliefs About Writing

Beliefs about writing have long been mentioned in essays and the research literature, but in passing, often as part of a discussion of writing difficulties such as writer's block. For example, Boice (1982), who coaches junior faculty on their scholarly writing, discussed what may be seen as a mystique about writing. A number of beliefs are embedded in this mystique, including the belief that "writing is a form of magic whose force is lost if we analyze it" (p. 143). Belief in this magic is often coupled with an emphasis on the importance of inspiration in writing (e.g., McLeod, 1987) as well as

exasperation with the maddening fickleness of that inspiration. Frequently embedded in this mystique, too, is the belief that writing is an exceptionally difficult and frustrating task. Boice noted that "even the most successful writers…often emphasize the frustrations more than the rewards…" and wryly added that, "Many writers seem to enjoy recounting their miseries in writing" (p. 143).

The empirical research on beliefs about writing has two streams. One is an extension of research on epistemological beliefs, while the other is rooted in research on writing, literacy, and/or social cognitive theory. The first stream of research is usually described as stemming from William Perry's work with Harvard undergraduates in the 1960s (Schommer-Aikins, 2002). Perry found that when students entered Harvard, they tended to believe that knowledge is certain, simple, and handed down by authorities, but tended to gravitate toward a belief that knowledge is tentative, complex, and derived from observation and reason by the time they graduated.

Schommer-Aikins teased apart the components of Perry's model and added elements from other work to develop a multifaceted model of general epistemological beliefs (Schommer, 1990). Factor analytic work conducted by Schommer and other researchers yielded four- and five-factor solutions, roughly defined as Innate (the ability to learn is innate as opposed to acquired), Simple (knowledge is simple as opposed to complex), Quick (material is learned quickly or not at all), Certain (knowledge is certain rather than tentative), and Authoritative (knowledge is handed down by authorities as opposed to derived from reason) (Schommer-Aikins, 2002). Schommer (1990) found that these beliefs affect academic performance in areas such as reading comprehension, metacomprehension, and how students interpret the facts they learn. She thus calls some

beliefs "self-defeating" (Schommer, 1990, p. 503). Schommer, Crouse, and Rhodes (1992) discussed how epistemological beliefs affect students' confidence in their ability to learn, although they did not explicitly discuss self-efficacy. Researchers working in this area continue to debate whether epistemological beliefs have one or multiple dimensions, how those multiple dimensions are best characterized, whether these beliefs have a developmental component, as Schommer (1990) found, and whether they are context-bound (e.g., Hammer & Elby, 2002).

Some of the studies in this stream of research look at epistemological beliefs within the context of specific domains or recognized school subjects. For example, Buehl, Alexander, and Murphy (2002) studied undergraduates' domain beliefs about history and mathematics and found domain-related differences as the students, for example, believed that learning math requires more effort than learning history. Other researchers have taken a different approach than that of Buehl et al. Unlike the Buehl group, who examined whether there are domain differences with respect to the same epistemic dimensions (i.e., whether the domain takes more effort to learn than other domains and whether the domain is well integrated with other domains), these researchers looked at beliefs unique to given domains. For example, Hammer and Elby (2002) proposed creating a context-bound epistemology comprised of what diSessa calls "phenomenological primitives" or "p-prims," the elements of intuitive physics, such as the notion that *Motion requires force.* Because of their emphasis on context, Hammer and Elby, along with De Corte, Op't Eynde, and Verschaffel (2002), who study epistemological beliefs about math, maintain that the nature of classroom instruction can shape students' epistemological beliefs.

The second stream of empirical research on writing beliefs is rooted in the practice of writing, research on reading and writing, and the traditions of teaching writing. Some of this research is related to educational psychology, while other studies emerged from the fields of rhetoric and writing instruction. Like Hammer and Elby's work (2002), this stream of research also examines beliefs that are domain-specific. The current study is part of this tradition.

This study expands on the current literature in this area by including the perspectives of expert writers and editors. After reviewing the literature on expertise Glaser and Chi (1988) identified seven characteristics of experts working within their domains: (a) Experts excel mainly in their own domains, (b) Experts perceive large, meaningful patterns, (c) Experts work faster than novices, (d) Experts' memories are superior to those of novices, (e) Experts see and represent problems at a deeper level than do novices, (f) Experts spend more time than novices analyzing problems before they begin to solve them, and (g) Experts have strong self-monitoring skills. Of interest in this study are the second and fifth of these characteristics, which indicate that experts see and approach problems differently than do novices. In this study, these differences are represented.

The study of both domain-specific and more general epistemological beliefs raises the possibility that some beliefs may be associated with high levels of performance, while others may be related to weak performance. This study will follow the lead of motivational researchers studying goal theory and refer to beliefs associated with strong performance as "adaptive" and to beliefs related to poor performance as "maladaptive." For example, Dweck and Leggett (1988) refer to adaptive "patterns of cognition, affect,

and behavior" (p. 266), "responses" (p. 256), "performance concerns" (p. 260), and "functionality" (p. 270). This terminology is also used with respect to writing, as, for example, Kellogg and Whiteford (2009) write that expertise entails the ability to "respond adaptively" (p. 251) and Pajares and Valiante (2006) write of "maladaptive academic behaviors" (p. 168) related to writing. Alternative terminology used to express these notions include Palmquist and Young's (1992) comment that some beliefs about writing may be "educationally damaging" (p. 160), Schommer's (1990) labeling of some epistemological beliefs as "self-defeating" (p. 503), and Stathopoulou and Vosniadou's (2007) discussion of physics-related epistemological beliefs in terms of their "sophistication" (p. 255).

Writing: An Innate Gift or a Learned Skill?

The first empirical study of beliefs about writing addressed the notion that writing is a special, innate gift that one either has or lacks (Charney et al., 1995; Palmquist & Young, 1992). Beliefs about innate skills, intelligence, and giftedness are also discussed in the epistemological literature (e.g., Schommer, 1990), although Hofer and Pintrich (1997) recommended that this discussion be relegated to the literature on intelligence. However, the belief in innate ability seems to be more strongly associated with writing and a few other fields associated with the arts and sciences more than it is linked with, say, the social sciences. Anecdotally, it seems that people are more likely to say that they just cannot write, do math, sing, or dance, than they are to say that they just cannot learn geography, political science, or psychology. For this reason, and because the literature on beliefs about writing is sparse, a discussion of this belief is included here.

Palmquist and Young (1992) associated the belief in the innateness of writing ability to the Romantic notion of original genius, the idea that talents and aptitudes come from nature and thus cannot be acquired by other means, including teaching, coaching, practice, or study. The belief in the innateness of writing skills thus seems to be related to the mystique Boice (1982) discussed, with its view of writing as a "special" (p. 143) ability and the aversion of writers with this belief to analyze their writing practice lest the almost magical aura surrounding it and their source of inspiration be disturbed.

Palmquist and Young (1992) explored the relations between 247 undergraduates' beliefs about whether writing is an innate gift and their writing apprehension, their assessments of their own writing skills, their confidence in their ability to master writing skills and genres, and their previous experiences with writing teachers. The authors gave these undergraduates paper-and-pencil questionnaires assessing these variables, including a short, five-item version of Daly and Miller's Writing Apprehension Scale (1975b), which will be discussed in more detail later in this chapter, and a measure of the students' confidence in their ability to become proficient writers. This latter measure consisted of a list of 15 writing activities or skills (mostly substantive [related to broad, overall characteristics of writing such as organization and clarity] as opposed to mechanical [related to surface-level issues such as grammar and usage]) as well as 22 genres. The students checked the items for which they thought they could achieve proficiency "given enough time, hard work, and desire" (p. 164). This confidence measure thus provided a measure of the students' writing self-efficacy, although the checklist format is less sensitive than Bandura prefers (Pajares et al., 2001).

Palmquist and Young's (1992) linear regression analysis indicated that students

who believed that writing skills are an innate gift had higher writing apprehension (R^2 =

0.14) and lower assessments of their own writing ability (R^2 = 0.09). Particularly

vulnerable were students who rated their writing skills more than one standard deviation

lower than did their classmates. Students in this group were even more likely to

experience writing apprehension if they believed that writing is an innate gift (R^2 = 0.21).

On the other hand, no relation was found between the belief that writing skills are innate

and writing apprehension for students who assessed their writing skills more favorably.

The authors concluded that this association between the belief that writing skills are

innate and writing apprehension suggests that "the belief itself may contribute to these

students' apprehension about writing" (p. 151). The authors also found an association

between the belief that writing skills are an innate gift and writing self-efficacy. Students

who believed that writing skills are innate tended to be less confident in their potential to

become proficient writers (R^2 = 0.04). These students also described their experiences

with their previous writing teachers less favorably (R^2 = 0.10). No gender differences

were reported.

Because this study was not experimental, the authors were not able to speculate

about causality, that is whether (a) the belief in the innateness of writing skills led to

writing apprehension, low writing self-efficacy, and perceptions of poor writing

performance or (b) writing apprehension, low writing self-efficacy, and low assessments

of one's writing performance fostered a belief in the innateness of writing skills. The first

possibility is that beliefs can be maladaptive and lead to apprehension, low self-efficacy,

and poor performance. Such a scenario is plausible in that believing in the innateness of

writing skills could easily lead students to conclude that these skills cannot be learned or developed through practice, making all efforts to this end futile. Embracing such a line of thought might easily lead to apprehension, frustration, and learned helplessness. The second possibility is that it is poor writing performance and writing apprehension that lead to a belief in the innateness of writing skills. This is also tenable in that those who continually fail at writing tasks need a way to save face and maintain their self-esteem. A belief in the innateness of writing skills could serve as a much-needed excuse for poor performance and a defense against negative affect.

The authors concluded that "the belief in giftedness may have deleterious effects on student writers" (Palmquist & Young [1992], p. 162), particularly in courses requiring writing. They also noted that this belief could trigger self-imposed limitations with respect to courses of study and careers that entail writing. They urged writing teachers to become aware of this belief and attempt to combat it and its negative effects directly.

In the Palmquist group's second paper, "I'm Just No Good at Writing," Charney et al. (1995) extended the initial study to investigate how beliefs about the innateness of writing ability, student assessments of their own writing, and writing apprehension related to writing performance among 446 undergraduates. No measure of writing self-efficacy was included. As in the first study, undergraduates who believed that writing can be learned tended to enjoy writing more than did students who saw writing skills as an innate gift that one either has or lacks ($r = 0.23$) and to rate their own writing more favorably ($r = 0.17$), although they did not necessarily receive higher grades on their written assignments. Students who enjoyed writing more were also more likely to classify themselves as good writers ($r = 0.58$), as they also did in the first study ($r = 0.57$). The

women in this study were more likely to think writing skills can be learned, enjoyed

writing more, and received higher grades in writing classes than did the men.

Beliefs About the Importance of Audience

Another belief concerns the importance of audience. Expert editors, such as those

working with established editorial firms like EEI (formerly Editorial Experts, Inc.) in the

Washington, DC, area, have standard practices for approaching writing assignments. One

of these practices involves conducting a purpose and audience analysis before beginning

a writing project. For example, one of EEI's publications (Molpus, 1990) provides a list

of questions writers should answer before they begin a new assignment. In the first three

questions, which follow, the issues of purpose and audience are raised immediately:

1. What will the final product be? A book, a speech, a brochure, a handbook, a
   script?

2. Who is the primary audience? The general public, interested organizations,
   experts in the field?

3. What purpose will the document serve? What will the audience use it for? Why is
   it needed? (p. 6)

Dumaine (1989) similarly raises the issues of purpose and audience at the

beginning of her six-step approach to reader-centered writing. During Step One, Analyze

Your Purpose and Your Audience, Dumaine coaches writers to determine their purpose

in terms of what they are trying to do (e.g., inform, persuade, analyze, recommend) and

what information they want to be sure the reader understands and remembers. During the

audience analysis, our concern here, the writer determines how many types of readers

will use the document, what these readers will want or need to do with the information

they learn (e.g., master a concept or new technique, plan a lesson, repair malfunctioning equipment), what the readers already know about the subject matter, whether the readers need background information or visual aids to understand the material, and whether the readers are predisposed to react favorably or unfavorably to what the writer is planning to convey, among other questions.

The audience analysis is thus a key element of the planning process in that it drives the entire approach to the project, including the format that is taken, the information that is included, and the language and graphics that are used (e.g., Anderson, 1995: Dumaine, 1989; Molpus, 1990). Experts' emphasis on readers is so strong that Barnum and Carliner (1993) include the reader in their basic definition of technical writing—"the process of translating what an expert knows for an audience with a need to know" (p. 3). Similarly, many editors define their job in terms of the readers, seeing themselves as readers' advocates who "search for words phrases, and stylistic techniques that allow readers to understand exactly, not partially, what the author intended" (Scroggins, 1990, p. 19). In fact, some professionals see their focus on the reader as one of the main characteristics distinguishing them from writers lacking expertise. In an article on how to edit the work of specialists, for example, Molpus (1990) argues that specialists need editors because in focusing on facts and the development of their fields, they are often unaware of the readers' needs. "Specialists are frequently concerned not with enlightening the reader but with 'advancing scholarship' or promoting a point of view…The editor must protect the reader from specialists' insensitivities or blind spots" (p. 45), she writes. Barnum and Carliner (1993) and Reep (1994) have a similar emphasis on purpose and audience in their books on technical writing.

The National Commission on Writing (2005) confirmed the importance of audience in workplace writing. "The biggest thing is keeping aware of who your audience is, who the reader is, and conveying your content in a way that the recipient can easily understand and use. That's the biggest part of what we look for," one state government human resources director said (p. 20).

There is some research that points to the importance of audience. Nelson (2008), for example, states that writers compose differently for different types of audiences, with accomplished writers seeming to "read" (p. 442) their audiences and adapt their messages to the audiences they construct. Nelson also notes evidence of developmental differences between younger and older students in their ability to adapt their writing to their audience. Beach and Friedrich (2006), and Miller and Charney (2008) discuss how writers adjust the presentation, content, and tone of their arguments in response to the audience, its level of sophistication (e.g., younger or older), its presumed level of agreement with the writer, and whether it is part of the writers' usual discourse community (e.g., fellow academicians). In a more fine-grained analysis, Beaufort (2008) notes how workplace writers adjust their tone, level of clarity, use of active versus passive voice, and word choices depending on whether the person they are writing to is more or less powerful than they are. With respect to teaching practice, writing teachers have emphasized rhetoric, the study of how to influence and persuade readers, since the time of Aristotle (Miller & Charney, 2008).

Nevertheless, audience has not been a key concern in academic writing. As Coker and Lewis (2008) explain, much of the writing that students do in school is inauthentic and lacks both a real purpose and a real audience. "The student addresses a fictionalized

audience because there is no conceivable audience for such writing in reality," they explain (p. 244). As the lack of alignment between school and workplace writing becomes more well known, researchers (e.g., Coker & Lewis, 2008; Graham & Perin, 2007c; Hillocks, 2008) and practitioners (e.g., National Council of Teachers of English, 2008) alike are beginning to urge schools to train students to develop a strong sense of audience and the ability to write for varied audiences so they can develop the skills they will need in the workplace. Until these recommendations become part of writing curricula, however, audience will likely remain crucial in the workplace, but unimportant in schools.

The Role of Mechanical and Substantive Writing Skills: Are Mechanical Skills "Basic"?

Many writing researchers, teachers, and expert writers and editors distinguish between mechanical as opposed to substantive writing skills (e.g., Boston, 1986; Graham et al., 1993). Mechanical skills address fine-grained issues of grammar, spelling, punctuation, and style (e.g., American Psychological Association, 2001; University of Chicago Press, 2003), while substantive skills deal with overall concerns such as organization, development, clarity, and cohesion. Mechanical skills are thus surface level and local, while substantive skills are more structural and global. Mechanical issues are more rule-based, while substantive issues require judgment.

Rankin and her colleagues articulated two common beliefs about substantive versus mechanical skills in two studies of beliefs about spelling (Rankin, Bruning, Timme, & Katkanant, 1993; Rankin, Bruning & Timme, 1994). The Rankin group described one of these beliefs as the "traditional" and "bottom-up" view (Rankin et al., 1993, p. 155) that spelling is a "foundational subskill upon which the higher-order

processes of writing must be grounded" (p. 156). This belief often manifests in a pedagogy of drilling "basics" such as spelling, grammar, and punctuation until students master them.

The belief in the primacy of grammar dates back to the Middle Ages, when knowledge of grammar marked one as a member of the learned class and was seen as a means to discipline both the mind and the soul (Hillocks, 2008). The alternate approach maintains that spelling skills are secondary to the task of making meaning with language. According to this view, substantive issues, whether they be general concerns, such as the clarity and quality of an argument, or genre-specific concerns, should be the central focus, rather than punctuation and grammar. Those espousing this alternate view might see the "basics" of, say, story writing as including plot and character development as opposed to punctuation and spelling. Teachers who hold this view often prefer to teach spelling within the context of actual writing and sometimes allow, and even encourage, young students to use invented spellings temporarily. In their second paper (Rankin et al., 1994), the Rankin group elaborated on this second approach, according to which teachers lay out a process whereby "students are encouraged to 'get out their thoughts' in the early stages of writing and to focus on form and mechanics during the editing phase" (p. 229). This approach is more in line with expert practice (Boston, 1986).

These two views of writing mechanics have long been debated in the research literature, with the research results consistently challenging the traditional, bottom-up, philosophy that maintains that writing mechanics are foundational to good writing. In 1963 Braddock et al. wrote *Research in Written Composition*, also called the Braddock Report, a landmark, book-length review of the existing writing research literature

published by the National Council of Teachers of English. In this review, the Braddock

group came to the following strong and unequivocal conclusion:

> …in view of the widespread agreement of research studies based upon
>
> many types of students and teachers, the conclusion can be stated in strong
>
> and unqualified terms: the teaching of formal grammar has a negligible or,
>
> because it usually displaces some instruction and practice in actual
>
> composition, even a harmful effect on the improvement of writing (pp. 37-
>
> 38).

In the mid-1980s the National Conference on Research in English (NCRE)

commissioned George Hillocks, Jr. to conduct a similar review of the research on writing

published in the two decades since the Braddock Report. *Research on Written*

Composition: New Directions for Teaching, a second book-length, landmark study, was

published in 1986 by NCRE and the ERIC Clearinghouse on Reading and

Communications Skills. In this meta-analysis, Hillocks found that grammar instruction

had a statistically significant, *negative* effect on student writing (effect size = -0.29).

Hillocks firmly underscored the Braddock group's conclusion, stating, "None of the

studies reviewed for the present report provides any support for teaching grammar as a

means of improving composition skills (p. 138)." In fact, he continued, "The teaching of

grammar and mechanics has had, at best, mixed results even for teaching correctness" (p.

141).

Another two decades later, Graham and Perin (2007a) conducted a third study of

the research on teaching writing, a meta-analysis of the experimental and quasi-

experimental research on writing instruction involving adolescents (students in grades 4

through 12). This review included the literature cited in the Hillocks report as well as research literature published since that time. After analyzing the results of 11 studies of the explicit teaching of grammar (e.g., parts of speech, the structure of sentences) to students with the full range of abilities, Graham and Perin confirmed the findings of the Braddock group (1963) and Hillocks (1986) that these interventions were not only unhelpful, but negative (effect size = -0.32). The effect size was also negative for studies involving only low-achieving writers. Similarly, in a meta-analysis of single subject design research, Rogers and Graham (2008) found that four studies of interventions involving the explicit instruction of grammar and usage to young, struggling writers in the 2nd, 5th, and 6th grades had a negative effect on students' overall writing quality, although in this case it did have a positive effect on the students' grammar skills. Graham and Perin (2007b) concluded,

> One thing that does appear to be certain is that there is little support for continuing with traditional school grammar programs (commercial or otherwise), as time spent on this type of instruction does not enhance the quality of students' writing (p. 329).

Finally, a review of studies examining the teaching of grammar in English-speaking countries examined 17 studies of the explicit, decontextualized teaching of grammar to 5- to 16-years olds (Andrews, Torgerson, Beverton, Freeman, Locke, Low, Robinson, & Zhu, 2006). This study, too, found no evidence that this type of instruction improves either the quality or correctness of their writing. The authors noted, "there has been no clear evidence in the last hundred years or more that such interventions are helpful" (p. 52). (Both Andrews et al. and Graham and Perin (2007a), did, however, note

that other techniques of teaching grammar and correctness are effective. These include instruction in sentence combining and teaching grammar within the context of writing.)

Anecdotal evidence indicates that focusing on mechanics may cause apprehension about writing. In the introduction to their chapter called, "'I guess I'd better watch my English': Grammars and the teaching of the English language arts," Smith, Cheville, and Hillocks (2006) recalled the trepidation of casual acquaintances, such as seat mates on planes, and their hesitation to speak freely when the authors told them they were English professors. As an editor, I have had many similar experiences, where even college professors have told me, "Oh, you're an editor. I can't talk to you. I may split an infinitive." Research is needed to investigate the possibility that focusing on grammar and mechanics promotes writing apprehension.

The practices of expert writers and editors support the results of these four landmark reviews and also contradict the traditional "basics" approach. Expert editors, such as those working for editorial firms like EEI, have standard practices for approaching writing assignments. When revising and editing, professionals tend to take a two-pronged approach, dividing their work into two broad segments, substantive editing and mechanical editing, which they address separately (Boston, 1986; Taylor, 1990). Substantive editing takes an overall, macro view of a document and addresses major concerns involving logic, content, and presentation. Substantive issues include clarity, cohesion, accuracy; organization, tone, alignment with the document's purpose and audience, transitions, and summaries.

Copyediting, by contrast, involves a detailed, micro view and focuses on rules and mechanical issues such as spelling, grammar, usage, punctuation, adherence to a

prescribed style (e.g., American Psychological Association, 2001), and the completeness, correctness, and format of tables, bibliographies, footnotes, and references. Substantive editors rewrite, reorganize, add transitions and summaries, eliminate wordiness, and ensure an appropriate tone. Copyeditors, also called line editors because their work involves carefully going through a document line by line, fix errors in spelling, punctuation, consistency, and style (Taylor, 1990). Substantive editing and copyediting vary not only in the nature of the activities they encompass, but also in the timing of when they are performed and the people who carry out these tasks (Boston, 1986). Substantive editing precedes copyediting because it would be a waste of time and money to go over a manuscript line by line only to reconceive, reorganize, and rewrite it later— and then copyedit it once again or, worse, run out of time to do so. Substantive editors have been senior to and paid more than copyeditors in the editorial shops in which I have worked.

Factor analysis research supports the expert notion that substantive and mechanical skills are independent of one another. Pajares and Valiante (1999) developed a writing self-efficacy scale which included skills identified by teachers as important. Pajares et al. (2001) factor analyzed the scale and found that it was comprised of two orthogonal factors, one representing substantive skills and the other mechanical skills. (They named the substantive factor "advanced composition skills" and the mechanical factor "basic grammatical and usage skills" [p. 217].)

Distinguishing between substantive and mechanical skills has face validity as well as practical value for teachers, as can be seen by considering the following example. If a teacher were to give students two scores on their papers, one for their substantive skills

and one for their mechanical skills, and then sum those two scores, two students with very different papers could receive identical grades that would make them appear to be the same. The work of first student, an individual with strong substantive skills and weak mechanical skills, would contain well developed, coherent, and compelling arguments expressed with typos, misspellings, and grammatical errors; that of the second student, who has the opposite profile, weak substantive skills and strong mechanical skills, would be mechanically flawless but lacking in content, accuracy, development, and organization. Summing the substantive and mechanical scores would thus mask the differences between these students and would not be helpful in terms of diagnostics or assessment, or in the development of appropriate writing instruction.

The differences between these two types of writers—and the importance of this distinction—can be seen more clearly by thinking of them as employees in a workplace. There, the first employee, the writer with strong substantive skills and weak mechanical skills, would prepare well reasoned and documented reports that would be fraught with mechanical errors. The second employee, the writer with weak substantive skills and strong mechanical skills, would draft mechanically sound reports lacking necessary analysis, documentation, and support for key contentions and conclusions. A manager would likely find the first employee much more valuable than the second employee because the first report could be repaired by an editor whose salary would be moderate, while the second report would be essentially irreparable and require much more work—another analysis and a rewrite—by a much more highly skilled and better paid technical writer or by an even more rare and even more highly paid subject-matter expert with

writing skills. Thus, compensating for the shortcomings of the second writer would be more problematic and expensive than making up for the inadequacies of the first.

In 1993, Graham et al. distinguished between substantive and mechanical issues in their study of how students' beliefs about writing influence what and how the students write. Graham et al. conducted open-ended interviews with 4th, 5th, 7th, and 8th graders, including students who did and who did not have learning disabilities. They asked the children about their knowledge and beliefs with respect to what good writing looks like, what good writers do, why some kids have trouble writing, and how they would write a paper for a younger child. They also asked the children to apply their knowledge and beliefs about writing by commenting on a text written by another child. They sorted the children's answers into categories that included substantive, process, mechanical, and production issues. Substantive issues included organization, word usage, and appropriateness for the audience (in this case, a younger child), and processes included planning, drafting, and revising. Mechanical factors entailed grammar, punctuation, and spelling, and production factors included handwriting, neatness, and sitting up straight while writing.

The older students and the normally achieving students, who were the better writers, were more likely to emphasize substantive as opposed to mechanical issues in their definitions of good writing. These same students stressed writing processes over production factors in their accounts of what good writers do and how they would go about various writing tasks. Graham et al. (1993) concluded that, "The knowledge, attitudes, and beliefs that students hold about writing play an important part in determining how the composing process is carried out and what the eventual shape of the

written product will be" (p. 246). In their discussion of the results, they raised the

possibility that students' beliefs about writing may be shaped by the type of writing

instruction they receive and noted that special education teachers often place undue

emphasis on the development of mechanical skills.

Despite Braddock et al.'s (1963), Hillocks's (1986), Graham and Perin's (2007c),

and Andrews et al.'s (2006) strongly worded, research-based counsel; expert practice;

and the findings of Graham et al. (1993), the emphasis on grammar and mechanics, as

well as the view that they are foundational to substantive writing skills, persists. Hillocks

addressed the persistence of this belief more than 20 years ago when he wrote, "Many

teachers still contend that knowledge of traditional school grammar is crucial to good

writing" (1986, p. 133), and noted that teachers often pay undue attention to mechanical

issues:

> A number of studies have shown that when English teachers who have not
>
> been trained as raters are asked to rate compositions…, they tend to focus
>
> their attention and base their ratings on 'correctness' rather than on
>
> content, logic, and other features of writing (p. 133).

Smith et al. (2006) as well as Shermis, Burstein, and Leacock (2006) confirm that the

tendency of reviewers to undervalue papers with mechanical errors remains strong.

Laypeople also seem to focus unduly on mechanical skills and seem to equate the

presence of mechanical errors with a lack of basic training and education, as did a

Floridian who wrote to the *Miami Herald*, indignant that a teacher had sent home a flyer

with a typo (Radcliffe, 2008).

Writing researchers, too, seem to adhere to the notion that mechanical issues are basic and foundational to substantive skills, rather than orthogonal. For example, many of the seminal papers on writing self-efficacy reflect this view. These papers will be discussed in detail later in the self-efficacy section of this chapter. Here, however, it is important to note that the view of mechanics as foundational basics is reflected in the writing self-efficacy scales developed for these key papers. For example, the scale Shell et al. developed for their 1989 seminal study of writing self-efficacy is weighted toward mechanics in that six of the eight skills for which the participants rate their self-efficacy are mechanical as opposed to substantive. This is particularly significant because many subsequent researchers used this scale, or variations of it, in their studies (Pajares & Johnson, 1994; Pajares & Johnson, 1996; Pajares & Valiante, 1997; Rankin et al., 1993; and Shell et al., 1995). The McCarthy-Meier group (Meier et al., 1984; McCarthy, Meier, & Rinderer, 1985), who published the first two papers on writing self-efficacy, did not publish their 19-item Self-Assessment of Writing Skills Questionnaire, which is no longer available (S. T. Meier, personal communication, January 15, 2008). However, they did write that they, too, emphasized mechanical issues in their writing self-efficacy scale and did so intentionally:

> Because a large number of the students in the study were basic writing
> students, the self-assessment instrument and the rater's criteria were
> devised to measure the most mechanical and perhaps most easily
> measurable of writing skills (1985, p. 468).

This statement clearly reflects the notion that students with basic (i.e., low level) skills should focus on mechanics, not substantive issues or a combination of the two as Graham et al. (1993) recommend for special education students.

In summary, experts and some researchers characterize mechanical skills as more basic than substantive skills because they are more rule-bound and require less judgment than substantive skills; however, both empirical research and expert practice indicate that substantive and mechanical writing skills are orthogonal or independent of one another. Thus, although mechanical skills are more *basic than* substantive skills, they are not *basic to* (foundational to) substantive skills. Neither undergirds or serves as the foundation for the other. This means that students must receive instruction in *both* sets of skills; that drilling students in one set of skills will not lead to proficiency in the other; and that one set of skills does not necessarily have to be mastered before one can begin to learn the other. As Hillocks (1986) made clear, years of drilling students in correct grammar does not help them select appropriate topics, develop their ideas, or become clear to their readers. The publication of *Writing Next* may have helped turn the tide of opinion on this issue. In 2008, the National Council of Teachers of English issued a policy brief in which they classified the belief that grammar drills are the most effective way to improve student writing as a myth. They also urged teachers to use a context-based, functional approach to teach grammar, rather than decontextualized, explicit instruction.

Nevertheless, the belief that writing mechanics form the foundation for substantive skills and thus must be learned before substantive skills remains strong despite more than a century of empirical research (Andrews et al., 2006; Smith et al.,

2006), strong statements by leading scholars and expert teachers, as well as expert practice urging otherwise. Perhaps this notion is so tenacious because of its long-established roots stretching back to the Middle Ages (Hillocks, 2008) or its alignment with a belief in dividing tasks into simple segments and training students on these basics until mastery and before much training in advanced skills occurs.

This belief is maladaptive in that those who teach mechanical skills to mastery before providing instruction in substantive skills are teaching only some of the skills students need to become proficient writers, while neglecting the others. This belief and the resulting practice of teaching basic (mechanical) but not advanced (substantive) writing skills may help explain why NAEP writing scores are increasing at the low and mid-levels, but not at the advanced level. Unfortunately and ironically, this hierarchical approach to teaching writing seems to be used more frequently with struggling writers (Graham et al., 1993) and may actually be preventing them from breaking through to writing proficiency.

Transmissional and Transactional Beliefs About Writing

White and Bruning (2005) explored two types of implicit beliefs about writing, positing that these beliefs influence a writer's level of engagement with writing tasks. The authors based their study on earlier work by Schraw and Bruning (1996, 1999), which examined implicit beliefs about reading, specifically transmissional and transactional beliefs. Transmissional beliefs hold that reading is a means by which readers receive information from authoritative sources, while transactional beliefs maintain that reading allows readers to construct knowledge by reflecting critically on what they read in light of their prior knowledge and experiences, and by integrating what

they learn from text into their existing knowledge base. Schraw and Bruning found these transmissional and transactional reading beliefs to be statistically independent of one another. Readers whose beliefs were predominantly transmissional had lower levels of cognitive and affective engagement with the text and did not comprehend what they had read as well as readers whose beliefs were predominantly transactional.

White and Bruning (2005) applied this model to writing. They defined writers with high transmissional beliefs as those who see writing primarily as a means of transmitting authoritative knowledge to readers with minimal injection of the writers' own views and thoughts. By contrast, they saw writers with high transactional beliefs as those who think writing is a means of integrating what they learn about a topic with their prior knowledge or applying what they learn from authorities to issues of personal importance.

The authors developed the Writing Beliefs Inventory to measure these transmissional and transactional beliefs. The final version consists of 14 genre-neutral items that explore transmissional and transactional beliefs about writing on a five-point, Likert-type scale. The authors also provided an additional five items that researchers can use to strengthen the transactional factor. Transmissional items include "Writing's main purpose is to give other people information" and "Writing should focus around the information in books and articles." Transactional items include "Writing helps me understand better what I'm thinking about" and "It's important to develop a distinctive writing style." The Cronbach's α assessing internal consistency was 0.73 for the entire scale, 0.72 for the transmissional items, and 0.76 for the transactional items. The

transmissional and transactional beliefs were independent of one another and could be held simultaneously.

White and Bruning used the Inventory to examine the relations among 170 undergraduates' beliefs about writing, writing self-efficacy, writing apprehension, past writing experiences, and writing performance. The measures used were the Writing Beliefs Inventory, the writing self-efficacy scale developed by Shell et al. (1989), Daly and Miller's (1975b) Writing Apprehension Test, and a 17-item inventory the authors developed for this study to assess the students' previous writing experience. They then asked the students to read a narrative passage and write an essay about it. Two raters graded the papers with respect to six traits that were primarily substantive: development, voice, word choice, sentence fluency, organization, and writing conventions.

These six component scores were analyzed separately and also summed to create an overall writing score. The authors hypothesized that text produced by writers with strong transmissional beliefs would lack development, voice, and sentence fluency, and receive lower overall scores.

The results showed that beliefs about writing were related to writing performance. Those with high transmissional beliefs had statistically significantly lower writing scores overall ($\eta^2 = 0.13$) and with respect to four of the six characteristics of writing examined: development ($\eta^2 = .10$), voice ($\eta^2 = 0.10$), organization ($\eta^2 = 0.12$), and conventions ($\eta^2 = 0.11$). By contrast, those with high transactional beliefs had higher writing scores overall ($\eta^2 = 0.11$) and with respect to two of the writing characteristics: organization ($\eta^2 = 0.12$) and sentence fluency ($\eta^2 = .12$). Students with high transmissional beliefs also had less affective and cognitive engagement with writing and were less likely to write for

pleasure. On the other hand, students with high transactional scores spent more time writing and were more likely to find writing pleasurable. This latter finding is interesting in that those who like writing more would likely spend more time writing, which would, in turn, make them better writers. The correlation between these two types of beliefs was statistically significant at 0.35. There was no interaction between them.

As for the variables of interest in this study, transmissional beliefs were not statistically significantly related to either writing self-efficacy or writing apprehension. Transactional beliefs were statistically significantly related to writing self-efficacy ($r = 0.20$), but not writing apprehension ($r = 0.13$).

In summary, White and Bruning (2005) found that transmissional beliefs were maladaptive with respect to writing quality, while transactional beliefs were adaptive. They raised the possibility that writers with strong transmissional beliefs may approach writing in a way that discourages the integration of new information with their personal views, while those with strong transactional beliefs may see writing as an opportunity to integrate and synthesize their thoughts, and apply what they learn to issues that are important to them. It is unclear from this study whether beliefs about writing guide the development of writing ability or whether writing ability shapes beliefs about writing, or whether this relation is bidirectional. The authors suggested that teachers consider students' beliefs about writing and that researchers develop broader, more complex models of writing beliefs that reflect the role that cognitive processes, such as working memory, topic interest, and previous writing experience, may play in the development of beliefs about writing.

It is noteworthy that White and Bruning's Writing Beliefs Inventory (2005) is grounded in the research in reading rather than the research on writing or expert writing and editing practice. Transactional as opposed transmissional orientations are discussed in the literature on reading (e.g., Guthrie's body of work on reading engagement addresses these issues [e.g., Guthrie & Wigfield, 2000]), but these concepts are not a central issue in the research literature on writing or expert writing and editorial practice. Writers with transmissional beliefs focus on authorities and facts they find in outside sources, while those with transactional beliefs concentrate on themselves and their own views, prior knowledge, and experiences. Expert writers, as discussed in the section on audience above, focus on neither of those two areas, but on the purpose the document is intended to serve and on the readers and their interests, needs, and issues.

<p align="center">*Silva and Nicholls's Model of Beliefs*</p>

In 1993, Silva and Nicholls published the first empirical study of beliefs about writing that studied multiple beliefs tapping various dimensions of writing. Silva and Nicholls grounded their scale in six traditions of discourse theory: (a) the romantic, expressionistic tradition with its emphasis on aesthetics, personal involvement, and emotion; (b) an approach that sees writing as a learning activity that enhances understanding and the development of critical thinking; (c) an method emphasizing mechanical correctness, surface-level conventions, and organization, (d) a collaborative approach; (e) the cognitive method, with its focus on strategies, the writing process, and cognitive science; and (f) an approach stressing the importance of following traditional authorities and models of good writing. Silva and Nicholls organized the beliefs and goals they gleaned from these traditions into two scales: Writing Goals, which has 45

items, all beginning with the stem "I feel most successful when…," (e.g., "my writing has a certain flair" and "I sense the reader(s) will find my writing interesting") and Beliefs about the Causes of Success in Writing, which has 55 items, all beginning with the stem "To write well people must…" (e.g., "like working with words" and "relate what they write to their own values"). The scales were genre-neutral and thus applied to all types of writing. The authors also administered an Intrinsic Commitment to Writing scale, a Dualism scale (based on Perry's work on epistemological beliefs, particularly the belief that there are right and wrong ways to do things as well as the idea that authorities have the correct answers and approaches to problems), and a four-item Perceived Ability scale.

After administering the scale to 653 first-year college students, Silva and Nicholls (1993) conducted a principal components analysis (PCA) of the beliefs scale, which yielded eleven factors (appreciate poetic expression, express personal meaning, develop one's aesthetic stance, enjoy working with words, focus on the reader, collaborate, adopt a flexible approach, use methodological strategies, follow traditional authority, work hard, and emphasize surface-level conventions). A PCA of the goals scale yielded seven factors (poetic expression, enhanced personal meaning, effective communication, enhanced subject matter knowledge, improved reasoning ability, systematic organization, and surface-level conventions).

The second-order PCA of all 18 of these factors produced four final factors: (a) Poetic Quality and Individual Taste, which reflects the notion that writing is an aesthetic activity that involves the poetic expression of personal meaning, the development of an aesthetic stance, and an enjoyment in working with words; (b) Intellectual and Personal Growth, which emphasizes an iterative approach to writing that develops understanding,

critical thinking skills, and subject-matter knowledge; (c) Method and Hard Work, which is comprised of beliefs only and focuses on writing strategies, focusing on the reader, collaborating with others, and working hard to follow methodological practices and prescriptive rules; and (d) Surface Correctness and Form, which emphasizes the mastery of mechanical rules and writing conventions. The Poetic Quality and Individual Taste factor seems related to the romantic approach mentioned by Boice (1982) and the Palmquist group (Charney et al., 1995; Palmquist & Young, 1992), but it is not coupled here with a belief that writing ability is solely or predominantly innate. The Surface Correctness and Form factor seems related to writing mechanics and the view of them as fundamental basics that was delineated by Rankin et al. (1993).

The first two factors, Poetic Quality and Individual Taste, and Intellectual and Personal Growth, were more highly correlated with the students' perceptions of their own writing ability ($r = 0.18$ for both factors) and their commitment to writing ($r = 0.30$ and 0.19, respectively), and less highly correlated with a dualistic view of writing ($r = 0.15$ and 0.14, respectively) than were the last two factors. The last two factors, Method and Hard Work, and Surface Correctness and Form, were unrelated to the students' perceptions of their writing ability ($r = $ -0.08 and 0.00, respectively) and commitment to writing ($r = 0.08$ and -0.03, respectively), but were associated with a dualistic view of writing ($r = 0.40$ and 0.27, respectively). Thus, students whose beliefs about writing focused on Surface Correctness and Form liked writing less than did students whose writing beliefs stressed substantive issues.

Silva and Nicholls (1997) suggested that students' goals and beliefs may reflect the pedagogical approaches of their writing teachers. (This is not surprising because the

items in the scales were based on pedagogical approaches.) In other words, beliefs about writing may reflect the students' classroom cultures. Looking at these findings through the lens of Bandura's model, we can see the environment (the classroom cultures and their underlying philosophies and pedagogies) affecting the person (the students' beliefs about writing).

Lavelle's Model

Ellen Lavelle has published a number of studies (e.g., Lavelle, 1993, 2001, 2003, Lavelle & Guarino, 2003, Lavelle, Smith, & O'Ryan, 2002, Lavelle & Zuercher, 2001) about students' approaches to writing, a broad construct that includes beliefs about writing, self-efficacy for writing, writing goals, and writing strategies. She began her work by developing a questionnaire, the Inventory of Processes in College Composition (IPCC, 1993), which asks about a wide range of issues with respect to writing. These include one's emotional investments in and reactions to one's writing (e.g., "I put a lot of myself in my writing"), writing goals (e.g., "It's important for me to like what I've written"), writing self-efficacy (e.g., "I do well on essay tests"), writing strategies (e.g., "I start with a fairly detailed outline"), one's flexibility as a writer (e.g., "I re-examine and restate my thoughts in revision"), one's relationship with one's audience (e.g., "I am my own audience"), and the extent to which one is metacognitive as one writes (e.g., "I can't revise my own writing because I can't see my own mistakes").

A factor analysis of the IPCC (Lavelle, 1993) yielded five distinct writing approaches among college students. The Elaborationist approach is characterized by considerable personal and emotional involvement, strategies such as visualization, and concern about audience and one's writing voice. The Low Self-efficacy approach is

associated with writing apprehension and the relative lack of writing strategies except for an appreciation of the importance of writing mechanics. The Reflective-Revisionist has more audience awareness and a strong emphasis on a comprehensive, in-depth revision process during which the writer's ideas and understandings emerge and develop. The Spontaneous-Impulsive approach entails a one-step process that lacks planning or personal meaning. Finally, the Procedural approach focuses on method and technique, putting information in an appropriate order, and pleasing the instructor. Writers taking this approach tend not to invest their writing with personal meaning.

These five approaches fall into two general categories: deep and surface approaches (Lavelle & Guarino, 2003). The deep category includes the Elaborationist and Reflective-Revisionist approaches. Students who take a deep approach to writing are more metacognitive while writing and tend to see themselves as active agents in making meaning and to be more personally involved in their writing. These students have more holistic views of writing tasks, are oriented more toward meaning than form, and have a stronger sense of audience. While writing, their focus moves back and forth between the global and local levels, and they revise comprehensively. The surface category is comprised of the remaining three approaches to writing: Low Self-efficacy, Spontaneous-Impulsive, and Procedural. Students with a surface approach are less invested in their writing and less aware of both their writing process and their audience. They do not report learning from writing, focus on the local level, are more rule-bound, and edit at the surface level rather than revise.

In a single study of secondary students who took the IPCC, 398 high school juniors (Lavelle et al., 2002), three factors emerged: Elaborative-Expressive, a deep

approach similar to the Elaborative factor described above, but with a greater emphasis on rules; Planful-Procedural, a surface approach; and Achieving-Competitive, which emphasizes the standards and opinions of the teacher.

Lavelle hypothesized that one's beliefs about writing influence one's selection of writing strategies, which in turn affects the quality of one's writing (e.g., Lavelle & Zuercher, 2001). "Approaches represent an interaction between the learner and the situation of learning with strategies serving as a negotiating link leading to task outcomes," she wrote (Lavelle et al., 2002, p. 401). This echoes Bandura's (1997) view that one's beliefs (self-efficacy beliefs) affect one's performance via a number of factors including one's choice of activities (strategies, in this case). Lavelle's results reflect the possibility that the relation between beliefs about writing and writing strategies is bidirectional in that one's beliefs about writing shape one's selection of writing strategies, and the success or failure of the strategies one uses seem to shape one's self-efficacy for writing as well as one's beliefs about which types of techniques and mindsets are adaptive and productive. Lavelle also speculated that a writer's choice of approaches may be context-bound, reflecting issues such as the beliefs of the student's teacher (Lavelle, 1993) and the time available to write (Lavelle et al., 2002).

Lavelle has not tested this model, and it would be difficult for her to do so without modifying the IPCC. As mentioned above, the IPCC asks about an extremely broad range of issues, including not only beliefs about writing and goals, but also writing strategies that these beliefs supposedly shape. The IPCC thus combines the variables described in the first two parts of her three-part model, beliefs *and* strategies. The breadth of the IPCC is also problematic in that at least one of the approaches, Low Self-efficacy, is not

actually an approach. The items loading on this factor describe low self-efficacy for writing and agreement with the importance of writing mechanics, but these items do no define an approach per se. Because no strategies loaded on this factor, Lavelle deduced that these writers use no strategies (1993).

Nevertheless, Lavelle's research indicates that three of the approaches she has identified among college students are associated with writing performance. The Reflective-Revisionist approach, with its emphasis on meaning making and revision, predicts high grades on expository writing assignments, while the Low Self-efficacy approach is associated with low grades on expository work, and the Elaborative approach predicts high scores for narrative writing (Lavelle & Guarino, 2003). It is unclear whether these approaches affect writing performance directly, indirectly through the writer's choice of writing strategies (as Lavelle hypothesizes), or both.

Summary

The literature addressing beliefs about writing is in its nascent phase and is more sparse and disjointed than literature on writing self-efficacy or writing apprehension, the other two predictor variables in this study. Most of the researchers cited seemed to be unaware of one another's work, perhaps, in part, because they represent different fields and areas of expertise, such as rhetoric and educational psychology, and the study of reading as well as writing. The beliefs investigated thus lack much consistency or commonality from study to study. A few themes do emerge, however. Researchers do seem to distinguish between a substantive and mechanical orientation, which they refer to in those terms or as a deep-surface or a global-local dichotomy, or as an emphasis on comprehensive revision or surface editing (e.g., Lavelle, 1993).

Several of the researchers (Graham et al., 1993; Lavelle, 1993; Silva & Nicholls, 1993; White & Bruning, 2005) indicate that these beliefs about writing are related to writing performance. Thus, in terms of Bandura's model, person variables are affecting behavior. Some hypothesize that this effect is cognitive and mediated by the strategies writers select, with the appropriateness and productiveness of these strategies affecting writing performance directly or indirectly via writing self-efficacy. Others theorize that this link is affective as certain beliefs about writing, such as an emphasis on grammar and mechanics, or the belief that writing skills are innate, may foster writing apprehension, the extent to which students like to write, and their engagement with writing, which could in turn also affect writing performance. Thus, some beliefs may be adaptive, while others may be maladaptive.

Finally, researchers (Graham et al., 1993; Silva & Nicholls, 1993) report that beliefs about writing seem to be shaped by contextual and sociocultural influences, such as teachers' philosophical orientations and instructional approaches, or even the amount of time students are given to write. Thus, in Bandura's terms, the environment may be affecting the person via psychological mechanisms.

<div align="center">Writing Self-Efficacy Beliefs</div>

As discussed above, self-efficacy beliefs, one's beliefs in one's abilities to perform specific tasks, are the most important of the beliefs in Bandura's social cognitive theory (Bandura, 1989). People's beliefs in their own efficacy influence the activities they attempt, the general courses of action they pursue, the amount of effort they invest, the extent to which they persevere when threatened by the prospect of failure, the amount of stress they experience, and the quality of their eventual performance (Bandura, 1997).

People with high self-efficacy set higher goals, are more committed to those goals, work longer and harder, remain more engaged, and make better decisions when threatened with the prospect of failure than do those with low self-efficacy. Differences in self-efficacy beliefs thus help explain why individuals' performance often differs markedly even though they have similar knowledge and skills (Bandura, 1997).

Bandura (1997) has outlined four sources of self-efficacy. The first and most influential is one's interpretation of one's prior performances. If one sees oneself as having been successful, one's self-efficacy rises, and if one sees oneself as having failed, one's self-efficacy declines. Vicarious experience via observing others, including peers and models, also shapes one's self-efficacy, as does verbal persuasion, especially if it is directed specifically to an individual and his or her circumstances. The final source of self-efficacy is internal feedback from one's own physiological states, particularly anxiety, arousal, stress, and mood.

Bandura has laid out specific guidelines on how self-efficacy should be measured. Like self-efficacy itself, measures of self-efficacy should be specific, not global. Bandura is thus clear that self-efficacy measures reflect the domain, task, and subtasks being studied. Pajares (1997) argues that correlations and predictive power are stronger when self-efficacy measures are aligned with the research questions, the tasks studied, the context of these activities, and the assessment measures used. By contrast, he argues that studies that fail to find a relation between self-efficacy and performance often use measures that are too general and lack alignment with the performance measures used.

Previous research has shown that self-efficacy has direct effects on performance, including academic achievement, and affects important choices such as individuals'

selection of college major and career (Bandura, 1997). Pajares (1997) reports that

correlations between self-efficacy and academic performance have ranged from 0.49 to

0.70, and direct path analytical effects have ranged from $\beta = 0.35$ to $\beta = 0.55$. This study

will examine one type of self-efficacy, self-efficacy for writing, or writing self-efficacy,

which has been studied extensively by many leading educational psychologists (e.g.,

Bruning [Shell et al., 1995], Graham and Harris [1989], Pajares [Pajares & Valiante,

2001], Schunk, [Schunk & Swartz, 1993], and Zimmerman [Zimmerman & Bandura,

1994]).

The Initial Studies of Writing Self-Efficacy

The first studies on writing self-efficacy were conducted in the mid-1980s to

determine whether Bandura's social cognitive model, which was successful in helping to

change behavior in areas such as phobias and weight loss, could be extended to

undergraduate writing (Meier et al., 1984). Among these initial studies were two

conducted by Meier and his colleagues (McCarthy et al., 1985; Meier et al., 1984). In

both studies, the authors compared first-year college students' judgments of their self-

efficacy to perform 19 writing skills with assessments of how well they actually did

perform these skills on two take-home class assignments, one written at the beginning of

the semester and one written at the end of the semester. The self-efficacy scale was thus

aligned with the scoring of the essays, as Bandura recommends (1997).

In developing their writing self-efficacy scale which was not published and is no

longer available (S. T. Meier, personal communication, January 15, 2008), Meier et al.

(1984) addressed both substantive and mechanical issues, but intentionally emphasized

mechanical skills because the students who participated wrote at a basic level (McCarthy

et al., 1985). In the 1984 study, writing self-efficacy predicted the writing achievement of the 121 first-year undergraduates who participated and explained 18% of the variance in writing performance in the paper written at the beginning of the semester. However, it was not a significant predictor with respect to the paper written at the end of the semester.

The 1985 article described two studies. In the first study, writing self-efficacy statistically significantly predicted the writing achievement of 137 first-year undergraduates at the beginning of the semester. In the second study, for which there were 60 students, writing self-efficacy statistically significantly predicted writing performance at both the beginning (effect size not reported) and end of the semester when writing self-efficacy accounted for 10% of the variance in writing performance. The authors discussed several explanations for the link between self-efficacy and performance. For example, they explored the possibility that weak writers simply do not invest time and effort in writing and revising, and that some writers negatively evaluate themselves and then create a self-fulfilling prophecy by using only a limited number of writing strategies. The authors called for research investigating the relations between students' writing self-efficacy beliefs and their writing processes. The authors also noted that the link between writing self-efficacy and writing performance may be bidirectional, stating, "When performance improves, belief in one's abilities increases….Similarly, when belief increases, performance improves." (McCarthy et al., 1985, p. 466). One final area of concern was the lack of accuracy in the students' self-efficacy judgments. The authors (1985) wrote that they had frequently noted that writers with only basic skills tend to decidedly over- or underestimate their writing performance. In these two studies, the students overestimated their writing skills.

Shell et al. conducted another early study of writing self-efficacy among undergraduates in 1989. The authors developed a writing self-efficacy questionnaire with two subscales, one asking participants to rate their self-efficacy for performing 8 writing skills and another querying their self-efficacy for performing 16 writing tasks. Both subscales ask participants to rate their self-efficacy beliefs on a scale of 0 to 100. Like the McCarthy's group's writing self-efficacy questionnaire, the skills subscale strongly emphasizes mechanical skills in that seven of the nine items address mechanical issues (e.g., "Correctly spell all words in a one page passage," "Correctly use parts of speech").

The items in the tasks subscale each ask about a different genre, some that are within the everyday experience of the undergraduates who participated in the study (e.g., writing a letter to a friend or family member) and others that are very involved and ambitious, and seemingly outside an undergraduate's experience (e.g., writing a 400-page novel, an automobile insurance contract, a graduate-level textbook in your major field). Five subsequent studies used this scale or variations of it: Pajares and Johnson, 1994; Pajares and Johnson, 1996; Pajares and Valiante, 1997; Rankin et al., 1993; and Shell et al., 1995. The earliest of these subsequent studies used both the skills and tasks subscales. After a number of these studies found much lower correlations between writing performance and self-efficacy for the writing tasks as opposed to the writing skills, the later studies used only the skills subscale.

As a measure of writing performance, Shell et al. (1989) used an essay that students wrote during 20 minutes of class time in response to a question. They scored these essays with respect to five characteristics. Four—realization (vividness, personal involvement); clarity/quality (persuasiveness, logic, distinct ideas); organization

(cohesion); and quantity/density (number of distinct ideas)—were substantive, and one—language mechanics/usage—was mechanical. These component scores were summed to create a holistic score for each paper. The self-efficacy scale and the writing performance assessment were thus not aligned in that the scoring of the writing task stressed substantive issues, while the self-efficacy scale emphasized mechanics. The correlations between writing performance and writing self-efficacy were 0.32 for the skills subscale and 0.17 for the tasks subscale. Multiple regression analysis showed that writing skills self-efficacy was statistically significantly related to writing performance and accounted for 10% of the variance in writing performance scores. Writing tasks self-efficacy was not a statistically significant predictor.

Rankin et al. studied how spelling self-efficacy affected spelling performance among undergraduates in 1993. As part of this study the participants were given a writing self-efficacy test based on the scale developed by Shell et al. (1989) and described above. Rankin et al. selected only 16 items from both the skills and task scales and combined them into one instrument. The writing task was an essay written in 18 minutes in response to a prompt. The essays were graded for realization (vividness, personal investment), clarity and persuasiveness, organization, development, and language mechanics. These subscores were then summed into an overall score. The correlation between writing self-efficacy and writing performance was statistically significant at 0.27. However, in the path model tested, the path coefficient between writing self-efficacy and writing performance was statistically nonsignificant. The path between spelling self-efficacy and writing performance was nonsignificant as well. Thus, neither writing self-efficacy nor spelling self-efficacy predicted writing performance.

In 1994, Pajares and Johnson used the Shell group's writing self-efficacy scale to investigate the relations among writing self-efficacy, writing apprehension, writing performance, and other variables in a study with 30 undergraduate preservice teachers. The students took the writing self-efficacy scale along with an adapted form of Daly and Miller's Writing Apprehension Test (1975b) and wrote an essay during 30 minutes of class time at both the beginning and end of the semester. The measures used were aligned in that the essays were scored with respect to the skills assessed on the writing self-efficacy measure.

At the beginning of the semester, none of the self-efficacy variables—writing skills self-efficacy ($r = 0.23$), writing tasks self-efficacy ($r = 0.03$), or total writing self-efficacy ($r = 0.16$)—was statistically significantly related to writing performance. At the end of the semester, however, writing skills self-efficacy ($r = 0.53$) and total writing self-efficacy ($r = 0.38$) statistically significantly predicted writing performance, but writing tasks self-efficacy ($r = 0.11$) did not. Pajares and Johnson noted that the students' writing self-efficacy did not increase during the semester even though their writing performance did.

Shell et al. conducted a second study of writing self-efficacy in 1995, this time with younger students, 4th, 7th, and 10th graders. The authors used the same self-efficacy instrument they had used in 1989, but they shortened it so they asked about only five writing tasks and four writing skills, and placed these items on a simpler, five-point scale. With three mechanical skills and one substantive skill, the instrument remained focused on mechanics. To assess writing performance, they asked students to write two

paragraphs in class in response to a prompt. Using the scores on this writing assignment, they categorized the students as high, average, or low achievers in writing.

The older students' self-efficacy for writing tasks, but not writing skills, was statistically significantly higher than that of the younger students, with the 4th graders having the lowest levels, followed by the 7th graders, and then the 10th graders. The authors noted that this finding supports Bandura's hypothesis that self-efficacy develops along with cognitive and behavioral skills. As in the first study, writing self-efficacy scores predicted writing performance scores. The high achievers had statistically significantly higher self-efficacy for both writing skills and writing tasks than did the students in the average and low achievement groups, and the average achievers had significantly higher writing self-efficacy for writing skills, but not tasks, than did the low achievers. Effect sizes were not reported. The authors called for research examining how beliefs affect the cognitive processes related to achievement.

Pajares and his colleagues (Pajares & Johnson, 1996; Pajares & Valiante, 1997) conducted two additional studies with variants of the skills subscale of the Shell et al. (1989) writing self-efficacy measure. In the 1996 study Pajares and Johnson studied the effects of writing self-efficacy, writing apprehension, and other variables on the writing performance of 181 9th graders. The authors assessed the students' writing performance by holistically grading an essay they wrote during 30 minutes of class time in light of the writing skills assessed with the self-efficacy measure. The correlation between writing self-efficacy and writing performance was 0.60. Pajares and Johnson noted that this correlation may have been higher than the correlations between these two variables in other studies because the method of scoring the essays was aligned with the self-efficacy

instrument. The authors tested a path model and found that writing self-efficacy had a direct effect on writing performance (path coefficient = 0.40). Pajares and Johnson concluded that teachers should foster students' confidence in their writing skills as well as the skills themselves because students with strong self-efficacy can be more independent learners.

Pajares and Valiante conducted a second path analysis in 1997 using a variation of the skills subscale of the Shell et al. (1989) self-efficacy scale, this time with younger students, 218 5th graders. Again, writing performance was assessed by holistically scoring an essay they wrote in 30 minutes in response to a prompt. Teachers also rated students' writing aptitude on a five-point scale. The correlation between writing self-efficacy and writing performance was 0.56, and the correlation between writing self-efficacy and writing aptitude was 0.26. In the authors' path model, writing self-efficacy had a direct effect on writing performance (path coefficient = 0.36). Pajares and Valiante called for longitudinal studies that might reveal developmental components of writing self-efficacy beliefs. They also called for replication studies using experimental designs and more powerful statistical tools such as structural equation modeling.

The authors of these first studies of writing self-efficacy created the first measures of this construct. These initial measures include items about students' self-efficacy for writing skills as well as their self-efficacy for performing various writing tasks, most often writing in particular genres. As discussed above, the measures assessing self-efficacy for writing skills were more predictive than those assessing self-efficacy for the various writing tasks, perhaps because many of the tasks seem outside the experience of the students who were participants in the studies (e.g., write a rental contract for an

apartment, a contract for an automobile, or a 400-page novel). However, the measures of self-efficacy for writing skills also had shortcomings in that they strongly emphasized mechanical over substantive writing skills, with some having almost four mechanical items for every substantive item (e.g., Shell et al., 1989). This means that these measures assessed self-efficacy for some writing skills and not others, and were not aligned with either expert writing and editing practice or the way writing tasks are commonly assessed (e.g., Diederich, 1966), as Bandura recommended (1997). Subsequent studies were more balanced. I thus call this group of studies the first generation of writing self-efficacy studies and the subsequent studies, which used more balanced scales, the second generation.

The Second Generation of Writing Self-Efficacy Studies

The second generation of writing self-efficacy studies used measures that assessed the entire breadth of writing skills—both the mechanical *and* the substantial. They thus can be seen as having more face validity because they are more comprehensive and as having more external validity because they align better with expert practice, which emphasizes both sets of skills.

In 1993, Schunk and Swartz conducted a study of the effects of feedback on the use of writing strategies among 4th and 5th graders. They hypothesized that using strategies would promote both writing self-efficacy and the acquisition of writing skills, and that feedback coupled with strategy use would enhance performance even more. The study is of interest here because of the inclusion of both writing self-efficacy and writing performance. Schunk and Swartz developed a writing self-efficacy instrument that assessed the students' ability to write paragraphs, the writing task used. This

questionnaire asked the students to rate on a four-point scale their ability to perform the

following five tasks related to paragraph writing: (a) generate five or six good ideas, (b)

think of a good main idea, (c) plan the paragraph, (d) write a clear topic sentence, and (e)

write clear supporting sentences. The scale thus focused on a somewhat local, as opposed

to global, level, as did the writing task, but it asked about substantive issues with respect

to this more limited task. Students answered these questions with respect to four types of

paragraphs for a total of 20 assessments, and they also wrote paragraphs of each type.

The quality of their paragraphs was assessed with respect to organization, sentence

structure and word choice, creativity, and fit with the purpose of the paragraph. These

component scores were summed. In the first experiment, conducted with 60 5th graders,

the correlation between posttest writing self-efficacy and writing performance was high

at 0.83. Posttest writing self-efficacy was also the strongest significant predictor of

writing performance, accounting for 69% of the variance. The second experiment

assessed the maintenance and generalization of strategy use in small groups of 4th

graders. Here, posttest writing self-efficacy and skill correlated moderately at 0.55.

In the 1993 study by Graham et al. discussed in the beliefs section above, the

authors assessed student self-efficacy for various writing processes, including generating

ideas, organizing, getting started, making changes, writing good sentences, keeping the

paper going, and correcting mistakes. This scale was thus primarily substantive. The

writing self-efficacy estimates of the various groups of children, younger and older,

normally achieving and those with disabilities, were not significantly different from one

another and thus did not vary with actual writing ability. The authors found the tendency

of the students with disabilities to overestimate their writing abilities to be consistent with

findings of other studies of students with disabilities. Because the ability to estimate one's own skills is an important metacognitive function, the authors called for research on why these students overestimate their skills and the development of interventions that will help them make more accurate assessments.

Zimmerman and Bandura (1994) conducted a study of students' self-efficacy for regulating their own writing. They developed a 25-item Writing Self-Regulatory Efficacy Scale, which asked students to assess their ability to use writing strategies and execute writing processes, such as planning and revising; creatively select good topics and write interesting introductions; and regulate their time and motivation. Like the other writing self-efficacy scales, this instrument queries writers about their ability to correct their grammatical errors, write various types of sentences and paragraphs, and write with clarity; unlike the other writing self-efficacy scales, this measure asks writers to evaluate their ability to regulate themselves in terms, for example, of being able to concentrate amid distractions, motivate themselves, cope when they get stuck, and meet deadlines. They used PCA to study the factor structure of the scale and selected a one-factor solution that comprised all but two of the items. The Cronbach's alpha was 0.91.

They administered the scale to 95 first-year college students taking a writing course at a highly selective university and found that self-regulatory efficacy for writing did not statistically significantly correlate with writing performance as measured by the students' final course grade. However, path analytical techniques revealed that self-regulatory efficacy for writing indirectly predicted the students' course grade via two paths. In the first path, it predicted course goals via self-efficacy for academic achievement, which predicted course grades directly and via the students' grade goals. In

the second path, it predicted course goals via the students' self-evaluative standards, which also predicted course grades via the students' grade goals.

Pajares and his colleagues conducted four additional studies of writing self-efficacy with more comprehensive scales than they used in their earlier work. In the first of these studies, Pajares et al. (1999) studied the relation between writing self-efficacy and writing performance among 363 3rd, 4th, and 5th graders. Writing self-efficacy was assessed with the Writing Skills Self-Efficacy Scale, which consists of nine items identified by the children's language arts teachers as skills the children need. Five of these items related to writing mechanics, and four dealt with substantive skills. Writing performance was measured by holistically scoring essays the students wrote in 30 minutes in response to a prompt. The correlations between writing self-efficacy and writing performance were 0.58, 0.57, and 0.54 for the 3rd, 4th, and 5th graders, respectively. The path analysis indicated that writing self-efficacy directly influenced writing performance (path coefficient = 0.40). However, the authors discovered a paradox in the writing self-efficacy results with respect to gender: The girls had statistically significantly higher writing performance than did the boys, but their writing self-efficacy scores were no higher than those of the boys. Pajares and his colleagues speculated that the girls may have used a different standard to rate their writing self-efficacy than did the boys.

Pajares and Valiante (1999) attempted to resolve this paradox in a study involving 742 middle school students. The Writing Self-Efficacy scale again asked students about skills identified as important by their language arts teachers. As a measure of students' writing competence the authors used teachers' assessments of the students' writing skills.

The-correlations between writing self-efficacy and writing competence were 0.46 for the girls and 0.39 for boys, and writing self-efficacy directly predicted writing competence (β = 0.02). The writing self-efficacy scores of the boys and girls did not differ. However, when asked to compare themselves to the boys, the girls indicated that they thought they were better writers, and the boys agreed ($p < .0001$). The authors concluded that the girls used a different metric when providing writing self-efficacy judgments than did the boys.

In yet another study, which examined the relation between the writing self-efficacy and achievement goals among 497 middle school students, Pajares et al. (2000) assessed writing self-efficacy by asking students to rate their confidence that they could earn an A, B, C, and D in their language arts classes on a scale of 1 to 6. They used the students' previous grade point average in their language arts classes as a measure of their writing performance. The correlation between writing self-efficacy and writing performance was 0.60.

Pajares and Valiante further analyzed the data from this study with respect to gender differences in 2001. This paper included an analysis of a gender orientation scale they had given the students. A factor analysis revealed that this scale has two orthogonal factors: masculinity and femininity. It was thus possible for students to have high scores in both masculinity and femininity, a condition they termed androgyny; low scores in both masculinity and femininity, a condition they called undifferentiated; high scores in masculinity; or high scores in femininity. Pajares and Valiante found that the correlation between writing self-efficacy and writing performance was 0.46 for the girls and 0.38 for the boys. Writing performance was positively correlated with femininity (0.16, $p = .01$) and negatively correlated with masculinity (-0.14, $p = .01$). Writing self-efficacy also

correlated with femininity (0.32, *p* = .0001), while the association between writing self-efficacy and masculinity was nonsignificant. Regression analyses revealed that differences in both writing performance and writing self-efficacy became nonsignificant when the students' feminine orientation beliefs were controlled. The authors concluded that a feminine orientation is adaptive with respect to writing, while a masculine orientation is not.

Summary and Discussion

The second generation of writing self-efficacy studies brought the writing self-efficacy scales more into balance, with some studies having roughly one substantive item for every mechanical item (e.g., Pajares et al., 1999) and others having very few mechanical items (e.g., Zimmerman & Bandura, 1994). Many of these studies, however, still emphasized mechanical skills more than did Diederich (1966), who had a four substantive criteria and one mechanical criterion in his seminal study of writing assessment, which will be discussed later in this chapter.

Table 3 summarizes the results of the writing self-efficacy studies discussed here. Taken as a group, these studies support Bandura's theory that self-efficacy beliefs act as mediators between writing performance and other influences on behavior, such as skills and abilities. Writing self-efficacy was associated with writing performance in most of the studies reported in these articles. Correlations ranged from 0.03 to 0.83, with most falling around 0.35. Interestingly, the correlations between writing self-efficacy and writing performance were generally higher in the second generation of studies, which had more comprehensive measures. Correlations in the first generation of studies ranged from

Table 3

Summary of Effect Sizes: Writing Self-Efficacy and Writing Performance

Study	Participants	Writing Task	Self-Efficacy Scale	Correla-tions	Variance in Performance Predicted, %
Studies with Scales Emphasizing Mechanical Skills					
Meier, McCarthy, & Schmeck (1984)	121 first-year college students; basic, standard, and honors sections	Two take-home assignments, one at the beginning of the semester, and one at the end of the semester. Scored with respect to the items on the self-efficacy scale	19 items emphasizing mechanical over substantive skills		18 pre NS post
McCarthy, Meier, & Rinderer (1985)	A. 137 first-year college students; beginning writing class B. 60 first-year college students	A. One essay written in class at the beginning of the semester B. Two essays written in class, one at the start of the semester, one at the end. Scored items per the self-efficacy scale.	Scale from Meier et al., 1984.		14 A: pre * B: pre 10 B: post
Shell, Murphy, & Bruning (1989)	153 undergrads	Essay written in 20 minutes of class time. Scored by summing five component scores, four substantive, one mechanical.	Two-part questionnaire, focusing on skills and tasks/genres (18 items). Skills scale emphasized mechanics (7 of 9 items).	.32 skills .17 tasks	10 skills NS tasks
Rankin, Bruning, Timme, & Katkanant (1993)	258 undergrads	200- to 250-word essay written in 18 minutes of class time	Adapted from Shell et al., 1989.	.27	

Table 3, continued

Pajares & Johnson (1994)	30 undergrads	Essay written in 30 minutes of class time, once during the first week of class and again during the last week. Assessed with respect to the skills on the self-efficacy measure.	Adapted from Shell et al., 1989. Scales reported individually and summed. Taken during the first and last weeks of class.	.23 (NS) skills pre .03 (NS) tasks pre .16 (NS) total pre .53 skills post .11 (NS) tasks post .38 total post	
Shell, Colvin, & Bruning (1995)	364 4th, 5th, & 6th graders	Two paragraphs written in class. Scored as in Shell et al., 1989.	Scale from Shell et al. (1989)		*
Pajares & Johnson (1996)	181 9th graders	Essay written in 30 minutes of class time. Scored holistically with respect to the factors assessed in the self-efficacy scale.	Shell et al. (1989) skills scale, modified.	.60 skills	40
Pajares & Valiante (1997)	218 5th graders	Essay written in 30 minutes of class time. Graded holistically.	Shell et al. (1989) skills scale.	.56 skills	
Studies with Scales More Evenly Assessing Both Substantive and Mechanical Skills					
Graham, Schwartz, & MacArthur (1993)	29 7th and 8th graders, and 10 4th and 5th graders	Interview assessing knowledge about writing	10 interview questions: mostly substantive, 3 related to genre.	NS	

Table 3, continued

Schunk & Swartz (1993)	A. 60 5th graders B. 40 4th graders	A. Four paragraphs, each a different type, written in class. B. Six paragraphs, each a different type, written in class. Score by summing four component scores, three substantive, one mechanical; words per T unit.	Five items about writing paragraphs applied to each type of paragraph. Taken pre- and postintervention.	.83 A: post .55 B: post	69
Zimmerman & Bandura (1994)	95 first-year college students in regular and advanced classes in a highly selective university	Final class grade	Writing Self-Regulatory Efficacy Scale: 25 items covering writing processes, creative aspects, self-management	.14 (NS)	
Pajares, Miller, & Johnson (1999)	363 3rd, 4th, and 5th graders	Essay written in 30 minutes of class time. Graded holistically.	The Writing Skills Self-Efficacy Scale: 9 items assessing skills identified by the students' teachers. Five items assessed mechanics; 4 assessed substantive skills.	.58 grade 3 .57 grade 4 .54 grade 5	40

Table 3, continued

Pajares & Valiante (1999)	742 6th, 7th, and 8th graders	Teacher ratings of students' writing abilities	Writing Skills Self-Efficacy Scale: 10 items assessing skills identified by the students' teachers.	.39 boys .46 girls	
Pajares, Britner, & Valiante (2000)	497 6th, 7th, and 8th graders	GPA in previous language arts classes	Students' judgments about the grade they could earn in their language arts class	.60	
Pajares & Valiante (2001)	497 6th, 7th, and 8th graders	GPA in language arts (writing) at the end of the second semester	Writing Skills Self-Efficacy Scale: 10 items assessing skills identified by the students' teachers.	.38 boys .46 girls	

Note: * designates statistically significant (effect size not reported)
         NS designates statistically nonsignificant (effect size not reported)

0.03 to 0.60, with most clustering around 0.25, while correlations in the second

generation of studies ranged from 0.14 to 0.83, with most falling around 0.50.

Participants were diverse and ranged from 4th graders to undergraduates in their first year

of study.

<div align="center">Writing Apprehension</div>

The affective aspects of Bandura's social cognitive theory encompass emotions,

including anxiety. According to Bandura, people with high self-efficacy approach tasks

calmly and serenely, while those who are fearful experience anxiety and stress (Bandura,

1997). The relation between anxiety about writing and writing performance has been

examined for more than three decades. In 1975, Daly and Miller (1975b), noting the observations of composition teachers that undue apprehension about writing interferes with writing performance, developed the Writing Apprehension Test (WAT; sometimes called the Writing Apprehension Scale [e.g., Bline, Lowe, Meixner, Nouri, & Pearce, 2001]) to investigate empirically the relation between writing and apprehension. Daly and Miller described apprehensive writers as people who fear being evaluated for their written work because they expect the evaluations to be negative. As a result, they actively avoid writing, both in the courses they take and the occupations they pursue, and become anxious and unhappy if they find themselves in situations where writing is required.

The WAT is a 26-item, self-report survey that participants respond to using a five-point, Likert-type scale. Daly and Miller's factor analysis of undergraduate responses to the survey yielded two factors—one with the negative items (e.g., "I avoid writing," "I am afraid of writing essays when I know they will be evaluated," and "I'm nervous about writing") and the other with the positive items (e.g., "I look forward to writing down my ideas," "I enjoy writing," and "Writing is a lot of fun"). Daly and Miller interpreted these two factors as the positive and negative side of a single underlying factor. The estimate of reliability was 0.94 (Daly & Miller, 1975b).

Some researchers replicating this factor analysis with other groups of undergraduates agreed that the scale measures a single construct, but others saw it as having two or three factors rather than one (Bline et al., 2001). Reliability estimates remained greater than 0.9. The factors comprising the two-factor solutions tend to reflect (a) a Positive Attitude Toward Writing, alternatively called Enjoyment of Writing, the Rewards of Writing, and Ease of Writing, and (b) Blank Page Paralysis or Writer's

Block, alternatively referred to as Difficulty in Writing and Dislike of Writing. The factors in the three-factor solution were named Ease in Writing, Enjoyment of Writing, and Rewards from Writing (Bline et al., 2001).

Studies of Writing Apprehension and Writing Performance

In a study using the Writing Apprehension Test, Daly and Miller (1975b), who developed this instrument, found that adults with high writing apprehension (at least one standard deviation above the mean) perceived their occupations as having statistically significantly fewer written communications requirements than those with low writing apprehension (at least one standard deviation below the mean). In a second study (Daly & Miller, 1975a) found that undergraduates with high writing apprehension wrote messages that were statistically significantly less intense that those with low writing apprehension.

Hillocks's 1986 review of the writing research analyzed the research on writing apprehension to date. Most of this research was performed with Daly and Miller's Writing Apprehension Test. Hillocks's summary indicated that those with high writing apprehension produce written work that is lower in quality than the work of those with low writing apprehension. Writing apprehensives also write less and avoid writing tasks, writing instruction, and jobs involving writing. They thus do not get enough practice in writing to improve their writing skills.

Many of the studies of writing self-efficacy discussed above also examined writing apprehension (see Table 4). In their 1985 study of first-year college students McCarthy et al. used an unnamed measure of anxiety about writing and found that writing apprehension was significantly related to writing performance during one of their three test periods. The remainder of the studies used Daly and Miller's Writing

Table 4

Summary of Effect Sizes: Writing Apprehension and Writing Performance

Author	Sample	Writing Task	Writing Apprehension Scale	Correlation	Variance in Performance Predicted, %
McCarthy, Meier, & Rinderer (1985)	A. 137 college freshmen in a beginning writing class B. 60 college freshmen	A. One essay written in class during the beginning of the semester B. Two essays written in class, one at the beginning of the semester, one at the end	A measure assessing anxiety about writing		NS * NS
Pajares & Johnson (1994)	30 undergrads	Essay written in 30 minutes in class, once during the first and last weeks of class. Assessed re: the skills on the self-efficacy measure.	Daly & Miller's (1975b) Writing Apprehension Test, modified.	-.03 (NS) pre -.12 (NS) post	* skills NS tasks
Pajares & Johnson (1996)	181 9th graders	Essay written in 30 minutes of class time. Scored holistically according to factors assessed in the self-efficacy scale.	Writing Apprehension Test, modified.	-.48	-13
Pajares & Valiante (1997)	218 5th graders	Essay written in 30 minutes of class time. Scored holistically.	Writing Apprehension Test, modified.	-.31	

Table 4, continued

Pajares, Miller, & Johnson (1999)	363 3rd, 4th, and 5th graders	Essay written in 30 minutes of class time. Scored holistically.	Selected and modified items from the Writing Apprehension Test	-.29 grade 3 -.33 grade 4 -.37 grade 5	NS
Pajares & Valiante (1999)	742 6th, 7th, and 8th graders	Teacher ratings of students' writing abilities	Selected and modified items from the Writing Apprehension Test	-.11 boys -.23 girls	
Pajares, Britner, & Valiante (2000)	497 6th, 7th, and 8th graders	GPA in previous language arts classes	Selected and modified items from the Writing Apprehension Test	-.24	
Pajares & Valiante (2001)	497 6th, 7th, and 8th graders	GPA in language arts (writing) at the end of the second semester	Selected and modified items from the Writing Apprehension Test	-.15 boys -.34 girls	

Note: * designates statistically significant (effect size not reported)
NS designates statistically nonsignificant (effect size not reported)

Apprehension Test, sometimes in a modified form. Writing performance was usually

assessed by scoring an essay written in class in 20 to 30 minutes. In Pajares and

Johnson's 1994 study of 30 undergraduates, writing apprehension was statistically

significantly related to writing performance; correlations were -0.03 (NS) during the

pretest and -0.12 (NS) during the post-test. Pajares and Johnson (1996), who studied 9th

graders, found the correlation between writing apprehension and writing performance to

be -0.48. Pajares and   his colleagues also conducted a number of studies involving

children in middle school. Pajares et al. (2000) found a -0.24 correlation between writing apprehension and students' grade point average in their previous language arts class. With respect to gender, Pajares and Valiante's 1999 study of middle schoolers resulted in a -0.11 correlation between writing apprehension and their teachers' ratings of their writing skills for the boys and a -0.23 correlation for the girls, while in their 2001 study of children of the same age the correlation between writing apprehension and grade point average in language arts was -0.15 for the boys and -0.34 for the girls. Finally, with respect to even younger children, Pajares and Valiante's (1997) work with 5th graders resulted in a -0.31 correlation between writing apprehension and writing performance, while Pajares et al. (1999) found the correlation between writing apprehension and writing performance to be -0.29, -0.33, and -0.37 for 3rd, 4th, and 5th graders, respectively. Thus, numerous studies conducted with varied populations over a number of decades indicate that writing apprehension has a negative relation with writing performance, with correlations ranging from -0.03 (NS) to -0.48, and most falling between -0.20 and -0.40. Two studies indicated that girls may be more vulnerable to the negative effects of writing apprehensive than boys.

Studies of Writing Self-Efficacy, Writing Apprehension, and Writing Performance

A number of the studies of writing self-efficacy discussed immediately above explored the relations among three variables of interest in this study: writing self-efficacy, writing apprehension, and writing performance (see Table 5). Five papers in the first generation of studies of writing self-efficacy, which decidedly emphasized mechanical over substantive skills, reported correlations between writing self-efficacy and writing apprehension. In the Meier et al. study of first-year college students, the

Table 5

Summary of Correlations Between Writing Self-Efficacy and Writing Apprehension

Author	Sample	Self-Efficacy Scale	Writing Apprehension Scale	Correlation	Variance in Apprehension Predicted, %
Studies with Scales Emphasizing Mechanical Skills					
Meier, McCarthy, & Schmeck (1984)	121 college freshmen in basic, standard, and honors sections	19 items	A measure assessing anxiety about writing	-.28 pre -.28 post	
Pajares & Johnson (1994)	30 undergrads	Shell, Murphy, & Bruning (1989) scales, modified. Scales reported individually and summed. Taken during the first and last weeks of class.	Daly & Miller's (1975b) Writing Apprehension Test, modified.	-.29 skills post -.57 tasks post -.50 total post	
Pajares & Johnson (1996)	181 9th graders	Shell et al. (1989) skills scale, modified	Writing Apprehension Test, modified	-.47 skills	-52
Pajares & Valiante (1997)	218 5th graders	Shell et al. (1989) skills scale, modified	Writing Apprehension Test, modified	-.42 skills	
Studies with Scales More Evenly Assessing Both Substantive and Mechanical Skills					
Pajares, Miller, & Johnson (1999)	363 3rd, 4th, and 5th graders	The Writing Skills Self-Efficacy Scale: 9 items assessing skills identified by the students' teachers. Five items assessed	Selected and modified items from the Writing Apprehension Test	-.38 grade 3 -.51 grade 4 -.53 grade 5	-22

		mechanics; 4 assessed substantive skills.			
Pajares & Valiante (1999)	742 6th, 7th, and 8th graders	Writing Skills Self-Efficacy Scale: 10 items assessing skills identified by the students' teachers	Selected and modified items from the Writing Apprehension Test	-.28 boys -.28 girls	
Pajares, Britner, & Valiante (2000)	497 6th, 7th, and 8th graders	Students' judgments about the grade they could earn in their language arts class	Selected and modified items from the Writing Apprehension Test	-.33	
Pajares & Valiante (2001)	497 6th, 7th, and 8th graders	Writing Skills Self-Efficacy Scale: 10 items assessing skills identified by the students' teachers	Selected and modified items from the Writing Apprehension Test	-.41 boys -.36 girls	

correlation was -0.28 during both the pretest and the post-test, while Pajares and Johnson (1994) reported correlations of -0.57 for the tasks subscale, -0.29 for the skills subscale, and -0.50 overall in their study of undergraduate writing. With younger children, Pajares and Johnson (1996) reported a correlation of -0.47 in their study of 9th graders, and Pajares and Valiante (1997) reported a correlation of -0.42 in their study of 5th graders.

In the second generation of writing self-efficacy studies, where the writing self-efficacy scales more comprehensively reflect both substantive and mechanical writing skills, most of the studies involved middle schoolers. Pajares et al. (2000) reported a

correlation of -0.33 between writing self-efficacy and writing apprehension in their study of 6th, 7th, and 8th graders. Pajares and Valiante (2001) examined gender differences in this same data set and reported a correlation of -0.41 for the boys and -0.36 for the girls. In a separate study of middle schoolers, Pajares and Valiante (1999) found the correlation between writing self-efficacy and writing apprehension to be -0.28 for both the boys and the girls. Finally, in a study of younger children, Pajares et al. (1999) found the correlations between writing self-efficacy and writing apprehension to be -0.38, -0.51, and -0.53 for the 3rd, 4th, and 5th graders, respectively.

In summary, writing self-efficacy was negatively correlated with writing apprehension in these studies, with correlations ranging from -0.28 to -0.57, and most falling between -0.28 and -0.50. There was no consistent pattern of differences with respect to gender.

In addition to reporting correlations among writing self-efficacy, writing apprehension, and writing performance, some of the Pajares group's studies used path analysis to test a model of how these variables affect one another. Pajares and Johnson first published this model in their 1996 study of 9th graders. In this model writing self-efficacy directly influences writing apprehension and writing performance, writing self-efficacy also indirectly influences writing performance through writing apprehension, and writing apprehension directly influences writing performance. The direct effects of both writing self-efficacy ($\beta = 0.40$) and writing apprehension ($\beta = -0.13$) on writing performance were statistically significant, as was the effect of writing self-efficacy on writing apprehension ($\beta = -0.52$). Gender had a statistically significant effect on writing

self-efficacy ($\beta = 0.17$) and writing apprehension ($\beta = 0.17$), with girls having lower writing self-efficacy and boys having higher writing apprehension.

Three subsequent studies by the Pajares group also tested this model. As in the Pajares and Johnson study (1996), writing self-efficacy directly influenced both writing apprehension and writing performance, but in contrast to the Pajares and Johnson (1996) study, the path between writing apprehension and writing performance was not significant in this subsequent work. The path coefficients between writing self-efficacy and writing apprehension were -0.45 in Pajares and Valiante's (1997) study of 5th graders and -0.22 in Pajares et al.'s (1999) study of 3rd, 4th, and 5th graders. The path coefficients between writing self-efficacy and writing performance were 0.36 in Pajares and Valiante's (1997) work with 5th graders, 0.40 in Pajares et al.'s (1999) study of 3rd, 4th, and 5th graders, and 0.19 in Pajares and Valiante's (1999) study of 6th, 7th, and 8th graders. Thus, the influence of writing apprehension, which statistically significantly correlated with writing performance in these studies, was nullified in three of these four studies when writing self-efficacy was included in the model. Pajares and Valiante (1997) interpreted these results as confirming Bandura's theory (1986, 1997) that anxiety is a byproduct of efficacy.

Assessments of Writing Performance

In most of the studies discussed above, the researchers assessed writing performance by holistically grading essays that were written in response to a prompt during 20 to 30 minutes of class time (e.g., Pajares & Johnson, 1996) (see Tables 2 and 3). In one case (Pajares et al., 1999), students were told that these essays would count toward their course grade. Other measures of writing performance included teacher

ratings of the students' writing skills (Pajares & Valiante, 1999) and students' grade point averages in language arts (Pajares et al., 2000; Pajares & Valiante, 2001).

The Nature of the Writing Tasks Used in Assessment

Timed writing in response to a prompt, as opposed to standard take-home assignments, is a common method for assessing student writing in research, as can be seen by the studies cited here. It is also common in high-stakes tests such as state achievement exams and college entrance exams. Hillocks (2008) reports that almost all states demand that students write essays on demand in a limited amount of time in response to prompts that provide minimal information. This type of assessment has serious shortcomings: its frequently inflexible format; its lack of authenticity; the restraints it places on students with respect to planning, revising, and reflection; its possible emphasis on writing speed over writing skill; and its possible discrimination against certain groups of students.

First, the type of writing most often required for high-stakes testing is the five-paragraph essay. Students thus receive a great deal of training in this genre, which may be the type of writing they produce for research studies. However, there is considerable backlash against the rigidity with which the five-paragraph essay is taught and with the exclusion of other genres. Graham and Perin (2007c) stress the need for flexibility in writing skills and instruction, stating that flexibility may now be "the most prized goal of writing instruction" (p. 22). The National Council of Teachers of English (2008) concurs, stating, "The 21st century requires writers who can move easily between genres, think critically about new writing tasks, exercise audience awareness, and be able to identify and improve areas of weakness" (p. 4).

Second, timed writing in response to a prompt is inauthentic. Coker and Lewis (2008) complain that such assignments exacerbate the decontextualized nature of school writing. Just as most school assignments lack a real audience, as discussed above, so do they frequently lack real purpose. Instead of integrating writing into the study of content as the research literature suggests (Coker & Lewis), writing in response to a prompt often give students little background information upon which to base their responses, frequently forcing them to conjure up the support they need. The National Commission on Writing (2006) echoes this call for assessments that are authentic, as does the National Council of Teachers of English (2008), which maintains that current assessments "are often ineffective or incomplete indicators of student ability and capability for college work" (p. 3) and also have "a negative effect on writing instruction because they are disconnected from instruction and provide little or no useful feedback to teachers or students" (p. 5). The National Council of Teachers of English (2005) specifically criticized the short, timed essays required on college entrance examinations because they create a context in which

> students will likely produce a kind of writing that is necessarily formulaic
> and superficial—writing that is very different from the lengthier, in-depth,
> and complex writing expected by most college professors, who tend to
> discourage rote organization and superficial thinking. (p. 3)

Third, timed writing in response to a prompt does not allow students to implement the strategies and techniques that they are often taught and that expert writers use. For example, a 20- to 30-minute period does not allow adequate time for planning, revision, reflection, and revisioning, and also precludes the collaboration that is common in

classrooms and workplaces (Coker & Lewis, 2008). Such tests are thus "not well-aligned with contemporary views of writing instruction" (p. 371), according to Murphy and Yancey (2008). The National Commission on Writing (2006) agrees, specifically calling for writing assessments that allow students enough time to write.

Fourth, timed tests may privilege students who can write quickly over those who can write well. Murphy and Yancey (2008) point to studies where evaluators gave students higher grades on their writing portfolios than they did on the writing samples they prepared in 30 to 40 minutes, and where the weakest writers seemed most disadvantaged by timed testing. They concluded that,

> A test's validity is diminished when time is a serious factor for most of the
> test population, or for particular groups within that population. In such
> cases, a test's results speak more to who can perform a task within an
> allotted time and less to who is capable of performing the task (p. 371).

Finally, this type of test may discriminate against students with less background knowledge, especially because the prompts can be vague. According to Murphy and Yancey (2008), students with less knowledge of the subject they are required to write about are less likely to write well. Hillocks (2006) argues that this is a particularly important constraint in testing situations because the students can not use outside resources to compensate for any lack of subject-matter knowledge.

Pajares and Johnson (1996) allowed that a writing sample drafted in timed, in-class conditions is "an imperfect reflection of writing ability" (p. 166), but maintained that it provides a reliable assessment. Researchers using writing samples written in class

can, of course, also be sure that they are evaluating work that is written by the student without outside assistance.

A second issue related to the nature of most writing assessments used in research studies is the number of writing samples used to represent the students' writing abilities. Most studies and assessments are based on a single writing sample, although some do use a more general indicator of performance, such as a grade in a writing course (e.g., Zimmerman & Bandura, 1994). Many researchers are now arguing that a single writing sample cannot reflect the variety of writing students might be expected to produce (Murphy & Yancey, 2008). Hayes et al. (2000) also question the ability of a single sample to predict the quality of a student's future writing. In a study of 796 essays written by 241 students in 13 sections of a beginning freshman writing classes at two colleges, the Hayes group found that the writing consistency of these samples (a form of test-retest reliability) was very low. The average correlation between the grades of successive essays written by the same student was only 0.11 when the papers were graded holistically with a letter grade (A+ to E) and 0.21 when the papers were ranked. The writing consistency found in the studies summarized by Hayes et al. in the literature review of their paper was somewhat higher, ranging from 0.31 to 0.51. Most of the papers used in these studies were written on demand in as little as 20 minutes. However, even at these higher consistency levels, a researcher would need between 5 and 10 such samples to reach a test-retest reliability of 0.80. The Hayes group reasoned that timed writing samples drafted in response to a prompt would be an even less sensitive predictor of future performance in a college course than would take-home assignments. They thus estimated that a typical college entrance exam or placement test would predict less than

5% of the variance in the quality of papers written in first-year college composition classes.

The Scoring of Writing Samples

Writing performance has most commonly been measured by a holistic score like the letter grade students receive on their class papers. However, some researchers have used analytical scoring, which involves grading various aspects of student writing and then summing these subscores with or without weighting them. The paper on holistic scoring most often referred to in the studies cited in this chapter (e.g., Graham et al., 1993) is that of Cooper (1977), who defines holistic scoring as procedures that involve reading papers without correcting them or counting any of their features. Cooper maintains that raters can read papers and holistically score them in less than two minutes per paper and achieve an interrater reliability as high as 0.90.

The landmark paper on analytic scoring is that of Diederich (1966), who developed a five-factor scoring system for measuring growth in academic writing. Diederich assembled 60 readers representing six fields—college English teachers, social science teachers, natural science teachers, writers and editors, lawyers, and business executives. He asked each reader to sort 300 papers written by undergraduates with either high or low SAT verbal scores into nine piles with respect to their general merit. Diederich described the results as "nearly chaos" (p. 442) as, for example, one-third of the papers received all nine grades and no paper received fewer than five. Diederich factor analyzed the grades of the readers to identify the groups of readers who might be using the same ranking criteria. After studying the comments those readers wrote on the papers, five factors emerged: (a) Ideas, including richness, soundness, clarity,

development, and relevance; (b) Mechanics; (c) Organization and analysis; (d) Wording and phrasing; and (e) "Flavor," the personal qualities of the writing. When this system was piloted in three high schools the following year, the five factors collapsed into two: (a) General Merit, which included Ideas, Organization, Wording, and Flavor, and (b) Mechanics—in other words, Substantive and Mechanical. Diederich expanded the Mechanical category when using the system in high schools with handwritten papers. The criteria became (a) Ideas, (b) Organization; (c) Wording, (d) Flavor, (e) Usage and Sentence Structure, (f) Punctuation, capitals, abbreviations, numbers, (g) Spelling, and (h) Handwriting, neatness. He gave the first two criteria, Ideas and Organization, twice the weight of the last six. Murphy and Yancey (2008) note that studies examining the influence of various characteristics of writing on holistic grades have found that development has the most influence, followed by organization and mechanics.

Holistic and analytical scoring both have advantages and disadvantages. Holistic scoring is more economical and parsimonious, and it is more widely used than analytical scoring. Analytic scores give researchers, teachers, and students alike richer and more detailed information on student performance. This type of scoring system thus can better pinpoint writing strengths and weaknesses for diagnostic purposes, formative evaluation, as well as the development and evaluation of instructional interventions. Coker and Lewis (2008) criticize studies that use holistic writing performance measures, arguing that these measures can obscure the effect of instructional interventions on specific writing skills. Murphy and Yancey (2008), acknowledging the tensions involved in selecting a system for evaluating writing performance, ultimately conclude that no single approach can be valid in all contexts and for all purposes.

Summary

Writing is a key skill in schools and workplaces, but writing performance in the U.S. is weak across contexts and age groups. New methods of writing instruction for various age groups and contexts are thus needed. Bandura's social cognitive theory affords a strong theoretical basis that can support this work. Social cognitive theory examines various aspects of behavior, the environment, and the person, including his or her cognition and affect. Among the environmental influences on writing are our established methods for teaching and assessing writing, and our customs of rewarding good writers and sanctioning those who do not write well.

Person influences on affecting writing performance include both affective and cognitive variables. Affective influences include writing apprehension, which has negative effects on writing performance. Cognitive aspects of the person include his or her beliefs, particularly his or her self-efficacy beliefs. Considerable research conducted over the past 25 years indicates that writing self-efficacy beliefs affect writing performance and mitigate writing apprehension, which has negative effects on writing, among students from 4th grade through undergraduate school.

Research also indicates that another type of beliefs, beliefs about writing, may also affect writing performance. Some researchers hypothesize that these writing beliefs have cognitive effects and mediate the strategies writers select. Others theorize that this link is affective as certain beliefs about writing, such as an emphasis on grammar and mechanics, may foster writing apprehension and decrease the extent to which students like to write. Thus, some writing beliefs may be adaptive, while others may be

maladaptive. These beliefs about writing seem to be shaped by environmental influences, such as teachers' philosophical orientations and instructional approaches.

CHAPTER III

METHOD

This exploratory, correlational study is being conducted in three phases. The first two phases, which are complete and described herein, involved extensive pilot tests required for the preparation of the main study. The first phase consisted of modifying existing measures of two of the independent variables (i.e., writing self-efficacy and writing apprehension), developing a new measure of beliefs about writing, and testing the validity and reliability of the data from these measures. The second phase involved adding additional items to the Beliefs about Writing Survey to strengthen the reliability of data for certain subscales and then re-examining the validity and reliability of the resulting data for this newly revised scale. Finally, this study, the third phase of the overall research project, will investigate the relations among the independent variables and their influence on writing performance with the revised battery of measures.

This chapter first summarizes Phases I and II of the research project and discusses the rationale for developing and refining the instruments. The chapter then describes the design and method for conducting this study, Phase III, including the design of the study, the nature and selection of the participants, the procedures for data collection, and the data analysis techniques used to answer the research questions.

Phase I

Phase I of this project entailed identifying appropriate measures and adapting them to this research project. The following sections describe the existing measures chosen to be the bases of the new instruments and the rationale for modifying them to align better with the research literature, the principles underlying expert writing and

editing practice, and the writing task being used to assess writing performance in this study.

<div align="center">*Key Variables Addressed*</div>

Dependent Variable: Writing Performance

Writing performance was not assessed in the first two phases of this research project, but it was important to focus on it nonetheless to ensure that the measures of the independent variables would align with the measure of writing performance used in Phase III. Writing performance was assessed via the grade the participants received on a single writing sample: a structured, five-page paper they wrote for the educational psychology course they were taking. This is similar to the approach taken by McCarthy et al. (1985) in both the pretest and post-test phases of their study. The participants were to use this paper to demonstrate their understanding of the course material by analyzing the three preschools depicted in the video ethnography *Preschool in Three Cultures: Japan, China, and the United States* by Tobin, Wu, and Davidson (ca.1984) through the lens of the learning theories they studied in the course. The assignment also required that they discuss their own preferences with respect to learning theory and how they generally planned to apply these theories when they became teachers.

These papers were scored holistically, with a letter grade from A to F, including pluses and minuses according to the procedures outlined by Cooper (1977) and used by many of the researchers cited in this study (e.g., Graham et al., 1993; Rankin et al., 1993; Shell et al., 1989). The College of Education had identified this paper as the "critical task" for this course, which means that students had to get at least a C on this paper to pass the course. Grades of C- and lower were thus not passing grades. The College

allowed students the opportunity to rewrite one time if they did not earn a grade of C or higher on their first attempt. In addition to papers that were weak in terms of overall quality, papers extremely lacking in one of the following four areas received nonpassing grades: mastery of the course material, a clear statement about the student's personal preferences with respect to the learning theory covered in the course, a developed argument with respect to which of the schools in the video represent the various theories studied, and acceptable writing mechanics (grammar, syntax, and usage). As is the case in many colleges and universities (Achieve, Inc., 2005), writing skills among students in the College were not strong, so the development of these skills was a priority (A. Tashakkori, personal communication, May 7, 2008). In the sections of the educational psychology class that were included in the initial phases of this study, 34.2%, 29.9%, and 23.5% of the students who participated received grades lower than the passing grade of C on their first submissions in the pilot, Phase I, and Phase II of this overall study, respectively.

The papers were also scored analytically, as was done by White and Bruning (2005), but via a rubric, which Andrade and Boulay (2003) argue supports learning and the development of writing skills by laying out clear, concrete characteristics of good writing and helping students assess their own works in progress. As will be discussed later in this chapter, the self-efficacy scale is aligned with this measure of performance. The participants received this rubric when they received the assignment. The rubric thus served not only as an analytical scoring guide, but also as a checklist the participants could use while reviewing and revising their work before they turned it in and as a means through which I gave them comprehensive feedback while grading. The rubric (see

Appendix A) evaluated the students with respect to their mastery of the content as well as their writing skills. The rubric has nine rows. The first three rows assess mastery with respect to the Florida Educator Accomplished Practices (FEAPs) covered by the course:

- FEAP 5: Acceptance and Fostering of Diversity

- FEAP 7: Human Learning and Development

- FEAP 9: The Design of Learning Environments.

The fourth row addresses the participant's statement of his or her own preferences with respect to learning theory. The last five rows relate to the participants' writing skills. The first four of these writing criteria are substantive:

- Development, Argumentation, Persuasiveness, Analysis

- Clarity, Audience Awareness

- Organization

- Language.

The final row addresses grammar and mechanics.

Most of the criteria listed in these last five rows are iterations of those identified by Diederich in his 1966 seminal study measuring growth in writing ability. The bottom five rows of the rubric can thus be used for academic writing in general, as opposed to other genres such as fiction or speech writing. Anyone wishing to use it need only replace the criteria in the top four rows with criteria assessing the content of the course he or she is teaching. Of the last five criteria (those addressing writing), the first, Development, is similar to Diederich's first criterion, Ideas, and is a focal point of this paper. Because the participants wrote in support of their own opinions about the schools and the theories, they were not graded as right or wrong, but evaluated instead with respect to how well

and thoroughly they laid out their positions and analyzed the scenes they saw in the video. The rubric scaffolded the students with respect to development by explaining that students not only needed to give examples from the video to support their opinions, but also had to explain how these examples were appropriate. Clarity, the second criterion, is also covered by Diederich's notion of Ideas and is always a key issue in writing. For example, four of the ten lessons in Joseph Williams's classic book *Style: Ten Lessons in Clarity and Grace*, now in its ninth edition (2006), relate to clarity. Clarity is coupled with audience awareness because clarity implies an audience in that what might be clear to one group of readers may not be clear to another. Organization, the third criterion, is also one of the five criteria Diederich identified. Organization should have been less challenging than usual for this paper because the participants received a general outline laying out the elements they must include in this paper. Language, called Wording by Diederich, reflects the appropriateness and variety of the writer's word choices and usage. The final row of the rubric addresses mechanical issues (grammar, spelling, sentence structure, punctuation), as does the last of Diederich's five criteria for assessing writing.

The rubric has three columns, Target, Acceptable, and Unacceptable, the categories that the National Council for Accreditation of Teacher Education (NCATE, 2005), the accrediting body of the College of Education at the university where the study was conducted, has established for scoring rubrics. The rubric details what various characteristics of good writing look like, both when present and when lacking, to give the participants a concrete understanding of what words like "development" and "clarity" mean. For example, with respect to clarity and audience awareness, the rubric states:

- Target: "Paper takes a clear position, has a definite focus, flows. Reader can easily appreciate the points being made. Writer anticipates and answers the reader's questions" (p. 1).

- Acceptable: "Paper takes a position and has some focus, although it has a good amount of 'filler.' Paper understandable to an outside reader willing to put in some work" (p. 1).

- Unacceptable: "Difficult for the reader to follow, even with hard work. Assumes reader has extensive background knowledge relevant to the paper. Lots of 'filler.' Some passages awkward, garbled" (p. 1)

Independent Variables

Writing apprehension. Writing apprehension was assessed with Daly and Miller's Writing Apprehension Test (WAT; 1975b). The WAT is a 26-item, self-report survey that participants responded to using a five-point, Likert-type scale. Daly and Miller factor analyzed undergraduate responses to the survey to investigate the instrument's construct validity. Their factor analysis yielded two factors—one with the negative items (e.g., "I avoid writing," "I am afraid of writing essays when I know they will be evaluated," and "I'm nervous about writing") and the other with the positive items (e.g., "I look forward to writing down my ideas," "I enjoy writing," and "Writing is a lot of fun"). Daly and Miller interpreted these two factors as the positive and negative side of a single underlying construct. The Cronbach's estimate of reliability (α) was 0.94.

Anecdotal evidence presented in Chapter II indicates that the WAT may benefit from the inclusion of items assessing a specific type of writing apprehension, anxiety about making mechanical errors such as punctuation, grammar, and spelling errors. I thus

added three items to this scale to determine if these items might either emerge as a

separate factor or strengthen an existing factor, and thereby enrichen the WAT (see Table

6).

Writing self-efficacy. Zimmerman and Bandura's (1994) Writing Self-Regulatory

Efficacy Scale was selected to be the foundation for the measure used in this study

because it was one of the few scales of the second generation of writing self-efficacy

measures—those that comprehensively represented substantive as well as mechanical

issues—used with undergraduates, the population that will be examined in this study.

This scale has 25 items covering writing processes, creative aspects of writing, and the

self-management of writing projects. The principal components analysis (PCA) with

varimax rotation used to study the factor structure of the scale yielded a one-factor

solution that comprised all but two of the items, thus providing evidence of the construct

validity of the scale. The Cronbach's alpha was 0.91.

According to Bandura (1997), self-efficacy scales should be tailored to suit the

task at hand, so I added items to this scale that corresponded to the five categories of the

scoring rubric used to assess the participants' writing skills. I also added four questions

on writing process and one general item addressing self-efficacy for completing

assignments, for a total of 60 items (see Table 7). Some of these items were adapted from

other scales. The items were placed on a 0 to 100 Likert-type scale as recommended by

Pajares et al. (2001). The survey also included a question asking the students to predict

the grade they would receive on the paper.

Beliefs about writing. For this investigation, beliefs about writing were

operationalized as the participants' perceptions about good writing and good writers.

Table 6

The Modified Writing Apprehension Test

Daly & Miller's (1975b) Original Writing Apprehension Test
1. I avoid writing.
2. I have no fear of my writing being evaluated.
3. I look forward to writing down my ideas.
4. I am afraid of writing essays when I know they will be evaluated.
5. Taking a composition course is a very frightening experience.
6. Handing in a composition makes me feel good.
7. My mind seems to go blank when I start to work on a composition.
8. Expressing my ideas through writing seems to be a waste of time.
9. I would enjoy submitting my writing to magazines for evaluation and publication.
10. I like to write my ideas down.
11. I feel confident in my ability to clearly express my ideas in writing.
12. I like to have my friends read what I have written.
13. I'm nervous about writing.
14. People seem to enjoy what I write.
15. I enjoy writing.
16. I never seem to be able to clearly write down my ideas.
17. Writing is a lot of fun.
18. I expect to do poorly in composition classes even before I enter them.
19. I like seeing my thoughts on paper.
20. Discussing my writing with others is an enjoyable experience.
21. I have a terrible time organizing my ideas in a composition course.
22. When I hand in a composition, I know I'm going to do poorly.
23. It's easy for me to write good compositions.
24. I don't think I write as well as most people.
25. I don't like my compositions to be evaluated.
26. I'm no good at writing.
Apprehension About Grammar
▪ I worry that I may make a grammatical error.*
▪ I'm afraid that I will make a punctuation error.*
▪ I'm afraid that I may miss a misspelled word or typo.*

Note: * designates a new item.

Table 7

The Modified Writing Self-Regulatory Efficacy Scale

Original Zimmerman and Bandura Writing Self-Regulatory Efficacy Scale
1. When given a specific writing assignment, I can come up with a suitable topic in a short time.
2. I can start writing with no difficulty.
3. I can construct a good opening sentence quickly.
4. I can come up with an unusual opening paragraph to capture my readers' interest.
5. I can write a brief, informative overview that prepares readers well for the main thesis of my paper.
6. I can use my first attempts at writing to suit the needs of my audience.
7. I can adjust the style of my writing to suit the needs of any audience.
8. I can find a way to concentrate on my writing even when there are many distractions around me.
9. When I have a pressing deadline on a paper, I can manage my time efficiently.
10. I can meet the writing standards of an evaluator who is very demanding.
11. I can come up with memorable examples quickly to illustrate an important point.
12. I can rewrite my wordy or confusing sentences clearly.
13. When I need to make a subtle or an abstract idea more imaginable, I can use words to create a vivid picture.
14. I can locate and use appropriate reference sources when I need to document an important point.
15. I can write very effective transitional sentences from one idea to another.
16. I can refocus my concentration on writing when I find myself thinking about other things.
17. When I write on a lengthy topic, I can create a variety of good outlines for the main my paper.
18. When I want to persuade a skeptical reader about a point, I can come up with a convincing quote from an authority.
19. When I get stuck writing a paper, I can find ways to overcome the problem.
20. I can find ways to motivate myself to write a paper even when the topic holds little interest.
21. When I have written a long or complex paper, I can find and correct all my grammatical errors.
22. I can revise a first draft of any paper so that it is shorter and better organized.
23. When I edit a complex paper, I can find and correct all my grammatical errors.
24. I can find other people who will give critical feedback on early drafts of my paper.
25. When my paper is written on a complicated topic, I can come up with a short, informative title.

Table 7 continued

Additional Substantive Items
Development, Argumentation, Persuasiveness, Analysis ▪ When I write, I can find enough to say. ▪ I can convince my reader of the points I'm trying to make. ▪ I can logically make the points I want to convey. ▪ I can figure out what to write about, what to say. ▪ I can determine what kind of evidence I need to support the points I'm making.
Clarity, Audience Awareness ▪ I know what type of arguments will convince my audience. ▪ I can easily understand what's expected of me regarding my writing assignments. ▪ I can write so people understand what I mean. ▪ I can write so that people don't have to ask a lot of questions about what I mean. ▪ I can tailor my paper to the demands of the assignment. ▪ I know how to determine what my audience wants to know about my topic. ▪ I can write so that people don't have to reread my papers to understand them. ▪ I know how to assess what my audience wants and needs.
Organization ▪ I can organize sentences into a paragraph so as to clearly express a theme. ▪ I can write a paper with good overall organization (e.g., ideas in order, effective transitions, etc.). ▪ I can focus my paper on the main ideas I'm trying to get across. ▪ I can select a format that will effectively convey my message.
Language ▪ I can put my ideas into words. ▪ I can find the words I need to convey my message. ▪ I can find the words to express my ideas. ▪ I can think of the right words for my ideas. ▪ I can select words that suit my writing project.
Additional Mechanical Items
Grammar, Punctuation, and Spelling ▪ I can correctly spell all of the words in the papers I write. ▪ I can correctly punctuate the papers I write. ▪ I can correctly use plurals, verb tenses, prefixes, and suffixes. ▪ I can fix my grammatical errors. ▪ I notice formatting errors when I revise. ▪ I can spot my mechanical errors when I revise. ▪ I can write a simple sentence with proper punctuation and grammatical structure. ▪ I can write compound and complex sentences with proper punctuation and grammatical structure.

Table 7 continued

Additional Other Items

Process
    ▪ I can outline my ideas.
    ▪ I can plan what I want to say before I start writing.
    ▪ I can revise my writing to make it better.
    ▪ I can revise my writing to make it easier to read.

General   ▪ I can successfully complete the writing assignments I commonly receive.

These beliefs were measured by the newly developed Beliefs about Writing Survey, an expansion of White and Bruning's Writing Beliefs Inventory (White & Bruning, 2005). The Writing Beliefs Inventory was selected as the foundation for the scale to be used in this study because it was more recent than some of the other scales and because it was rooted in educational psychology. This scale looks at writers' transactional and transmissional beliefs about writing, the two factors identified in White and Bruning's factor analysis of this instrument. Items were added to this scale for several reasons.

First, items were added to represent other beliefs about writing discussed in the research literature and summarized in Chapter II. Second, items were added to represent expert writing and editing practice as described in Chapter II. Third, items were added to align this scale with the rubric that will be used to assess writing performance. Finally, additional items were added to align with the apprehension about mechanical errors items that were added to the WAT. The final scale had 54 items. Because the nature of this scale was altered substantially, I will now refer to it as the Beliefs about Writing Survey.

The first category, Writing as an Innate Gift, was added to represent the initial research on beliefs about writing conducted by the Palmquist group (Charney et al., 1995; Palmquist & Young, 1992). The second category, Mechanics (the "Basics) reflects the

belief criticized at great length in the research literature that mechanical writing skills are foundational to substantive skills (e.g., Braddock et al., 1963; Graham & Perin, 2007a; Hillocks, 1986). A counterpoint to this position is Substantive Issues First, a principle that guides expert practice (Boston, 1986). Another category from expert practice is the notion of Writing as an Iterative Process involving several stages including significant revisioning and revising (e.g., Boston, 1986). In contrast to this belief is the notion that one should Minimize Revision and complete writing tasks with as few drafts as possible (Lavelle & Zuercher, 2001). The sixth category is the notion that one should Write to Impress one's readers by using big words and complex sentence structure, for example (Silva & Nichols, 1993). Two categories contrast this view: Use Plain English (Silva & Nichols, 1993) and Adapt to the Audience and Be Clear, which also reflects one of the rubric categories. The Importance of Development is another category that reflects the rubric. The tenth category, Use Established Formulas and Formats, is discussed in the research literature (Silva & Nichols, 1993) and serves as another counterpoint to the expert approach of adapting to the audience and being clear. Finally, Mechanical Errors Are Shameful aligns this scale with the additions to the WAT. Table 8 lists the items added in each category.

Method

The participants were 207 undergraduates in four sections of an educational psychology class that preservice teachers at the university were required to take. The participants reflected the demographic profile of the student body in the College of Education. Most (87%) were women, while 14% were men; 71% were Hispanic, 15% were white, 5% were black, 5% were Asian, and 5% identified themselves as "other."

Table 8

Beliefs about Writing Survey

Transmissional
    ▪ Good writers include a lot of quotes from authorities in their writing.[WB]
    ▪ Writing's main purpose is to give other people information.[WB]
    ▪ A primary goal of writing should be to have to make as few changes as possible.[WB]
    ▪ Writing should focus on the information in books and articles.[WB]
    ▪ The key to successful writing is accurately reporting what authorities think.[WB]
    ▪ The most important reason to write is to report what authorities think about a subject.[WB]
    ▪ Good writers stick closely to the information they have about a topic.[WB]

Transactional
    ▪ Writing requires going back over it to improve what has been written.[WB]
    ▪ Writing is a process involving a lot of emotion.[WB]
    ▪ It's important to develop a distinctive writing style.[WB]
    ▪ Good writing involves editing it many times.[WB]
    ▪ Writing often involves peak experiences.[WB]
    ▪ Writing helps me understand better what I'm thinking about.[WB]
    ▪ I always feel that just one more revision will improve my writing.[WB]
    ▪ Writing helps me see the complexity of ideas.[WB]
    ▪ My thoughts and ideas become more clear to me as I write and rewrite.[WB]
    ▪ Writers' views should show through in their writing.[WB]
    ▪ Writing is often an emotional experience.[WB]
    ▪ Writers need to immerse themselves in their writing.[WB]

Writing Is an Innate Gift
    ▪ The ability to write is a gift that some people have and some people don't.*
    ▪ Some people just know how to write.*
    ▪ Writers are born, not taught.*

Basics (Mechanics) First
    ▪ Students need to master the basics of writing—grammar, punctuation, spelling—before they learn to write anything complex.*
    ▪ Writers should focus first and foremost on the basics—spelling and grammar.*
    ▪ The key to good writing is getting the grammar and mechanics right.*

Address Substantive Issues First
    ▪ Writers shouldn't worry about spelling and grammar until they are sure they've made their main points.*
    ▪ While drafting, one should focus on getting one's ideas on paper and worry about spelling and mechanics later.*
    ▪ Grammar is important, but it is not as essential as the point the writer is trying to make.*

Table 8 continued

Writing Is an Iterative Process
• When revising, writers should first go back to the assignment and make sure that they met the substantive requirements.*
• During revision, one should carefully check one's manuscript for both substantive and mechanical problems.*
Minimize Revision
• Revision is necessary only if the writer doesn't plan and draft carefully.*
• Good writers write it right the first time.*
• If you plan your document well, you won't have to revise.*
Write to Impress
• Good writers demonstrate the breadth of their vocabularies by using a lot of big words.*
• Good writers demonstrate their skill at crafting complex sentences.*
• Readers are impressed by big words.*
Use Plain English
• Good writing has simple sentences, nothing fancy.*
• Good writing sounds natural, not stiff.*
• Good writers don't let their choice of words overshadow their message.*
Adapt to the Audience/Be Clear
• Good writers are sensitive to their readers.*
• Good writers adapt their message to their readers.*
• Good writers are oriented toward their readers.*
• It's important to select the words that suit your purpose, audience, and occasion.*
• Good writers make complicated information clear.*
• Good writers use the sentence structure that best conveys their ideas.*
Development Is Important
• Good writers thoroughly explain their opinions and findings.*
• One of the most important things about writing is the quality of the thinking it conveys.*
• Good writers are logical and convincing.*
Use Established Formulas and Formats
• There are standard formats for writing. Good writers know what they are.*
• When it comes to good writing, there are certain ways to do things, such as organize.*
• When writing, it's best to use proven formats and templates, and then fill in the important information.*
• Good writers select formats that are well suited to the messages they want to convey.*
Mechanical Errors Are Shameful
• You can ruin a brilliant paper with just a few grammatical errors.*
• There's no excuse for misspellings and punctuation errors.*

Note: WB designates item from the White & Bruning (2005) scale
    * designates a new item

The students took the battery of instruments and a survey of demographic information for extra credit in 40 to 50 minutes of class time after they learned about their writing assignment and saw the video they were to analyze. No one refused to participate.

PCA with varimax rotation was used to analyze the factor structure of the modified WAT, the Beliefs about Writing Survey, and the modified Writing Self-Regulatory Efficacy Scale.

<div align="center">*Results*</div>

Modified Writing Apprehension Test

The PCA with varimax rotation of the amended WAT yielded a three-factor solution that was supported by the scree plot. The first factor, Dislike of Writing, especially the evaluation of one's writing, accounted for 23.5% of the variance (eigenvalue = 6.8). The second factor, Enjoyment of Writing and sharing one's writing with others, accounted for 21.4% of the variance (eigenvalue = 6.2). The items added for this study created a distinct third factor, Apprehension About Grammar, which accounted for 9.7% of the variance (eigenvalue = 2.8). The Cronbach's alpha for the entire scale was 0.95, while the Cronbach's alphas for the subscales were 0.91, 0.91 and 0.80, respectively. The separation of the original WAT into two factors indicates that apprehension of writing, particularly the evaluation of one's writing, may differ from enjoyment of writing and sharing one's writing with others. The fear of making grammar and other mechanical errors accounted for unique variance and thus seems to be another facet of writing apprehension that was not captured by the original scale.

Modified Writing Self-Regulatory Efficacy Scale

The scree plot associated with the PCA with varimax rotation of the Writing Self-Regulatory Efficacy Scale pointed to a three-factor solution. The items written to reflect the four substantive writing issues assessed by the rubric—Development, Audience/Clarity, Organization, and Language—all loaded together along with the items assessing writing process (e.g., "I can plan what I want to say before I start writing" and "I can outline my ideas") and the self-regulatory items from the Zimmerman and Bandura scale (1994; e.g., "When I have a pressing deadline on a paper, I can manage my time efficiently," and "When I get stuck writing a paper, I can find ways to overcome the problem") to create a single Substantive factor. This factor, which accounted for 25.3% of the variance (eigenvalue = 15.9), thus encompasses the items affecting overall writing quality and the writer's executive control over the writing process. The second factor, which accounted for 18.4% of the variance (eigenvalue = 11.6), was comprised of most of the items from the Zimmerman and Bandura scale, particularly those assessing the writer's self-efficacy for completing various components of a writing assignment (e.g., "I can come up with an unusual opening paragraph to capture my reader's interest," and "I can construct a good opening sentence quickly"). This factor thus captures the mini-genres and tasks involved in writing a paper. The items assessing Mechanical skills loaded on the third factor, which accounted for 15.0% of the variance (eigenvalue = 9.5). This factor included several items from the Zimmerman and Bandura scale (e.g., "When I edit a complex paper, I can find and correct all my grammatical errors" and "I can rewrite my wordy or confusing sentences clearly"). The two items related to revision (e.g., "I can revise my writing to make it better") crossloaded on the Substantive and Mechanical

factors, which makes sense because revision involves both substantive and mechanical issues. The Cronbach's alphas were 0.98 for the entire scale, 0.98 for the Substantive subscale, 0.94 for the items from the Zimmerman and Bandura scale that formed the second factor, and 0.93 for the Mechanical subscale.

The emergence of Substantive and Mechanical factors supports the results of Pajares et al.'s (2001) factor analysis of their writing self-efficacy scale, which yielded two orthogonal factors, one representing substantive skills and the other mechanical skills. These results also align with the expert practice of dealing with writing issues in two stages, substantive and mechanical.

Beliefs about Writing Survey

Most of the factors theorized emerged during the PCA of the Beliefs about Writing Survey. The pencil test of the scree plot indicated that there were 9 to 17 factors. A 13-factor solution was selected. Table 9 lists the factors that emerged. Development Is Important was the first factor and accounted for 5.6% of the variance. White and Bruning's (2005) Transmissional factor was second, accounting for 4.8% of the variance. White and Bruning's Transactional factor broke apart, chiefly into two new factors, Writing Supports Thinking, which accounted for 4.6% of the variance, and Writing Is a Personal and Emotional Experience, which accounted for 4.3% of the variance. The next three factors—Address Substantive Issues First, Basics (Mechanics) First, and Adapt to the Audience—each accounted for just under 4% of the variance. The following three factors, Mechanical Errors Are Shameful, Writing Is an Innate Gift, and Minimize Revision, each accounted for about 3.5% of the variance. The final three factors, Writing

Table 9

Factor Structure and Reliability Estimates of the Beliefs about Writing Survey and

Subscales, Phase I

Factor	Percentage of Variance Accounted For	Eigenvalue	Cronbach's α
Development Is Important	5.6	3.1	0.726
Transmissional	4.8	2.6	0.632
Writing Supports Thinking	4.6	2.5	0.769
Writing Is a Personal and Emotional Experience	4.3	2.4	0.671
Address Substantive Issues First	3.9	2.1	0.570
Basics (Mechanics) First	3.9	2.1	0.547
Adapt to the Audience	3.8	2.1	0.584
Mechanical Errors Are Shameful	3.6	2.0	0.541
Writing Is an Innate Gift	3.5	1.9	0.569
Minimize Revision	3.5	1.9	0.590
Writing Is an Iterative Process	3.1	1.7	0.554
Write to Impress	3.1	1.7	0.335
Clarity Is Essential	3.0	1.6	0.370

Is an Iterative Process, which also included some of the items in White and Bruning's

Transactional factor; Write to Impress, and Clarity Is Essential, which emerged as a

separate factor from Adapt to the Audience, each accounted for about 3% of the variance.

Two factors did not emerge: Use Plain English and Use Established Formulas and

Formats. The Cronbach's alpha for the entire scale was 0.81, and the Cronbach's alphas

for the subscales ranged from 0.34 to 0.77, with the alphas of most of the subscales below

0.60. Thus, although the development of this scale seemed promising, more work needed

to be done to strengthen the psychometric properties of the subscales. This became the

goal of Phase II of this research project.

Phase II

The purpose of Phase II of this study was to strengthen the reliability of the subscales of the Beliefs about Writing Survey by adding additional items (see Table 10). Use Plain English was retained as a factor because of its theoretical importance. One item of the Use Established Formulas and Formats was also retained. The amended scale had 79 items.

Method

The participants were 286 undergraduates in six sections of an educational psychology class that preservice teachers at the university were required to take. The participants were similar to those who participated in Phase I of this research project: 80% were women, 11% were men, and 10% did not indicate their gender. With respect to race, 62% were Hispanic, 14% were white, 9% were Black, 2% were Asian, 2% identified themselves as "other," and 10% did not answer the question.

The students took version 2 of the Beliefs about Writing Survey and a survey of demographic information for extra credit in 10 to 20 minutes of class time after they learned about their writing assignment and saw the video they were to analyze. No one refused to participate. As with Phase I, a PCA with varimax rotation was run to examine the underlying structure of this scale and thereby provide evidence of construct validity. Cronbach's alphas were used to assess the reliability of the overall scale and the subscales.

Results

The analyses indicated that the psychometric properties of the Beliefs about Writing Survey did become stronger. The scree plot associated with the PCA pointed to a

Table 10

Revised Beliefs about Writing Survey

Transmissional   • Good writers include a lot of quotes from authorities in their writing.[WB]   • Writing's main purpose is to give other people information.[WB]   • Writing should focus on the information in books and articles.[WB]   • The key to successful writing is accurately reporting what authorities think.[WB]   • The most important reason to write is to report what authorities think about a subject.[WB]   • Good writers stick closely to the information they have about a topic.[WB]
Writing Supports Thinking   (New factor that emerged from the White & Bruning Transactional subscale)   • Writing helps me understand better what I'm thinking about.[WB]   • Writing helps me see the complexity of ideas.[WB]   • My thoughts and ideas become more clear to me as I write and rewrite.[WB]   • Writing helps new ideas emerge.*
Writing Is a Personal and Emotional Experience   (New factor that emerged from the White & Bruning Transactional subscale)   • Writing is a process involving a lot of emotion.[WB]   • It's important to develop a distinctive writing style.[WB]   • Writing often involves peak experiences.[WB]   • Writers' views should show through in their writing.[WB]   • Writing is often an emotional experience.[WB]   • Writers need to immerse themselves in their writing.[WB]
Writing Is an Innate Gift   • The ability to write is a gift that some people have and some people don't.   • Some people just know how to write.   • Writers are born, not taught.   • Some people just have a talent for writing.*   • Some people won't write well no matter how hard they work.*
Basics (Mechanics) First   • Students need to master the basics of writing—grammar, punctuation, and spelling—before they learn to write anything complex.   • Writers should focus first and foremost on the basics—spelling and grammar.   • Students need to be good at grammar before they can write.*   • Students can't really learn to write until they've mastered the punctuation rules.*

Table 10 continued

Address Substantive Issues First   ▪ Writers shouldn't worry about spelling and grammar until they are sure they've made their main points.   ▪ While drafting, one should focus on getting one's ideas on paper and worry about spelling and mechanics later.   ▪ Grammar is important, but it is not as essential as the point the writer is trying to make.   ▪ Good writers focus on the "big picture" before worrying about spelling and grammar.*   ▪ Good writers take care of the big issues—making their points, being clear—before they take care of the details.*
Writing Is an Iterative Process   ▪ Writing requires going back over it to improve what has been written.^{WB} ▪ Good writing involves editing many times.^{WB} ▪ I always feel that just one more revision will improve my writing.^{WB} ▪ When revising, writers should first go back to their notes and make sure that they met the substantive requirements.   ▪ During revision, one should carefully check one's manuscript for both substantive and mechanical problems.   ▪ Writing is a process of reviewing, revisioning, and rethinking.*   ▪ Revision is a multi-stage process.*   ▪ The key to good writing is revising.*
Minimize Revision   ▪ A primary goal of writing should be to have to make as few changes as possible.^{WB} ▪ Revision is necessary only if the writer doesn't plan and draft carefully.   ▪ Good writers write it right the first time.   ▪ If you plan your document well, you won't have to revise.   ▪ Good writers don't need to revise.*   ▪ Skillful writers don't revise much.*   ▪ As you improve as a writer, you revise less.*
Write to Impress   ▪ Good writers demonstrate the breadth of their vocabularies by using a lot of big words.   ▪ Good writers demonstrate their skill at crafting complex sentences.   ▪ Readers are impressed by big words.   ▪ Good writers have sophisticated vocabularies.*
Use Plain English   ▪ Good writing has simple sentences, nothing fancy.   ▪ Good writing sounds natural, not stiff.   ▪ Good writers don't let their choice of words overshadow their message.   ▪ It's best to use simple, straightforward words.*   ▪ It's best to use plain English.*   ▪ Good writers use plain language.*

Table 10 continued

Adapt to the Audience

▪   Good writers are sensitive to their readers.
     ▪   Good writers adapt their message to their readers.
     ▪   Good writers are oriented toward their readers.
     ▪   It's important to select the words that suit your purpose, audience, and occasion.
     ▪   Good writers keep their audience in mind.*
     ▪   Good writers don't confuse their readers.*
     ▪   Good writers are reader-friendly.*
     ▪   Good writers anticipate and answer their audience's questions.*

Clarity Is Essential
 (New factor that split off from Adapt to the Audience/Be Clear)
     ▪   Good writers make complicated information clear.
     ▪   Good writers use the sentence structure that best conveys their ideas.
     ▪   The key to good writing is conveying information clearly.*

Development Is Important
     ▪   Good writers thoroughly explain their opinions and findings.
     ▪   One of the most important things about writing is the quality of the thinking it conveys.
     ▪   Good writers are logical and convincing.
     ▪   Good writers support the points they're trying to make.*
     ▪   Good writers support their points effectively.*

Mechanical Errors Are Shameful
     ▪   You can ruin a brilliant paper with just a few grammatical errors.
     ▪   There's no excuse for misspellings and punctuation errors.
     ▪   Papers with grammatical and spelling mistakes are embarrassing.*
     ▪   Papers with typos are a terrible embarrassment.*
     ▪   It's humiliating to give a PowerPoint presentation with typos and misspellings.*

Note: WB = from the original White & Bruning (2005) scale

     * designates a new item

12-factor solution. However, a 14-factor solution that included all the factors theorized

was selected. Table 11 lists these factors, the percentage of the variance accounted for,

the eigenvalues, and the Cronbach's alphas of the subscales. The Cronbach's alpha for

the entire scale was 0.87. The reliability estimates of the subscales ranged from 0.61 to

0.80, with 8 out of 14 exceeding the 0.7 minimum researchers prefer (Hair, Anderson,

Tatham, & Black, 1998; Nunnally, 1967).

Table 11

Factor Structure and Reliability Estimates of the Beliefs about Writing Survey and

Subscales, Phase II

Factor	Percentage of Variance Accounted For	Eigenvalue	Cronbach's α, Phase I	Cronbach's α, Phase II
Minimize Revision	4.5	3.5	0.59	0.76
Writing Supports Thinking	4.2	3.3	0.77	0.80
Adapt to the Audience	3.8	3.0	0.58	0.78
Importance of Plain English	3.7	2.9	NA	0.71
Mechanical Errors Are Shameful	3.7	2.9	0.54	0.77
Development Is Important	3.7	2.9	0.73	0.74
Transmissional	3.3	2.6	0.63	0.65
Writing Is an Innate Gift	3.3	2.6	0.57	0.72
Writing Is an Iterative Process	3.1	2.5	0.55	0.79
Address Substantive Issues First	3.1	2.4	0.57	0.66
Write to Impress	2.9	2.3	0.34	0.67
Basics (Mechanics) First	2.9	2.3	0.55	0.70
Writing Is a Personal and Emotional Experience	2.7	2.1	0.67	0.61
Clarity Is Essential	2.3	1.8	0.37	0.62

Phase III

The third phase of this research project used the instruments developed in the first two phases to investigate the relations among the independent variables, beliefs about writing, writing self-efficacy, and writing apprehension, and their influence on writing performance. Specifically, as discussed in Chapter I, the research questions for this study were:

1. What is the relation between beliefs about writing, writing self-efficacy, writing apprehension, and writing performance?

2. What are the unique contributions of beliefs about writing, writing self-efficacy,

    and writing apprehension to writing performance?

Research Design

This study had a basic correlational design (Gall, Borg, & Gall, 1996). One

principal advantage of the correlational method is that it permits the simultaneous

analysis of relationships among a large number of variables in a single study.

Correlational research also "permits the free variation of [the] variables of interest so that

the degree of relationship between them can be determined without the loss of

information inherent in the experimental design" (p. 127). A hierarchical regression

analysis was used to determine the unique variance and effect explained by beliefs about

writing, writing self-efficacy, and writing apprehension in predicting writing performance

in a classroom context (Cohen & Cohen, 1983).

Method

Participants

The participants for this investigation were undergraduates enrolled at a large,

research-intensive, public urban university in south Florida. The participants were

students in 11 sections of an educational psychology course that was required for teacher

candidates. The course was also a popular elective among psychology majors. Each

section had between 40 and 60 students. The participants thus represented the

undergraduate student body of the College of Education. They received extra credit for

participating in the study. There were several reasons for the selection of undergraduates

as the population of interest in this investigation. First, many students receive

considerable practice and instruction in writing as undergraduates. Learning more about

undergraduate writing would facilitate the development of writing instruction for this population. Second, the use of undergraduates as participants facilitates comparison with and the extension of much of the existing research. The earliest research on writing self-efficacy (McCarthy et al., 1985; Meier et al., 1984; Shell et al., 1989) as well as a number of later studies (Pajares & Johnson, 1994; Rankin et al., 1993; Zimmerman & Bandura, 1994) involved undergraduates. The participants in the proposed study were likely highly similar to those who participated in the first two phases of the study.

Sample Size

Tabachnick and Fidell (2001) noted that a number of factors influence the sample size required to examine research questions adequately. However, they suggested that a useful rule of thumb is $N \geq 50 + 8m$ (where m is the number of independent variables) for testing the multiple correlation and $N \geq 104 + m$ for testing individual predictors. In this study, there were three independent variables (beliefs about writing, writing self-efficacy, and writing apprehension), with a 14, 3, and 3 subscales, respectively. Because the various beliefs about writing may be adaptive or maladaptive, these subscales cannot be summed into an overall variable. Thus, according to Tabachnick and Fidell's guidelines, at least 210 responses were needed to test the multiple correlations, and 124 responses were required to test the individual predictors. Thus, for the purposes of this investigation, I set a target of more than 210 undergraduate students. Further, because approximately two-thirds of the participants in each of the earlier phases were Hispanic women, Phase III of this study focused on this group. This step was taken for two reasons: first, to avoid possible confounding influences of gender and race/ethnicity on the dependent variable, and second, to ensure a sufficient sample size for the statistical

analyses needed to answer the research questions (increase statistical power). First, I designed the study to control for possible demographic confounds identified by the literature (e.g., Pajares et al., 1999; Pajares & Valiante, 1999) by limiting the research sample to one type of participant (Hispanic females).This step facilitated interpretation of the statistical analyses. Second, if I collected data as in the study's prior two phases, one third of the sample of 210 would be non-Hispanic and male. The resulting sample may have been inadequate for running the statistical analyses required to fully explore the data and answer the research questions, particularly because the cell sizes may have been too small for running ANOVAs and MANOVAs.

The Institutional Review Board at the university at which the study was conducted granted permission to run the study in 2007 based on the preliminary list of survey instruments discussed above. Approval was also obtained from the Human Subjects Committee at the University of Maryland before the Phase III data were collected.

Instruments

Participants were asked to provide relevant background information. The survey asked each participant to indicate age, class standing in school (e.g., junior, senior), and major. The demographic survey is presented in Appendix B. To assess the independent variables, the test battery included three pencil-and-paper measures that were examined and revised in Phases I and II of this study: the Beliefs about Writing Survey, the modified Writing Self-Regulatory Efficacy Scale, and the modified WAT. The revision of all three of these measures was discussed in detail earlier in this chapter.

Beliefs About Writing Survey. The original White and Bruning (2005) inventory contained 19 items and included two subscales: Transmissional Beliefs (e.g., "The key to successful writing is accurately reporting what authorities think") and Transactional Beliefs (e.g., "Writers need to immerse themselves in their writing"). Additional items were added to create the following additional subscales to reflect the research literature or expert writing and editing practice: Minimize Revision (e.g., "Skillful writers don't revise much"), Adapt to the Audience (e.g., "Good writers are oriented toward their readers"), Use Plain English (e.g., "Good writers use plain language"), Mechanical Errors Are Shameful (e.g., "Papers with typos are a terrible embarrassment"), Development Is Important (e.g., "Good writers support the points they're trying to make"), Writing Is an Innate Gift (e.g., "Some people just know how to write"), Writing Is an Iterative Process (e.g., "Good writing involves editing it many times"), Address Substantive Issues First (e.g., "While drafting, one should focus on getting one's ideas on paper and worry about spelling and mechanics later"), Write to Impress (e.g., "Readers are impressed by big words"), Basics (Mechanics) First (e.g., "Students need to be good at grammar before they can write"), and Clarity Is Essential (e.g., "The key to good writing is conveying information clearly"). A PCA revealed that White and Bruning's Transactional subscale split into two subscales: Writing Supports Thinking (e.g., "Writing helps me understand better what I'm thinking about") and Writing Is a Personal and Emotional Experience (e.g., "Writing is a process involving a lot of emotion"). The Cronbach's α was 0.87 for the entire scale and ranged from 0.61 to 0.80 for the subscales, with 8 out of 14 over the 0.7 minimum researchers prefer (Hair et al., 1998; Nunnally, 1967). The final scale has

77 items and 14 subscales. Participants responded to the items on a 1-5 Likert-type scale (1 = disagree strongly; 5 = agree strongly).

Modified Writing Self-Regulatory Efficacy Scale. Zimmerman and Bandura's (1994) original Writing Self-Regulatory Efficacy Scale contained 25 items. Thirty-five additional items were added to reflect the five subscales of the rubric that were used to grade the students' writing (Development, Clarity, Organization, Language, and Grammar) and a number of key writing processes. Participants indicated their confidence that they could perform the task described by making a hash mark on a scale marked 0 (certain <u>cannot</u> do) to 100 (certain <u>can</u> do) on a 10-mm line. I measured the distance of the hash mark from the beginning (0 point) of the line to determine the student's score for each item. PCA with varimax rotation revealed that the amended scale has three factors. The first factor, Substantive, includes the first four subscales of the scoring rubric— Development, Clarity, Organization, and Language—as well as the items from the original scale that assessed similar issues and executive control over the writing process (e.g., "When I get stuck writing a paper, I can find ways to overcome the problem").

The second factor was comprised of most of the items from the Zimmerman and Bandura scale, primarily those describing elements of typical writing projects (e.g., "When my paper is written on a complicated topic, I can come up with a short, informative title"). The third and final factor, Mechanical, includes items describing local issues (e.g., "I can write a simple sentence with proper punctuation and grammatical structure"), some from the original Zimmerman and Bandura scale. The Cronbach's alphas were 0.98 for the entire scale, 0.98 for the Substantive subscale, 0.94 for the items from the Zimmerman and Bandura scale that formed the second factor, and 0.93 for the

Mechanical subscale. An item in the survey packet also asked the participants to predict the grade they would receive on their paper.

Modified Writing Apprehension Test. Three items were added to Daly and Miller's WAT (1975b) to reflect apprehension about making a mechanical error, such as an error in grammar, punctuation, or spelling, to create a total of 29 items. Participants indicated their agreement with these items on a five-point Likert-type scale (1 = disagree strongly, 5 = agree strongly). The PCA with varimax rotation of the modified WAT conducted in Phase I yielded a three-factor solution: Dislike of Writing, especially the evaluation of one's writing; Enjoyment of Writing and of sharing one's writing with others; and Apprehension About Grammar. The Cronbach's alpha for the entire scale was 0.95, while the Cronbach's alphas for the subscales were 0.91, 0.91 and 0.80, respectively.

The test battery also included a demographic survey that asked participants to indicate their age, gender, race/ethnicity, class standing, and major.

Writing performance. Writing performance was assessed via the grade each participant received on the paper he or she wrote for class. To ensure interrater reliability, two trained researchers, both college instructors experienced in teaching educational psychology, graded each paper. Each of these instructors received and discussed the directions for writing the paper; watched *Preschool in Three Cultures: Japan, China, and the United States* (Tobin et al., ca. 1984), the video that the students saw in class and discussed in the paper; and then reviewed and discussed both the grading rubric and exemplars of typical A, B, C, D, and F papers. After receiving this training, each researcher read every paper, graded it holistically according to the procedures delineated

by Cooper (1977) with a letter grade (A to F, including pluses and minuses), and also graded it on a scale of 1 two 6 according to the rubric criteria. For purposes of the study, the four top rows of the rubric, which were designed to give students specific feedback on their work with respect to the three Florida Educator Accomplished Practices covered by the course (Diversity, Human Learning and Development, and Learning Environments) as well as the student's statement describing his or her own position with respect to the learning theories discussed, were summarized by one grade for educational psychology content. The two graders also assessed each paper for the writing criteria specified in the last five rows of the rubric: Development, Clarity, Organization, Language, and Grammar.

Procedure

The students completed the battery of instruments during class for extra credit after they received and understood their writing assignment but before they had a chance to write it, as Bandura specifies (Pajares, 1997). They were asked to answer the questions with respect to the academic writing that they do at the university. It took them 15 to 35 minutes to complete the survey packet. They were given up to 45 minutes for this purpose.

Data Analysis

The Microsoft Windows version of SPSS 15.0 was used to examine the data. A codebook was developed to represent the coding of the research variables. The data were carefully scrutinized for accurate input and screened by calculating univariate descriptive statistics. The descriptive results were checked for skewness, and kurtosis, variance, standard deviations, and outliers. Irregular values were checked against the data input

sheet for possible input errors and corrected as appropriate. Due to the nature of anxiety data found in earlier studies (e.g., Yerkes & Dodson, 1908; Chamberlain & Hale, 2007), we specifically looked at whether the writing apprehension data were linear or curvilinear.

Outliers were examined as well. First, possible outliers were investigated visually on scatter plots; the Mahalanabis distance for evaluating multivariate outliers were determined.

PCA with varimax rotation was used to examine the psychometric properties of the respective research measures. Measurement scale internal consistencies were ascertained by calculating Cronbach's alphas.

To answer research question 1, "What is the relation between beliefs about writing, writing self-efficacy, writing apprehension, and writing performance?," correlational analyses were used to determine the extent of the relation between the research variables. To answer research question 2, "What are the unique contributions of beliefs about writing, writing self-efficacy, and writing apprehension to writing performance?," a hierarchical regression analysis was used to determine the unique variance explained by beliefs about writing, writing self-efficacy, and writing apprehension, respectively, in predicting the writing performance in a classroom context (Cohen & Cohen, 1983). This analysis was performed for each dependent variable (the holistic score and each of the six rubric scores). The order in which the variables were entered into the regression equation was guided first by the Pajares' group's theory and path-analytic research (Pajares & Johnson, 1996) indicating that writing self-efficacy predicts writing performance and often nullifies the effects of writing apprehension. The

order of entry was also guided by the Palmquist group's (e.g., 1992) findings that beliefs

about writing affect students' assessments of their own writing skills and abilities, and

their confidence in their ability to become proficient in their use of writing skills, which

are both akin to self-efficacy beliefs; their writing apprehension; and their writing

performance. Additional support is provided by White and Bruning's (2005) hierarchical

regression analysis indicating that beliefs about writing predict writing performance, and

their correlational findings linking beliefs about writing to writing self-efficacy and

writing apprehension. Thus, the beliefs about writing scores were entered in the first

block, the writing self-efficacy scores were entered in the second block, and the writing

apprehension scores were entered in the third block of each of the regression equations.

CHAPTER IV

RESULTS

This chapter reports the results of the third phase of this three-part, exploratory,

correlational study. The first two phases, which are described in Chapter III, involved the

development of the measures. This study, the third phase, investigated the relations

among the independent variables—beliefs about writing, writing self-efficacy, and

writing apprehension—and their relation to the dependent variable—writing

performance. The research questions were as follows:

1. What is the relation between beliefs about writing, writing self-efficacy, writing

   apprehension, and writing performance?

2. What are the unique contributions of beliefs about writing, writing self-efficacy,

   and writing apprehension to writing performance?

This chapter describes the participants and the preparation of the data, analyzes and

discusses the measures, and discusses the correlational and hierarchical regression

analyses used to answer the research questions.

Method

Participants

The participants were drawn from 11 sections of an educational psychology

course taught in a large, research-intensive, public university in south Florida. Preservice

teachers at the university were required to take the course; students majoring in other

areas, particularly psychology, sometimes took it as an elective. The participants first saw

the video *Preschool in Three Cultures: Japan, China, and the United States* by Tobin et

al., (ca. 1984) and were briefed about the writing assignment they were to complete, a

five-page analysis of the three schools depicted in the video in light of two of the learning theories they had studied in class. The participants then took a battery of surveys (see Appendix B) for extra course credit, including the Beliefs about Writing Survey, which was developed for this study; a modified version of the Writing Self-Regulatory Efficacy Scale (Zimmerman & Bandura, 1994); a modified version of the Writing Apprehension Test (Daly & Miller, 1975); and a demographics survey in 20 to 30 minutes of class time. (See Chapter III for details on how these surveys were developed and/or modified.) The participants thus took the survey before they had an opportunity to perform the task being studied, as Bandura specifies (Pajares, 1997). No one refused to participate.

A total of 465 students took the survey battery. Their demographic composition was similar to that of the participants in Phases I and II of this research project: 89% were women and 11% were men; 67% were Hispanic, 17% were white, 11% were black, 2% were Asian, and 2% identified themselves as "other" (see Table 12). Because more than 60% of the overall sample was comprised of Hispanic women, this study focused on this group only. This step was taken to avoid possible confounding influences of gender and race/ethnicity on the dependent variable.

A total of 299 Hispanic women took the survey. Twelve were not eligible for inclusion in the final sample: eight because they did not write the paper, two because they did not submit the papers they had written, one because she skipped a major section of the survey, and one because her paper matched too closely to already published text. The final group of 287 participants ranged in age from 19 to 55, with a mean of 23.6 (SD = 5.4). Most were undergraduates, usually juniors (69.3%) or seniors (23.9%). Most (83.6%) were education majors; some (7.0%) were psychology majors. Most of their

Table 12

Demographic Background of the Overall Sample From Which the Participants Were

Drawn

Gender	Ethnicity											
	Asian		Black		Hispanic		White		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Men	1	.0	8	1.7	26	5.6	15	3.2	2	.0	52	11.2
Women	10	2.2	43	9.2	287	61.7	66	14.2	7	1.5	413	88.8
Total	11	2.4	51	11.0	313	67.3	81	17.4	9	1.9	465	100.0

fathers (80.4%) and mothers (83.9%) had at least a high school diploma; 56.4% of their

fathers and 57.1% of their mothers had completed some college study; 27.5% of their

fathers and 29.2% of the mothers had at least a bachelor's degree; and 12.9% of their

fathers and 11.1% of their mothers had earned graduate degrees.

University admissions data for this group of students is not available. However,

students entering the university as freshmen in 2008 had a mean high school grade point

average of 3.7; half of these freshmen had SAT Critical Reading scores that fell between

540 and 620 (Office of Institutionalized Research, n.d.). Students in the College of

Education are more likely to transfer to the university in their junior year from an

institution that was formerly a community college. Their high school grade point

averages and their SAT scores are assumed to be lower than those of the students who

entered the university directly out of high school.

Data Preparation

The data were first scanned for inputting errors. Missing data were replaced with the group mean score on the subscale to which the missing item belonged (Tabachnick & Fidell, 2001). For all variables, missing data were less than five percent of the total. Principal components analysis (PCA) with varimax rotation was then used to study the psychometric properties of the three surveys used to measure the independent variables: the Beliefs About Writing Survey, the modified Writing Self-Regulatory Efficacy Scale, and the Modified Writing Apprehension Test.

Examination of the Measures

Beliefs About Writing Survey

The Beliefs About Writing Survey was this study's measure of beliefs about writing tasks and skills, the processes involved in performing these tasks and skills, as well as various attributes of writing. This survey was comprised of 77 questions, which formed 14 subscales during Phases I and II of this study (see Chapter III). In this study, Phase III of the overall research project, the PCA of this scale yielded a 10-factor solution instead of the 14-factor solution that emerged earlier, with eigenvalues ranging from 7.84 to 2.46. Bartlett's Test of Sphericity ($\chi^2 = 8,307.19$, $p < .001$) and the Kaiser-Meyer-Olin Measure of Sampling Adequacy (.77) both suggested that the sample size and correlation matrix were appropriate for additional analysis. Guided further by the eigenvalue-greater-than-one rule (Kaiser Criterion) and a scree plot analysis, the PCA with varimax rotation produced a 10-factor solution. The Kaiser Criterion, according to which all factors with eigenvalues greater than one are retained, indicated that there were 23 factors; however, the more conservative scree plot test pointed to the 10-factor solution.

An examination of the item loadings (see Table 13) indicated that a number of the original subscales had loaded together. Specifically, Adapt to the Audience, Clarity Is Essential, and Development Is Important loaded together along with four items from the Writing Is an Iterative Process subscale and two items from the Use Plain English subscale. Because all but one of the factors associated with expert processes and perspective loaded on this factor, I named the new factor that emerged from these five subscales "Expert Orientation" (see Table 14).

A second new factor formed from the items in White and Bruning's (2005) Transmissional subscale, which captures the process of basing one's work on that of authorities—using a lot of quotes and sticking to the points made in outside sources—and the items in the Write to Impress subscale, which describes creating a favorable impression on readers by using big words and complex sentence structures (see Table 14). I named this second new factor "Superficial Strategies." Although the writing processes associated with this belief address core issues such as the logic, structure, and content of a paper, they are superficial—supposedly safe rules of thumb, such as following the logic of the arguments published by authorities, stringing quotes together, and sprinkling some big words over the finished product—that do not foster thought or understanding on the part of either the reader or the writer. Writers using these strategies are not primarily concerned about whether their readers comprehend the text or find it easy to read and comprehend; neither are they focused on understanding the content they are discussing. Although writers using these strategies are focused on their readers, it is because these writers are trying to manipulate their readers to create a favorable impression, not to increase their understanding. The remaining eight subscales—

Table 13

Factor Loadings for Principal Components Analysis with Varimax Rotation of the Beliefs About Writing Survey

Item	Expert Orientation	Superficial Strategies	Supports Thinking	Minimize Revision	Errors Are Shameful	Plain English	Innate Gift	Substantive First	Emotional Experience	Basics First
48	**.65**	.05	.12	-.03	.05	.10	-.05	.10	-.01	.01
58	**.63**	.11	.04	-.09	.12	.14	-.06	.10	.08	-.18
60	**.63**	.05	.07	-.02	.03	-.02	-.06	.16	.21	.10
76	**.63**	-.01	-.02	-.01	.07	.03	.10	.13	.01	-.01
37	**.62**	.03	-.04	-.20	.07	-.06	-.09	.03	.02	.11
47	**.62**	.05	.03	-.13	-.07	.02	-.04	.08	.01	.18
55	**.61**	.00	.08	-.07	.00	.06	-.04	.10	.32	.13
72	**.57**	-.24	.18	.02	.10	.12	.16	.08	.08	.04
27	**.56**	-.00	.27	.00	.11	.02	.02	.08	-.17	-.14
74	**.56**	-.14	.03	-.06	.10	-.04	.01	.01	.08	-.04
68	**.56**	.01	-.18	-.07	.04	.40	-.08	-.07	.12	-.07
56	**.54**	.05	.30	.07	.00	-.11	.02	-.04	.08	.05
43	**.54**	.08	.21	-.05	.02	-.04	.08	.07	-.04	-.00
67	**.53**	-.12	.03	.01	.06	.34	-.14	.11	-.10	.04
31	**.52**	-.02	.03	-.16	-.02	.01	-.07	.08	.17	.25
29	**.51**	.11	.05	-.08	.13	.15	-.02	-.03	.11	-.27
41	**.50**	.12	.12	.04	-.17	.18	.17	.01	-.09	-.16
28	**.47**	.18	.15	-.10	-.01	.09	-.08	.05	-.09	.16
71	**.46**	-.23	.12	-.05	.15	.20	.16	.11	.14	-.01
64	**.45**	-.08	-.10	-.35	.03	-.02	.03	.11	.13	.16
45	**.39**	-.04	.23	-.16	.12	.02	-.02	-.07	.02	.11
50	**.35**	.08	.16	-.37	.12	-.11	-.02	.09	.22	.23
8	-.14	**.66**	-.05	.14	.00	.17	.10	-.05	.02	-.15
4	-.08	**.56**	-.16	.09	.03	.18	-.11	-.02	-.01	-.07

Table 13, continued

5	-.12	**.56**	-.02	.09	.12	.26	.00	-.03	-.02	-.14
59	.09	**.54**	.08	.04	-.01	-.31	.12	-.04	.01	.10
35	.10	**.54**	.10	.11	-.13	-.16	.23	-.07	-.18	.23
25	.19	**.54**	.09	.05	.11	-.20	.14	.05	-.19	.16
1	-.13	**.49**	-.09	.08	.06	-.02	.06	.07	.16	.15
46	.35	**.43**	.17	.18	.03	-.24	.13	.05	-.04	.15
52	.06	**.39**	.13	.16	.06	.18	.03	-.07	-.04	.21
10	.11	**.39**	.09	-.03	-.07	.06	-.14	-.05	.14	.02
2	.06	**.34**	-.17	-.08	.14	.11	-.22	.06	.27	.01
15	.15	-.03	**.76**	.08	.11	-.09	-.13	.04	.10	-.03
13	.18	-.04	**.75**	-.03	.13	.05	-.02	-.08	.09	-.15
16	.17	-.00	**.63**	-.24	.11	-.10	-.05	-.06	.13	.04
26	.33	-.10	**.61**	-.03	.07	-.08	-.02	.01	.05	.07
14	.08	.22	**.49**	-.23	.06	.02	-.09	.11	.14	.17
9	.11	.18	**.37**	-.01	.19	.06	-.04	-.05	.17	-.01
69	.03	.12	.01	**.63**	-.07	-.02	-.06	.01	-.12	.13
63	-.19	.22	.01	**.60**	.01	.06	-.07	.08	.07	.12
36	-.11	.08	-.05	**.59**	.05	.04	.14	.03	.04	.12
49	-.05	.30	-.01	**.57**	.04	.15	.06	-.02	-.03	-.02
22	-.18	.17	-.20	**.50**	.05	-.10	.17	.02	.14	-.03
30	-.11	.12	-.15	**.42**	.09	.14	-.06	.20	.26	.23
39	.05	-.03	.10	-.07	**.80**	.09	.03	.04	-.01	-.02
24	.04	.09	.13	-.00	**.76**	.07	.03	.08	-.13	.05
51	.09	.12	.08	.08	**.64**	-.07	.05	-.22	.03	.08
57	.12	.00	.05	.01	**.63**	-.00	-.11	-.14	.04	.17
70	.14	-.01	.12	-.01	**.59**	.02	.12	.06	.04	.08

Table 13, continued

62	.18	.05	.08	.09	-.02	**.69**	.12	-.05	.08	.01
21	.10	.10	-.06	-.04	.11	**.65**	.19	-.04	.03	-.16
66	.07	.00	-.04	.01	-.08	**.65**	.01	.12	.09	.11
38	.14	.13	-.06	.08	.10	**.64**	.05	-.05	-.04	.09
33	.06	.05	-.13	.06	-.05	.08	**.73**	-.00	-.12	-.02
20	-.08	.10	-.04	-.04	.13	.13	**.70**	.01	.05	-.05
61	.16	-.07	.05	.06	.10	-.03	**.68**	.03	.13	.10
75	-.13	.02	-.07	.12	-.14	.11	**.60**	.10	.08	.26
42	-.12	.10	-.23	.00	.15	.05	**.54**	.27	.12	-.08
40	.17	.01	-.01	.02	.00	.01	.03	**.76**	-.06	-.08
32	.18	.06	.00	.02	-.09	.02	.06	**.61**	-.01	-.21
65	.25	-.09	-.05	.01	.08	-.01	.04	**.57**	-.04	.13
73	-.00	-.10	.16	.06	-.21	.05	.03	**.56**	.13	-.06
54	.31	.09	-.05	-.01	-.02	-.04	.15	**.54**	.07	.07
18	.12	-.06	.18	.03	.00	-.04	.15	.00	**.74**	-.13
7	.04	-.03	.10	-.03	-.09	.07	.15	-.02	**.72**	-.08
17	.18	.11	.11	.03	-.02	.10	-.12	.01	**.51**	.14
19	.30	-.03	.15	-.05	.25	-.07	.10	-.05	**.38**	-.26
12	.20	.17	.27	-.09	-.06	.05	.04	.09	**.34**	.09
34	.20	.03	.06	-.03	.24	-.02	.15	-.09	-.11	**.61**
53	.05	.07	.03	.22	.21	-.02	.02	-.23	.06	**.53**
23	.05	.17	-.12	-.00	.36	.04	.13	-.24	-.10	**.43**
44	-.08	.31	.09	.13	-.01	.14	.05	-.50	.01	**.37**
11	.09	.25	.14	-.45	.10	.21	-.13	.18	-.00	**.34**

77	.18	.25	.11	-.53	.06	.02	.03	.03	.15	**.31**
3	.05	.28	-.35	.25	.11	.06	.14	-.17	.13	-.17
6	.23	.28	.05	-.35	.08	.14	-.08	.01	.11	.29

Note. *N* = 287.

The full names of the factors are Expert Orientation, Superficial Strategies, Writing Supports Thinking, Minimize Revision, Mechanical Errors Are Shameful, Use Plain English, Writing Is an Innate Gift, Address Substantive Issues First, Writing Is a Personal and Emotional Experience, and Basics (Mechanics) First.

Table 14

The New Factor Structure of the Beliefs About Writing Survey

Factors and Items	Loading
Expert Orientation	
(10.18% of the Variance)	
48. Good writers keep their audience in mind. (Audience)	.65
58. Good writers are oriented toward their readers. (Audience)	.63
60. Good writers are logical and convincing. (Development)	.63
76. Good writers anticipate and answer their audience's questions. (Audience)	.63
37. Good writers support their points effectively. (Development)	.62
47. The key to good writing is conveying information clearly. (Clarity)	.62
55. Good writers thoroughly explain their opinions and findings. (Development)	.61
72. Good writers don't let their choice of words overshadow their message. (Plain English)	.57
27. Good writers make complicated information clear. (Clarity)	.56
74. It's important to select the words that suit your purpose, audience, and occasion. (Audience)	.56
68. Good writers are reader-friendly. (Audience)	.56
56. One of the most important things about writing is the quality of the thinking it conveys. (Development)	.54
43. Good writers use the sentence structure that best conveys their ideas. (Clarity)	.54
67. Good writers don't confuse their readers. (Audience)	.53
31. Good writers support the points they're trying to make. (Development)	.52
29. Good writers are sensitive to their readers. (Audience)	.51
41. Good writers adapt their message to their readers. (Audience)	.50
28. When revising, writers should first go back to their notes and make sure that they met the substantive requirements. (Iterative)	.47
71. Good writing sounds natural, not stiff. (Plain English)	.46
64. Revision is a multi-stage process. (Iterative)	.45
45. During revision, one should carefully check one's manuscript for both substantive and mechanical problems. (Iterative)	.39
50. Writing is a process of reviewing, revisioning, and rethinking. (Iterative)	.35
Superficial Strategies	
(5.05% of the Variance)	
8. The most important reason to write is to report what authorities think about a subject.[WB] (Transmissional)	.66
4. Writing should focus on the information in books and articles.[WB] (Transmissional)	.56
5. The key to successful writing is accurately reporting what authorities think.[WB] (Transmissional)	.56

Table 14, continued.

59. Readers are impressed by big words. (Impress)	.54
35. Good writers demonstrate the breadth of their vocabularies by using a lot of big words. (Impress)	.54
25. Good writers have sophisticated vocabularies. (Impress)	.54
1. Good writers include a lot of quotes from authorities in their writing.[WB] (Transmissional)	.49
46. Good writers demonstrate their skill at crafting complex sentences. (Impress)	.43
Writing Supports Thinking (4.46% of the Variance)	
15. Writing helps me see the complexity of ideas.[WB]	.76
13. Writing helps me understand better what I'm thinking about.[WB]	.75
16. My thoughts and ideas become more clear to me as I write and rewrite.[WB]	.63
26. Writing helps new ideas emerge.	.61
Minimize Revision (4.30% of the Variance)	
69. As you improve as a writer, you revise less.	.63
63. If you plan your document well, you won't have to revise.	.60
36. Skillful writers don't revise much.	.59
49. Good writers write it right the first time.	.57
22. Good writers don't need to revise.	.50
30. Revision is necessary only if the writer doesn't plan and draft carefully.	.42
Mechanical Errors Are Shameful (4.18% of the Variance)	
39. Papers with typos are a terrible embarrassment.	.80
24. Papers with grammatical and spelling mistakes are embarrassing.	.76
51. You can ruin a brilliant paper with just a few grammatical errors.	.64
57. There's no excuse for misspellings and punctuation errors.	.63
70. It's humiliating to give a PowerPoint presentation with typos and misspellings.	.59
Use Plain English* (3.71% of the Variance)	
62. Good writers use plain language.	.69
21. It's best to use simple, straightforward words.	.65
66. Good writing has simple sentences, nothing fancy.	.65
38. It's best to use plain English.	.64
Writing Is an Innate Gift (3.70% of the Variance)	
33. Some people just know how to write.	.73
20. The ability to write is a gift that some people have and some people don't.	.70
61. Some people just have a talent for writing.	.68

Table 14, continued.

75. Some people won't write well no matter how hard they work.	.60
42. Writers are born, not taught.	.54
Address Substantive Issues First (3.61% of the Variance)	
40. Writers shouldn't worry about spelling and grammar until they are sure they've made their main points.	.76
32. Good writers focus on the "big picture" before worrying about spelling and grammar.	.61
65. While drafting, one should focus on getting one's ideas on paper and worry about spelling and mechanics later.	.57
73. Grammar is important, but it is not as essential as the point the writer is trying to make.	.56
54. Good writers take care of the big issues—making their points, being clear—before they take care of the details.	.54
Writing Is a Personal and Emotional Experience (3.27% of the Variance)	
18. Writing is often an emotional experience.[WB]	.74
7. Writing is a process involving a lot of emotion.[WB]	.72
Basics (Mechanics) First (3.19% of the Variance)	
34. Students need to master the basics of writing—grammar, punctuation, and spelling—before they learn to write anything complex.	.61
53. Students can't really learn to write until they've mastered the punctuation rules.	.53
23. Students need to be good at grammar before they can write.	.43
44. Writers should focus first and foremost on the basics—spelling and grammar.	.37

Note. WB = from the original White & Bruning (2005) scale; *The items that did not load on Expert Orientation; $N = 287$

Basics (Mechanics) First, Writing is a Personal and Emotional Experience, Writing Is an

Innate Gift, Minimize Revision, the remaining items of Use Plain English, Mechanical

Errors Are Shameful,Address Substantive Issues First, and Writing Supports Thinking—

also emerged (see Tables 13 and 14). Two items that were part of the original Writing Is

an Iterative Process factor did not load in this study and were therefore dropped: item 3,

"A primary goal of writing should be to make as few changes as possible," and item 6,

"Writing requires going back over it to improve what has been written."

The Modified Writing Self-Efficacy Scale

The Modified Writing Self-Regulatory Efficacy Scale was used to assess the participants' writing self-efficacy, their confidence in their ability to perform various writing tasks. This measure consisted of 60 items and three subscales: Self-Efficacy for Substantive Writing Tasks, which addresses overall issues such as organization and development; Self-Efficacy for Mechanical Writing Tasks, which focuses on surface issues such as grammar, spelling, and punctuation; and Self-Efficacy for Self-Regulation in Writing, which assesses one's regulation of oneself while writing and one's self-efficacy with respect to the various tasks involved in writing papers (e.g., finding quotes and references, writing titles, and writing overviews). A PCA with varimax rotation was employed to determine whether the instrument measured the three self-efficacy writing dimensions and consequently validate them for this study.

Bartlett's Test of Sphericity ($\chi^2 = 8{,}307.19$, $p < .001$) and the Kaiser-Meyer-Olin Measure of Sampling Adequacy (.97) suggested that both the sample size and correlation matrix were appropriate for additional analysis. Directed further by the eigenvalue-greater-than-one rule (Kaiser Criterion) and a scree plot analysis, the PCA with varimax rotation produced a three-factor solution, consistent with the three-factor solution seen in Phase I of this overall research project (see Table 15). Thus, the factors were Substantive, Mechanical, and Self-Regulatory Self-Efficacy (eigenvalues 16.27, 10.94, and 10.92, respectively). The first factor accounted for 27.12% of the total variance, the second factor 18.24%, and the third factor an additional 18.20%.

However, seven items of the Self-Regulatory Efficacy subscale either cross-loaded or loaded on factors other than the ones on which they loaded in Phase I. Two

items, item 47, "I can revise my writing to make it better," and item 59, "I can revise my paper to make it easier to read," crossloaded on the Substantive and Mechanical factors and are thus added only to the Total Self-Efficacy score. Three items, item 19, "When I get stuck writing a paper, I can find ways to overcome the problem;" item 20, "I can find ways to motivate myself to write a paper even when the topic holds little interest;" and item 24, "I can find other people who will give critical feedback on early drafts of my paper," loaded on the Mechanical factor. Yet, because these items were part of Zimmerman and Bandura's (1994) original Self-Regulatory Efficacy Scale and because they relate to self-regulation, they were retained in the Self-Regulatory factor. Item 14, "I can locate and use appropriate reference sources when I need to document an important point," loaded on the Mechanical subscale, but was retained in the Self-Regulatory subscale because it pertains to one's ability to complete various writing tasks. Finally, item 34, "I can outline my ideas," was written for the Substantive subscale, but loaded on the Self-Regulatory subscale, which includes items addressing one's ability to complete various writing tasks; this item was thus deleted, leaving a total of 59 items in the scale (see Table 15).

The Modified Writing Apprehension Test

The final measure, the Modified Writing Apprehension Test, assessed the participants' anxiety about writing. This measure consisted of 29 items and three subscales: Enjoyment of Writing and Dislike of Writing, which both focus on general apprehension about or liking of writing and sharing one's written work with others, particularly for evaluation, and Apprehension About Grammar, which relates to one's fear of making mechanical errors involving spelling, grammar, and punctuation. A PCA

Table 15

Factor Loadings for Principal Components Analysis with Varimax Rotation of the Modified Writing Self-Regulatory Efficacy Scale

Item	Substantive	Mechanical	Self-Regulatory
37	**.80**	.30	.27
36	**.77**	.28	.30
49	**.76**	.27	.36
60	**.76**	.24	.35
48	**.75**	.38	.27
58	**.75**	.40	.30
53	**.74**	.24	.35
51	**.74**	.32	.22
52	**.74**	.34	.30
50	**.74**	.31	.29
40	**.72**	.23	.24
57	**.72**	.39	.27
43	**.72**	.34	.34
45	**.72**	.36	.35
39	**.70**	.11	.38
56	**.69**	.41	.35
54	**.69**	.23	.46
38	**.69**	.28	.34
35	**.68**	.36	.26
46	**.66**	.27	.42
32	**.66**	.40	.35
33	**.62**	.37	.37
41	**.55**	.23	.42
31	**.50**	.36	.42
42	.26	**.83**	.20
27	.26	**.80**	.22
23	.17	**.79**	.32
55	.31	**.78**	.26
21	.17	**.76**	.33
30	.39	**.76**	.18
26	.24	**.75**	.13
28	.39	**.69**	.16
44	.38	**.68**	.30
29	.41	**.66**	.20
22	.28	**.61**	.41
2	.26	21	**.71**
3	.28	.21	**.70**
4	.31	.21	**.70**

Table 15, continued

11	.35	.19	**.68**
6	.36	.26	**.65**
8	.06	.03	**.64**
17	.24	.27	**.63**
5	.34	.24	**.63**
16	.22	.17	**.61**
7	.41	.22	**.61**
1	.42	.20	**.60**
25	.32	.31	**.58**
13	.40	.35	**.54**
18	.31	.30	**.54**
12	.34	.46	**.54**
9	.20	.18	**.52**
15	.42	.41	**.50**
10	.44	.43	**.50**
19	.47	.23	**.43**
20	.40	.17	**.39**
14	.34	.41	**.34**
24	.21	.36	**.15**
47	.56	.59	.26
59	.58	.56	.24

Note. N = 287.

with varimax rotation was used to determine whether the instrument measured the three

writing apprehension dimensions and consequently to validate them in this study.

Because a few of the items on the Writing Apprehension Test sound somewhat

like self-efficacy items (e.g., "I expect to do poorly in composition classes even before I

start" and "It's easy for me to write good compositions"), I ran a PCA with varimax

rotation of the two scales. There was no evidence that the items on the scales crossload.

Bartlett's Test of Sphericity (χ^2 = 5,533.12, *p* < .001) and the Kaiser-Meyer-Olin

Measure of Sampling Adequacy (.95) suggested that both the sample size and correlation

matrix were appropriate for additional analysis. Guided additionally by the eigenvalue-

greater-than-one rule (Kaiser Criterion) and a scree plot analysis, the PCA with varimax

rotation produced a three-factor solution. Consequently, the PCA with varimax rotation

indicated the same factor structure with this sample of Hispanic women as that which emerged in Phase I of this overall study (see Table 16). However, item 2, "I have no fear of my writing being evaluated," which is part of the Enjoyment of Writing Subscale, did not load on this factor, perhaps because of the double negative in the item; however, this item did load negatively on the Dislike of Writing subscale. The item was retained to facilitate comparison with other studies using this scale (see Table 14). The factors were Dislike of Writing, Enjoyment of Writing, and Apprehension About Grammar (eigenvalues 7.86, 6.23, and 2.81, respectively). The first factor accounted for 27.10% of the total variance, the second factor 21.47%, and the third factor an additional 9.68%.

Reliability of the Measures

To ensure that the scales used in the study were reliable measures, the internal consistency of the measures was examined by computing the Cronbach's alpha for each of the subscales with this sample of Hispanic women (see Table 17). The Cronbach's alphas for the Beliefs About Writing Survey's 10 subscales ranged from .68 to .90. A number of items were removed from some of the subscales to increase their reliabilities. Two items from the original White and Bruning (2005) Transmissional subscale were removed from the new Superficial Strategies subscale: item 2, "Writing's primary purpose is to give other people information," and item 10, "Good writers stick closely to the information they have about a topic." Two items were removed from the Writing Supports Thinking subscale: item 9, "It's important to develop a distinct writing style," and item 14, "I always feel that just one more revision will improve my writing." One item was removed from the Minimize Revision subscale: item 3, "A primary goal of writing should be to have to make as few changes as possible." Three items were

Table 16

Factor Loadings for Principal Components Analysis with Varimax Rotation of the

Modified Writing Apprehension Test

Item	Dislike of Writing	Enjoyment of Writing	Apprehension About Grammar
4	**.74**	-.13	.14
14	**.72**	-.22	.32
5	**.71**	-.26	.07
20	**.71**	-.21	.13
29	**.69**	-.40	.15
24	**.68**	-.22	.21
1	**.64**	-.44	.03
26	**.64**	-.32	.11
18	**.64**	-.24	.19
23	**.60**	-.24	.13
28	**.60**	-.28	.24
7	**.46**	-.36	.16
9	**.44**	-.33	-.10
21	-.28	**.80**	.04
11	-.25	**.76**	-.04
22	-.22	**.75**	-.15
10	-.21	**.74**	-.15
19	-.46	**.73**	.05
17	-.51	**.72**	.02
13	-.01	**.63**	-.27
3	-.47	**.60**	-.09
16	-.35	**.57**	.07
12	-.56	**.50**	-.14
6	-.51	**.49**	-.13
25	-.58	**.41**	-.16
2	-.62	**.10**	-.18
15	.27	-.09	**.88**
27	.18	-.07	**.85**
8	.26	-.04	**.85**

Note. N = 287.

Table 17

Reliability Coefficients for the Subscales of the Beliefs About Writing Survey, the Modified Writing Self-Regulatory Efficacy Scale, and the Modified Writing Apprehension Test

	Cronbach's α	No. Items
Beliefs About Writing		
The "Basics" (Mechanics) First	.68	4
Writing Is a Personal and Emotional Experience	.77	2
Expert Orientation	.90	22
Superficial Strategies	.74	8
Writing Is an Innate Gift	.74	5
Minimize Revision	.71	6
Use Plain English	.73	4
Mechanical Errors Are Shameful	.79	5
Substantive Issues First	.71	5
Writing Supports Thinking	.79	4
Writing Self-Efficacy		
Substantive	.98	24
Mechanical	.96	11
Self-Regulatory	.95	23
Total	.99	60
Writing Apprehension		
Enjoyment of Writing	.92	13
Dislike of Writing	.92	13
Apprehension About Grammar	.89	3

Note. N = 287.

removed from the Writing Is a Personal and Emotional Experience subscale: item 12, "Writing often involves peak experiences," item 17, "Writers' views should show through in their writing," and item 19, "Writers need to immerse themselves in their writing." Finally, two items were removed from the Writing Is an Iterative Process subscale: item 11, "Good writing involves editing many times" and item 77, "The key to good writing is revising." Eliminating these 10 items as well as the two items that did not load left 65 items in the Beliefs about Writing Survey. Table 14 displays the items in this measure as it now stands.

The Cronbach's alphas for the Modified Self-Regulatory Efficacy Scale ranged from .95 to .98 for the three subscales, and .99 for the total scale. Finally, the Cronbach's alphas for the three subscales of the Modified Writing Apprehension Test ranged from .89 to .92. Thus, the Cronbach's alphas for all of the subscales reached the minimum of .65 established for group prediction (Hair et al., 1998; Nunnally, 1967).

Writing Performance

Writing performance was assessed via the grade the students received on the papers they wrote analyzing the video *Preschool in Three Cultures*. Two graders, each of whom has taught at the college level for at least seven years, scored these papers. One of the graders, the instructor for many of the classes included in the sample, formerly worked as a professional writer/editor and writing instructor, and designed the scoring rubric. The second instructor was briefed thoroughly about the grading process and the grading rubric. After the briefing, two exemplars of "A," "B," "C," "D," and "F" papers were presented and discussed with the second grader. Ten additional papers were then scored by both instructors and discussed. Scores were not revised after discussion. The papers were given overall grades from A to F with pluses and minuses. The mean of the two graders' scores was used in this study. The graders also assessed six components of these papers—Content, Development, Clarity, Organization, Language, and Grammar— on a scale of 1 to 6, with 1 and 2 being Unacceptable, 3 and 4 being Acceptable, and 5 and 6 being Target. A correlation analysis was employed to compute the inter-rater reliability, as directed by Gay (1992). The correlation between the overall grades given by the two graders was .96. The correlations between the component scores given by the two graders were .88 for the Content score, .90 for the Development score, .95 for the

Clarity score, .93 for the Organization score, .92 for the Language score, and .90 for the Grammar score.

Descriptive Statistics

The means and standard deviations of the participants' scores on the subscales of the surveys, as modified, are presented in Table 18, and the means and standard deviations of the participants' grades on their papers are summarized in Table 19. As mentioned above, the papers were given overall grades ranging from A to F with pluses and minuses. The mean overall grade was B- (8.1). To put these grades in perspective, recall that the College of Education at the university where the study was conducted maintains that students must earn at least a C (6.0) on this paper to pass the course. The graders also assessed the six components of these papers—Content, Development, Clarity, Organization, Language, and Grammar, which were described on the grading rubric that the students received before they wrote their papers—on a scale of 1 to 6. The Content score was the highest component score, which indicates that the students understood the learning theory they had studied and were able to apply this theory to the schools they observed in the video. The scores for most of the substantive components (Development, Clarity, and Organization) were higher than the scores for the more mechanical components (Language and Grammar), which means that the students' ability to fashion an argument and organize their papers may have been more developed than their writing mechanics. This may have been due in part to the scaffolding students received with respect to the development and organization of these papers (see rubric and Chapter III). The Grammar and Language scores were the lowest scores, indicating that many of the students struggled with writing mechanics. Although the Language score

Table 18

Means and Standard Deviations of the Subscales of the Beliefs About Writing Survey, the Modified Writing Self-Regulatory Efficacy Scale, and the Modified Writing Apprehension Test

	M	*SD*
Beliefs about Writing		
Basics (Mechanics) First	11.9	2.9
Writing Is a Personal and Emotional Experience	7.5	1.6
Expert Orientation	89.4	10.3
Superficial Strategies	23.0	5.0
Writing Is an Innate Gift	15.6	3.8
Minimize Revision	11.2	3.3
Use Plain English	12.1	2.9
Mechanical Errors Are Shameful	15.6	4.4
Substantive Issues First	17.3	3.2
Writing Supports Thinking	16.7	2.6
Writing Self-Efficacy		
Substantive	1,692.3	406.6
Mechanical	1,269.5	350.8
Self-Regulatory	776.5	238.6
Total	3,885.8	957.8
Writing Apprehension		
Enjoyment of Writing	40.5	10.0
Dislike of Writing	31.1	10.3
Apprehension About Grammar	9.1	3.4

Note. N = 287.

addresses the overall tone of the paper as well as the appropriateness and sophistication of the vocabulary and sentence structure, this score also reflects word usage and garbled constructions, which, in this study, made these scores relatively low. In cases where the Language and Grammar scores were both low, the Clarity of the papers also suffered, making this score lower than the other substantive scores.

Table 19

Means and Standard Deviations of the Overall Grade and the Component Writing Scores

	M	*SD*
Overall Grade	8.1	2.8
Component Scores		
Content	4.4	1.1
Development	4.1	1.5
Clarity	3.8	1.6
Organization	4.3	1.4
Language	3.5	1.6
Grammar	3.6	1.5

Note. N = 287.The overall grade is a letter grade from A to F (with pluses and minuses). The component scores were on a scale of 1 to 6, with 1 and 2 being Unacceptable, 3 and 4 being Acceptable, and 5 and 6 being Target; *The mean overall score, 8.1, is equivalent to a B-.

Analyses

Research Question 1: What is the relation between beliefs about writing,

writing self-efficacy, writing apprehension, and writing performance?

The answer to Research Question 1 was obtained by computing and analyzing the

Pearson correlations between the subscales of each of the variables: beliefs about writing,

writing self-efficacy, writing apprehension, and writing performance. These correlations

are presented in Table 20.

Correlations Between the Independent Variables

An inspection of the correlation matrix indicates that a number of the independent

variables were statistically significantly correlated with each other.

Beliefs about writing: Beliefs about writing theorized to be adaptive. Five of the

ten Beliefs About Writing—Expert Orientation, Substantive Issues First, Use Plain

English, Writing Is a Personal and Emotional Experience, and Writing Supports

Table 20

Correlations Between Beliefs About Writing, Writing Self-Efficacy, Writing Apprehension, and Overall Writing Performance

	Overall Grade	Beliefs About Writing										Writing Self-Efficacy				Writing Apprehension		
		Basics First	Emotional	Expert Orient	Super-ficl	Innate Gift	Minimze Revisn	Plain Engl	Errors Shame	Substntve First	Supports Thinking	Substant	Mechan	Self-Reg	Total	Enjoy Writing	Dislike Writing	App Grammar
Overall Grade	--																	
Basics First	-.11	--																
Emotional	-.08	-.07	--															
Expert Orientation	.17**	.08	.17**	--														
Superficl Strategies	-.25**	.32**	-.06	.04	--													
Innate Gift	-.08	.10	.13*	-.01	.15**	--												
Minimize Revision	-.13*	.15*	-.03	-.22**	.34**	.17**	--											
Plain English	.01	.09	.07	.24**	.10	.17**	.10	--										
Errors Shameful	.05	.32**	-.01	.20**	.11	.06	.03	.09	--									
Substantive First	.01	-.19**	.13*	.28**	.02	.39**	.04	.13*	-.01	--								
Supports Thinking	.03	.03	.22**	.38**	-.00	-.16**	-.18**	-.04	.24**	.01	--							
SE Substantive	.18**	-.02	.11	.36**	-.07	-.20**	-.14*	-.04	-.03	.06	.35**	--						
SE Mechanical	.24**	.01	.10	.28**	-.04	-.15*	-.10	-.09	.10	-.03	.36**	.74**	--					
SE Self-Regulatory	.17**	-.00	.07	.28**	-.06	-.18**	-.12	-.07	.01	-.00	.40**	.84**	.72**	--				
SE Total	.20**	-.01	.11	.34**	-.07	-.20**	-.14*	-.07	.01	.02	.40**	.96**	.85**	.94**	--			
Enjoy Writing	.16**	-.09	.15*	.16**	-.12*	-.29**	-.07	-.19**	.04	-.08	.52**	.60**	.56**	.68**	.67**	--		
Dislike Writing	-.18**	.07	-.06	-.14*	.15*	.30**	.11	.19**	.02	.15*	-.42**	-.60**	-.57**	-.62**	-.65**	-.77**	--	
App Grammar	-.25**	.08	.07	.10	.08	.05	-.03	.07	.08	.04	-.02	-.20**	-.45**	-.24**	-.28**	-.29**	.44**	--

Note. * = $p < .05$; ** = $p < .01$; $N = 287$

The full names of the factors are as follows: Beliefs About Writing—Basics (Mechanics) First, Writing Is a Personal and Emotional Experience, Expert Orientation, Superficial Strategies, Writing Is an Innate Gift, Minimize Revision, Use Plain English, Mechanical Errors Are Shameful, Substantive Issues First, and Writing Supports Thinking; Writing Self-Efficacy—Substantive, Mechanical, Self-Regulatory, and Total; and Writing Apprehension—Enjoyment of Writing, Dislike of Writing, and Apprehension About Grammar.

Thinking—were theorized to be adaptive in that they either reflect expert practice, support the writing process, and/or tend to be associated with better grades on writing assignments (see Chapter II). Expert Orientation significantly and positively correlated with all of the adaptive beliefs. This indicates that those who believed that writing should be reader-friendly, well developed, clear, as well as an iterative process were more likely to believe that Writing Supports Thinking ($r = .38$, $p < .01$), that writers should Address Substantive Issues First before fixing mechanical errors during drafting and revision ($r = .28$, $p < .01$), and that writers should Use Plain English ($r = .24$, $p < .01$). By contrast, those subscribing to Expert Orientation beliefs were less likely to have the maladaptive belief that writers should Minimize Revision ($r = -.22$, $p < .01$). It is significant that those who embraced Expert Orientation beliefs also were more likely to have higher writing self-efficacy (Substantive $r = .36$, $p < .01$; Total $r = .34$, $p < .01$; Mechanical $r = .28$, $p < .01$; Self-Regulatory $r = .28$, $p < .01$), which has been a predictor of writing achievement in decades of research (e.g., Pajares & Johnson, 1994).

Together, Writing Supports Thinking and Writing Is a Personal and Emotional Experience formed White and Bruning's (2005) Transactional factor. Transactional beliefs were adaptive in White and Bruning's study, as those upholding this belief had higher writing self-efficacy, were more affectively and cognitively engaged in the writing process, and had higher overall grades on their writing projects as well as higher scores for organization and sentence fluency. They were also more likely to enjoy writing. In this study, items representing these two beliefs did not load together, but the two subscale scores did correlate ($r = .22$, $p < .01$).

Writing Supports Thinking positively and statistically significantly correlated with Expert Orientation ($r = .38$, $p < .01$) and writing self-efficacy (Total $r = .40$, $p < .01$;

Self-Regulatory $r = .40$, $p < .01$; Mechanical $r = .36$, $p < .01$; and Substantive $r = .35$, $p < .01$), indicating that those who believed that Writing Supports Thinking were more likely to try to adapt to their audience, write clearly, develop their written arguments, use plain English, and be confident in their writing skills. It is noteworthy that these students were also more likely to Enjoy Writing ($r = .52$, $p < .01$). Writing Supports Thinking negatively correlated with maladaptive beliefs, including Minimize Revision ($r = -.18$, $p < .01$) and Writing Is an Innate Gift ($r = -.16$, $p < .01$).

The pattern of correlations for Writing Is a Personal and Emotional Experience was less straightforward. This variable significantly and positively correlated with other adaptive beliefs such as Expert Orientation ($r = .17$, $p < .01$) and Address Substantive Issues First ($r = .13$, $p < .05$). Students maintaining this belief also tended to Enjoy Writing ($r = .15$, $p < .05$). However, Writing Is a Personal and Emotional Experience was also significantly and positively correlated with Writing Is an Innate Gift ($r = .13$, $p < .05$), which has been found to be maladaptive (e.g., Palmquist & Young, 1992). This variable had no statistically significant relationship with writing self-efficacy. Thus, of the two factors that comprise White and Bruning's adaptive Transactional factor, Writing Supports Thinking appears to be somewhat more related to the aforementioned adaptive beliefs than Writing Is a Personal and Emotional Experience.

Address Substantive Issues First is the counterpoint to Basics (Mechanics) First, an approach that has been demonstrated to be maladaptive as a strategy for teaching writing in decades of research (e.g., Graham & Perin's recent meta-analysis [2007c], where the effect size for explicit grammar instruction on writing performance was $-.32$). Address Substantive Issues First, which advocates working on substantive tasks such as developing one's argument and anticipating and answering one's readers' questions

before worrying about writing mechanics, is in accord with expert practice (Boston, 1986). However, the correlational pattern of this factor was inconsistent in this study. Address Substantive Issues First positively and significantly correlated with Expert Orientation ($r = .28, p < .01$), an adaptive stance that promotes clarity, development, and an audience orientation; Use Plain English ($r = .13, p < .05$); and Writing Is a Personal and Emotional Experience ($r = .13, p < .05$), which is associated with affective engagement with one's writing. As expected, this belief also significantly and negatively correlated with its maladaptive counterpoint, Basics (Mechanics) First ($r = -.19, p < .01$), which maintains that students should not learn substantive tasks until they have mastered writing mechanics. However, Address Substantive Issues First also positively correlated with the maladaptive Writing Is an Innate Gift ($r = .39, p < .01$). Finally, Address Substantive Issues First was positively linked to the Writing Apprehension Test subscale, Dislike of Writing ($r = .15, p < .05$), indicating that those who embraced this belief were more likely to be apprehensive about having their written work reviewed.

Use Plain English also had an inconsistent pattern of correlations. Two of the original items from this subscale loaded on Expert Orientation, which includes an emphasis on clarity, development, and an orientation toward one's readers. Use Plain English, the remaining four items of the original plain English subscale, did correlate with the adaptive Expert Orientation ($r = .24, p < .01$) and Address Substantive Issues First scale scores ($r = .13, p < .05$). However, this variable also correlated with the maladaptive Writing Is an Innate Gift ($r = .17, p < .01$) and Dislike of Writing ($r = .19, p < .01$), one of the subscales of the Writing Apprehension Test, indicating that writers in this study who advocated the use of plain English were significantly more likely to be apprehensive about submitting their written work for evaluation.

Beliefs about writing: Beliefs about writing theorized to be maladaptive. Four beliefs about writing— Superficial Strategies, Minimize Revision, Writing Is an Innate Gift, and Basics (Mechanics) First—were theorized to be maladaptive in that they are in conflict with expert writing practice or tend to be associated with poor grades on writing assignments. Superficial Strategies is comprised of White and Bruning's (2005) Transmissional factor, which represents writing as a means of transmitting authoritative knowledge to readers with minimal injection of the writers' own views and thoughts, and Write to Impress, which seeks to dazzle readers with big words and complex sentence structures. In this study, Superficial Strategies positively and significantly correlated with other maladaptive beliefs including Minimize Revision ($r = .34$, $p < .01$), Basics (Mechanics) First ($r = .32$, $p < .01$), and Writing Is an Innate Gift ($r = .15$, $p < .01$). It also positively correlated with Dislike of Writing ($r = .15$, $p < .05$), a subscale of the Writing Apprehension Test that reflects a fear of having one's writing evaluated. Superficial Strategies had no significant relation to writing self-efficacy.

Minimize Revision is the counterpoint to the aspect of Expert Orientation that maintains that writing is an iterative process. Those embracing this view believe that good writers write it right the first time. This belief correlated with other maladaptive beliefs including Superficial Strategies ($r = .34$, $p < .01$), Writing Is an Innate Gift ($r = .17$, $p < .01$), and Basics (Mechanics) First ($r = .15$, $p < .05$). It significantly and negatively correlated with adaptive beliefs including Expert Orientation ($r = -.22$, $p < .01$) and Writing Supports Thinking ($r = -.18$, $p < .01$). Minimize Revision also negatively correlated with writing self-efficacy (Substantive $r = -.14$, $p < .05$; Total $r = -.14$, $p < .05$), indicating that those upholding this belief tended to be less confident in their overall writing skills.

Writing Is an Innate Gift correlated with other maladaptive beliefs including

Minimize Revision ($r = .17$, $p < .01$) and Superficial Strategies ($r = .15$, $p < .01$).

However, it was also related to Address Substantive Issues First ($r = .39$, $p < .01$), Use

Plain English ($r = .17$, $p < .01$), and Writing Is a Personal and Emotional Experience ($r =$

$.13$, $p < .05$). It also significantly and negatively correlated with writing self-efficacy

(Substantive $r = -.20$, $p < .01$; Mechanical $r = -.15$, $p < .01$; Self-Regulatory, $r = -.18$, $p <$

$.01$; Total $r = -.20$, $p < .01$) and writing apprehension (Dislike of Writing $r = .30$, $p <$

$.01$), suggesting that those maintaining this belief are likely to be less confident in all of

their writing skills and more apprehensive about writing.

Finally, Basics (Mechanics) First, which has been found to be maladaptive in

numerous studies as the theoretical basis for strategies for teaching writing (e.g.,

Andrews et al., 2006), correlated with other maladaptive beliefs including Superficial

Strategies ($r = .32$, $p < .01$) and Minimize Revision ($r = .15$, $p < .05$). It also significantly

and negatively correlated with Address Substantive Issues First ($r = -.19$, $p < .01$).

The final belief, Mechanical Errors Are Shameful, was added to the Beliefs About

Writing Survey to align with the items in the new Apprehension About Grammar

subscale of the Writing Apprehension Test, chiefly to see if those who are apprehensive

about making grammatical errors also feel shame about their shortcomings with respect

to writing mechanics. The correlation between this belief and Apprehension About

Grammar was positive ($r = .08$), but not significant, in this study. The other correlations

of Mechanical Errors Are Shameful create an inconsistent pattern. This belief correlated

with the maladaptive Basics (Mechanics) First ($r = .32$, $p < .01$), but also with the

adaptive Writing Supports Thinking ($r = .24$, $p < .01$) and Expert Orientation ($r = .20$, $p <$

$.01$), indicating that those who maintained this belief also tended to believe that writers

who make mechanical errors should be ashamed of themselves. It is noteworthy that Mechanical Errors Are Shameful did not correlate with Apprehension About Grammar ($r = .08$; *NS*). This suggests that those who believed that grammatical errors are shameful did not feel this shame themselves, but thought that others should.

Writing self-efficacy. All of the writing self-efficacy scores—Total Self-Efficacy and the three Self-Efficacy subscales, Substantive, Mechanical, and Self-Regulatory— were highly and significantly intercorrelated. These correlations ranged from a low of .72 ($p < .01$) for the relationship between Mechanical and Self-Regulatory Self-Efficacy to a high of .96 ($p < .01$) for the relationship between Substantive and Total Self-Efficacy.

The beliefs about writing that most highly and positively correlated with writing self-efficacy were Writing Supports Thinking (Self-Regulatory $r = .40, p < .01$; Total $r = .40, p < .01$; Mechanical $r = .36, p < .01$; Substantive $r = .35, p < .01$) and Expert Orientation (Substantive $r = .36, p < .01$; Total $r = .34, p < .01$; Mechanical $r = .28, p < .01$; Self-Regulatory $r = .28, p < .01$). This indicates that those who saw writing as a process through which they could develop their understanding of the content they discuss and increase the soundness and sophistication of their arguments were more likely to be more confident in all of their writing skills, as were those who valued clarity, development, audience orientation, and an iterative approach to writing.

On the other hand, Writing Is an Innate Gift (Substantive $r = -.20, p < .01$; Total $r = -.20, p < .01$; Self-Regulatory $r = -.18, p < .01$; Mechanical $r = -.15, p < .05$) negatively correlated with writing self-efficacy, which means that those who believed that Writing Is an Innate Gift tended to lack confidence in their writing skills. This suggests that those who embraced a belief in Innate Writing Skills believed that others may have such innate skills, but that they themselves do not. In addition, those who believed that skillful

writers do not revise much were less likely to be confident in their writing skills

(Substantive $r = -.14$, $p < .05$; Total $r = -.14$, $p < .05$).

As in other studies (e.g., Pajares et al., 2000), high writing self-efficacy negatively

correlated with writing apprehension. Those with high writing self-efficacy were

significantly more likely to Enjoy Writing (Self-Regulatory $r = .68$, $p < .01$; Total $r = .67$,

$p < .01$; Substantive $r = .60$, $p < .01$; Mechanical $r = .56$, $p < .01$), and they were

significantly less likely to be Apprehensive About their Grammar skills (Mechanical $r =$

$-.45$, $p < .01$; Total $r = -.28$, $p < .01$; Self-Regulatory $r = -.24$, $p < .01$; Substantive $r =$

$-.20$, $p < .01$).

Writing apprehension. As for the Writing Apprehension Test, Enjoyment of

Writing and Dislike of Writing were statistically significantly and negatively correlated (r

$= -.77$, $p < .01$). This was as expected because Daly and Miller (1975) wrote these two

subscales to be polar opposites of the same factor. Enjoyment of Writing was

significantly and negatively correlated with Apprehension About Grammar ($r = -.29$, $p <$

.01), indicating that those who enjoyed sharing their writing with others tended not to be

apprehensive about their mechanical writing skills. On the other hand, Dislike of Writing

and Apprehension about Grammar were significantly and positively correlated at ($r = .44$,

$p < .01$), which suggests that those who were apprehensive about having others read and

evaluate their written work were also more likely to be anxious about their mechanical

writing skills.

The beliefs about writing positively associated with Dislike of Writing,

apprehension about letting others read and review one's written work, were Writing Is an

Innate Gift ($r = .30$, $p < .01$), Use Plain English ($r = .19$, $p < .01$), Superficial Strategies (r

$= .15$, $p < .05$), and Address Substantive Issues First ($r = .15$, $p < .05$). By contrast, the

beliefs correlating with Enjoyment of Writing, pleasure in sharing one's written work with others, were Writing Supports Thinking ($r = .52, p < .01$), Expert Orientation ($r = .16, p < .01$), and Writing Is a Personal and Emotional Experience ($r = .15, p < .05$). Writing Supports Thinking ($r = .52, p < .01$) was the variable with the highest correlation to Enjoyment of Writing. This indicates that those who tended to be cognitively engaged with writing enjoyed writing more. Similarly, the correlation between Enjoyment of Writing and Writing Is a Personal and Emotional Experience ($r = .15, p < .05$) suggests that those who were affectively engaged with their writing were more likely to enjoy writing. Interestingly, none of the beliefs about writing correlated significantly with Apprehension About Grammar.

As in previous studies (e.g., Pajares et al., 1999), writing apprehension negatively correlated with writing self-efficacy. Confidence in one's substantive and self-regulatory writing skills, such as developing one's ideas and regulating one's writing process, were stronger correlates of writing enjoyment than confidence in one's mechanical writing skills, such as spelling correctly and using appropriate punctuation (Self-Regulatory $r = .68, p < .01$; Total $r = .67, p < .01$; Substantive $r = .60, p < .01$; Mechanical $r = .56, p < .01$). Writing self-efficacy, especially self-efficacy for Mechanical writing skills, was negatively related to Apprehension About Grammar (Mechanical $r = -.45, p < .01$; Total $r = -.28, p < .01$; Self-Regulatory $r = -.24, p < .01$; Substantive $r = -.20, p < .01$), suggesting that those who are apprehensive about their grammar and mechanical skills also are less likely to have confidence in these skills.

Correlations Between the Independent Variables and Writing Performance

Overall grade. One belief about writing, Expert Orientation, was significantly and positively correlated with overall writing performance ($r = .17, p < .01$), suggesting that

those who subscribed to the beliefs held by expert writers (audience-orientation, clarity, development) as well as one of the processes they use (iteration) are more likely to receive higher grades on their written work. On the other hand, two other beliefs about writing, Superficial Strategies ($r = -.25$, $p < .01$) and Minimize Revision ($r = -.13$, $p < .05$), negatively correlated with the overall grade. This finding suggests that those who believed in the utility of closely following the arguments of authorities as well as using big words and complex sentence structures were more likely to receive lower grades on their papers, as were those who believed that one can write well without revising.

As in other studies (e.g., Pajares et al., 1999), high writing self-efficacy was associated with higher overall writing grades. The association between self-efficacy and the overall grade was highest for Mechanical Self-Efficacy ($r = .24$, $p < .01$), indicating that those who were most confident about their mechanical writing skills, such as grammar, punctuation, and usage, were more likely to receive high grades for their work. The magnitude of this correlation is line with the correlations between overall writing performance and writing self-efficacy as measured by the first generation of writing self-efficacy scales, which primarily assessed mechanical writing skills (see Chapter II). The associations between the overall grade and the other types of self-efficacy were also positive and significant (Total $r = .20$, $p < .01$; Substantive $r = .18$, $p < .01$; Self-Regulatory $r = .17$, $p < .01$). However, it is worth noting that the correlation between the overall grade and Total Writing Self-Efficacy (the combination of items assessing mechanical, substantive, and self-regulatory writing self-efficacy) in this study was actually a bit lower than the correlation between the overall grade and Mechanical Self-Efficacy alone. This is unlike the second-generation of writing self-efficacy studies where the correlations between writing performance and total writing self-efficacy were larger

than the magnitude of the correlations between writing performance and mechanical self-efficacy alone (see Chapter II). Enjoyment of Writing, a subscale of the Writing Apprehension Test, also correlated with the overall grade ($r = .16, p < .01$), indicating that those who enjoy writing are more likely to produce better papers.

Both forms of writing apprehension, Dislike of Writing ($r = -.18, p < .01$) and Apprehension About Grammar ($r = -.25, p < .01$), were related to poor writing performance. It is important to note that Apprehension About Grammar, the subscale added to the Writing Apprehension Test for this study to assess one's apprehension about making mechanical errors involving spelling, grammar, and punctuation, had a higher negative association with writing performance than Dislike of Writing, the traditional measure of writing apprehension related to having others read and evaluate one's written work.

In summary, the examination of the correlations between the beliefs about writing and overall writing performance supports the notion that some beliefs about writing are adaptive, while others are maladaptive. Expert Orientation appears to be adaptive in that it was associated with higher overall writing performance as well as correlates of strong writing performance, such as writing self-efficacy and Enjoyment of Writing. By contrast, Superficial Strategies and Minimize Revision were associated with lower overall writing performance as well as lower writing self-efficacy and higher writing apprehension. As in other studies (e.g., Pajares et al., 1999), writing self-efficacy was positively associated with writing performance, and writing apprehension was negatively associated with writing performance. However, in this study the association between writing self-efficacy and writing performance was more closely tied to self-efficacy for performing mechanical writing skills as opposed to a combination of mechanical,

substantive, and self-regulatory writing skills. Also, as in other studies, writing apprehension, including the new factor, Apprehension About making Grammatical errors, was related to poor writing performance.

Component grades. The means and standard definitions of the overall and component grades are listed in Table 19; correlations between the independent variables and the overall grade as well as the component grades are presented in Table 21. One belief about writing, Expert Orientation, significantly and positively correlated with the overall grade as well as all six component scores. These correlations ranged from .14 ($p <$ .05) for Content and Development to .19 ($p < .01$) for Language. Writing Supports Thinking significantly and positively correlated with both the Language ($r = .15, p < .05$) and Grammar ($r = .14, p < .05$) scores, as did Mechanical Errors Are Shameful (Language $r = .13, p < .05$; Grammar $r = .14, p < .05$).

By contrast, Superficial Strategies had a significant, negative relation to all of the grades, ranging from -.13 ($p < .05$) for Language to -.25 ($p < .01$) for Organization and the overall grade. Minimize Revision also negatively correlated with all of the grades; however, this relation was statistically significant only for Content ($r = -.14, p < .05$), Organization ($r = -.13, p < .05$), and the overall grade ($r = -.13, p < .05$). Finally, Basics (Mechanics) First negatively related to Organization ($r = -14, p < .05$) and Content ($r = -.12, p < .05$). The remaining beliefs—Writing Is a Personal and Emotional Experience, Writing Is an Innate Gift, Use Plain English, and Address Substantive Issues First—did not significantly correlate with either the overall grade or any of the component scores.

The Writing Self-Efficacy subscale scores were all significantly and positively related to each of the component writing scores with the exception of the relation between Self-Regulatory Self-Efficacy and the Content score, .11, which was positive but

Table 21

Correlations Between the Independent Variables and the Measures of Writing Performance

	Ovrall Grade	Components of Writing Performance					
		Contnt	Develpmnt	Clarity	Organizatn	Language	Grammar
Beliefs About Writing							
Basics First	-.11	-.12*	-.11	-.05	-.14*	.02	.02
Emotional Experience	-.08	-.10	-.07	-.04	.01	-.06	-.05
Expert Orientation	.17**	.14*	.14*	.16**	.17**	.19**	.17**
Superficial Strategies	-.25**	-.23**	-.16**	-.19**	-.25**	-.13*	-.15*
Innate Gift	-.08	-.10	-.10	-.03	-.06	-.03	-.03
Minimize Revision	-.13*	-.14*	-.12	-.11	-.13*	-.07	-.07
Plain English	.01	-.03	-.00	.06	.01	.03	.06
Errors Shameful	.05	-.04	-.05	.10	.06	.13*	.14*
Substantive First	.01	-.04	.02	.01	.03	-.03	-.01
Supports Thinking	.03	.02	-.05	.06	.06	.15*	.14*
Writing Self-Efficacy							
Substantive	.18**	.13*	.18**	.17**	.24**	.17**	.15*
Mechanical	.24**	.14*	.17**	.24**	.24**	.24**	.26**
Self-Regulatory	.17**	.11	.16**	.20**	.26**	.19**	.18**
Total	.20**	.13*	.18**	.21**	.27**	.21**	.20**
Writing Apprehension							
Enjoy Writing	.16**	.12*	.14*	.18**	.21**	.21*	.19**
Dislike of Writing	-.18**	-.15**	-.16**	-.18**	-.24**	-.20**	-.18**
Apprehensn Grammar	-.25**	-.16**	-.23**	-.22**	-.22**	-.16**	-.19**

Note. N = 287; * = *p* < .05, ** = *p* < .01.
The complete names of the factors are: Beliefs About Writing—Basics (Mechanics) First, Writing Is a Personal and Emotional Experience, Expert Orientation, Superficial Strategies, Writing Is an Innate Gift, Minimize Revision, Use Plain English, Mechanical Errors Are Shameful, Address Substantive Issues First, and Writing Supports Thinking; Writing Self-Efficacy—Substantive, Mechanical, Self-Regulatory, and Total; and Writing Apprehension—Enjoyment of Writing, Dislike of Writing, and Apprehension About Grammar.

not statistically significant. Correlations between Substantive Self-Efficacy and the writing scores ranged from .13 ($p < .05$) for Content to .24 ($p < .01$) for Organization; correlations for Mechanical Self-Efficacy ranged from .14 ($p < .05$) for Content to .26 ($p < .01$) for Grammar; correlations for Self-Regulatory Self-Efficacy ranged from .11 (*NS*) for Development to .26 ($p < .01$) for Organization, and correlations for Total Self-Efficacy ranged from .13 ($p < .05$) for Content to .27 ($p < .01$) for Organization. These results suggest that those who were confident in their writing skills tended to receive higher scores on their papers for the overall grade as well as all of the component scores.

The writing apprehension subscale scores were also all significantly related to the scores for all of the writing components. Enjoyment of Writing was positively related to all of the writing scores (range: $r = .12$, $p < .05$ for Content to $r = .21$, $p < .01$ for Language), while Dislike of Writing and Apprehension about Grammar were negatively related to all of the writing scores. The correlations for Dislike of Writing ranged from -.15 ($p < .01$) for Content to -.24 ($p < .01$) for Organization, while the correlations for Apprehension About Grammar ranged from -.16 ($p < .01$) for Content and Language to -.23 ($p < .01$) for Development. Thus, those who liked writing tended to receive higher grades on their papers for their overall writing performance as well as for all of the writing skills assessed by the rubric; those who disliked writing or were apprehensive about their grammar skills received lower overall grades on their papers as well as lower scores for each of the writing components.

An examination of the correlations to the scores of the component writing skills reveals that the correlations between the independent variables and the Content score were lower than the correlations between the independent variables and the other component scores. This seems reasonable because the Content score reflects the students'

mastery of educational psychology as demonstrated in their papers, but does not reflect

their writing skills, which is what the measures of the independent variables were

designed to assess. However, it is notable that strong writing skills enhanced the

likelihood that the students would appear competent with respect to their mastery of the

required content.

Expert Orientation significantly and positively correlated with the overall grade

and all of the component scores, with all of these correlations at roughly of the same level

of magnitude. This means that adhering to Expert Orientation beliefs was associated with

higher grades with respect to all measures of writing competence. Superficial Strategies

significantly, but negatively, correlated with all of the component scores; these

correlations were larger for the overall grade and the substantive components (Overall

grade $r = -.25$, $p < .01$; Organization $r = -.25$, $p < .01$; Content $r = -.23$, $p < .01$; Clarity r

$= -.19$, $p < .01$; Development $r = -.16$, $p < .01$) than they were for the more mechanical

components (Language $r = -13$, $p < .05$; Grammar $r = -.15$, $p < .05$). This indicates that

believing in the use of these Superficial Strategies may be more maladaptive with respect

to substantive writing skills than for mechanical skills. The correlations between the

component scores and Mechanical Errors Are Shameful were significant and positive

only for the more mechanical components (Language $r = .13$, $p < .05$; Grammar $r = .14$, p

$< .05$). This was also the case for Writing Supports Thinking (Language $r = .15$, $p < .05$;

Grammar $r = .14$, $p < .05$). Finally, the correlations between the writing self-efficacy

subscores and the component scores were highest for the Organization score.

Summary

In summary, four of the beliefs about writing—Expert Orientation, Writing

Supports Thinking, Address Substantive Issues First, and Mechanical Errors Are

Shameful—appear to be adaptive or at least somewhat adaptive in that they positively correlated with all or some of the grades for writing performance or with other adaptive beliefs. Expert Orientation also correlated with writing self-efficacy and Enjoyment of Writing, which have been positively associated with writing performance in previous research (e.g., Hillocks, 1986). Writing Supports Thinking had the highest correlation to Enjoyment of Writing, a measure of low writing apprehension. Other beliefs about writing—Superficial Strategies, Minimize Revision, Basics (Mechanics) First, and Writing Is an Innate Gift—seemed to be maladaptive or at least somewhat maladaptive in that they negatively correlated with all or some of the writing grades and/or with writing self-efficacy and Enjoyment of Writing.

Writing Self-Efficacy subscores were significantly and positively correlated with the overall grade and all of the component writing scores with the exception of the correlation between Self-Regulatory Self-Efficacy and Content, which was positive but did not reach statistical significance. Similarly, all of writing apprehension subscores statistically significantly correlated with the overall writing grade and all of the component writing scores; Enjoyment of Writing correlated positively with writing performance, while the correlations between writing performance and both Dislike of Writing and Apprehension about Grammar were negative.

Research Question 2: What are the unique contributions of beliefs about writing, writing self-efficacy, and writing apprehension to writing performance?

The answer to the second research question, which concerns the contributions of the independent variables—beliefs about writing, writing self-efficacy, and writing apprehension—to the dependent variable, writing performance, was determined via hierarchical regression analysis. The required sample size was $n \geq 104 + m$ (where m =

number of independent variables; Tabachnick & Fidell, 2001), making the minimum sample size 120. The sample for this study sample consisted of 287 students and thus exceeded the suggested minimum requirement.

Before these regression analyses were conducted, the data were examined to determine if they met the assumptions of this statistical procedure with respect to homoscedasticity, the normality and linearity of the residuals, outliers, and multicollinearity. An examination of the residual plots, the residual histograms, the normal probability plots, and the partial residual plots indicated that the data did meet the assumptions of homoscedasticity and the normality and linearity of the residuals. Although an examination of the standardized scores for the various scales indicated the presence of some univariate outliers, the leverage value was less than .5, indicating that these outliers were not problematic. As a precaution, I later performed the regressions with and without these outliers and found no notable differences in the results. The VIF was less than 10.0, and the tolerance values were below .1, indicating that multicollinearity was not an issue with these data with respect to the regression equations (Field, 2005; Myers, 1990).

An examination of the scatterplots plotting the three writing apprehension subscales—Enjoyment of Writing, Dislike of Writing, and Apprehension About Grammar—against writing performance illustrated a linear relationship between these variables as opposed to the Yerkes curve (Yerkes & Dodson, 1908). This means that writing apprehension was not adaptive at low or moderate levels, but was consistently related to weak writing performance at all levels.

Effects of the Independent Variables on Overall Writing Performance

Hierarchical regression analyses were then conducted to determine the unique variance explained by the independent variables on overall writing performance (see Table 22). The 10 beliefs about writing from the Beliefs About Writing Survey were entered as a block in the first step, followed by the total score from the modified Writing Self-Regulatory Efficacy Scale in the second step, and the three subscales of the modified Writing Apprehension Test in the third step. To further refine my analyses with regards to writing self-efficacy, I conducted a second set of regression analyses that included each of the three writing self-efficacy subscale scores as a block in the second step of these analyses.

The beliefs about writing entered in the first block explained 11.8% ($p < .001$) of the variance in the overall writing scores. Two of the beliefs about writing were significant predictors of the overall grade: Superficial Strategies, which negatively predicted writing performance ($\beta = -.22$, $p < .001$), and Expert Orientation, which was positively associated with writing performance ($\beta = .22$, $p < .01$). The entry of Total Writing Self-Efficacy in the second block increased the total variance explained by the model by 2.5% ($p < .01$) to a total of 14.3% ($p < .01$). Total Writing Self-Efficacy was a significant, positive predictor of writing performance until the writing apprehension variables were added in the third block, increasing the variance explained by the model by an additional 4.6% ($p < .01$) for a total of 18.9%. As in previous studies (e.g., Pajares & Valiante, 1997), the original Writing Apprehension Test (the Enjoyment of Writing and Dislike of Writing subscales here) did not significantly predict writing performance. However, Apprehension About Grammar, the new subscale developed for this study that

Table 22

Summary Hierarchical Regression Analysis Predicting Writing Performance (Overall Grade) from Beliefs About Writing, Total Writing Self-Efficacy, and Writing Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.12***	.12***	
Beliefs About Writing			
Basics (Mechanics) First			-.07
Writing Is a Personal and Emotional Experience			-.10
Expert Orientation			.22**
Superficial Strategies			-.22***
Writing Is an Innate Gift			.02
Minimize Revision			-.03
Use Plain English			.02
Mechanical Issues Are Shameful			.08
Address Substantive Issues First			-.05
Writing Supports Thinking			-.11
Step 2	.14***	.03**	
Writing Self-Efficacy			
Total Self-Efficacy			.08
Step 3	.19***	.05**	
Writing Apprehension			
Enjoyment of Writing			.09
Dislike of Writing			.06
Apprehension About Grammar			-.23***

Note. N = 287. *p < .05; **p < .01; *** *p* < .001.

assesses apprehension about making mechanical errors, did significantly and negatively predict the overall grade (β = -.23, *p* < .001).

It is noteworthy that unlike much of the research in the extant literature (e.g., Pajares and Valiante, 1997), writing self-efficacy did not contribute unique variance to writing performance (β = .08, *NS* in the final model). In further contrast to the Pajares group's studies, where writing self-efficacy nullified the influence of writing apprehension, in this study, writing apprehension, particularly Apprehension About

Grammar, a new subscale that was not available to Pajares, accounted for significant variance in the regression equation, while writing self-efficacy did not.

I then reran this analysis using the subscales of the modified Writing Self-Regulatory Efficacy Scale—Substantive Self-Efficacy, Mechanical Self-Efficacy, and Self-Regulatory Self- Efficacy— in the second step instead of the Total Writing Self-Efficacy score (see Table 23). The results were the same as those of the previous analysis for the first step: The beliefs about writing accounted for 11.8% ($p < .001$) of the variance, and two of the beliefs, Expert Orientation and Superficial Strategies were significant predictors. In this analysis, however, the second step accounted for slightly more variance (4.4% as opposed to 2.5%, $p < .01$), and Mechanical Self- Efficacy was a significant predictor. Again, the contribution of writing self-efficacy (Mechanical Self-Efficacy in this case) did not remain statistically significant after the writing apprehension variables were entered as a block in the third step ($\beta = .11$, *NS*). The final model accounted for 19.1% of the variance in the dependent variable ($p < .001$), with two beliefs about writing, Superficial Strategies ($\beta = -.22$, $p < .001$) and Expert Orientation ($\beta = .22$, $p < .01$), and one measure of writing apprehension, Apprehension About Grammar ($\beta = -.20$, $p < .01$), contributing unique variance in writing performance as measured by overall grade.

In sum, higher Expert Orientation scores predicted a higher overall grade on the writing task; in contrast, higher Superficial Strategy and Apprehension About Grammar scores predicted a lower overall grade in both regression models.

Table 23

Summary Hierarchical Regression Analysis Predicting Writing Performance (Overall Grade) from Beliefs About Writing, the Writing Self-Efficacy Subscales, and Writing Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.12***	.12***	
Beliefs About Writing			
Basics (Mechanics) First			-.07
Writing Is a Personal and Emotional Experience			-.11
Expert Orientation			.22**
Superficial Strategies			-.22***
Writing Is an Innate Gift			.01
Minimize Revision			-.03
Use Plain English			.02
Mechanical Errors Are Shameful			.07
Address Substantive Issues First			-.04
Writing Supports Thinking			-.12
Step 2	.16***	.04**	
Writing Self-Efficacy			
Substantive			-.02
Mechanical			.11
Self-Regulatory			.02
Step 3	.19***	.03*	
Writing Apprehension			
Enjoyment of Writing			.09
Dislike of Writing			.05
Apprehension About Grammar			-.20**

Note. $N = 287$. *$p < .05$; **$p < .01$; *** $p < .001$.

Contributions of the Independent Variables to the Components of Writing Performance

In addition to an overall grade, the student received scores for six components of writing performance: Content, Development, Clarity, Organization, Language, and Grammar. The results of the hierarchical analyses related to these dependent variables will follow.

Content score. Tables 24 and 25 display the results of the hierarchical regression analyses on the score reflecting the students' mastery of the educational psychology content, first using the Total Self-Efficacy score in step 2 (Table 24), and subsequently using the component self-efficacy scores in the second step (Table 25). The results for these two analyses were almost identical. The model that included Total Self-Efficacy in the second step accounted for 13.1% of the variance in the Content grade, while the model involving the writing self-efficacy subscales accounted for 13.2% of the variance. The only significant predictors of the Content scores were beliefs about writing. Expert Orientation made a significant, positive contribution to Content scores ($\beta = .23$, $p < .01$), while both Superficial Strategies ($\beta = -.19$, $p < .01$) and Writing Is a Personal and Emotional Experience ($\beta = -.13$, $p < .05$) contributed negatively to the Content score.

Overall, higher Expert Orientation scores predicted higher content grades on the writing task; on the other hand, higher Superficial Strategy and Writing Is a Personal and Emotional Experience scores predicted lower content grades in both regression models.

Table 24

Summary Hierarchical Regression Analysis Predicting Writing Performance (Content

Score) from Beliefs About Writing, Total Writing Self-Efficacy, and Writing

Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.11***	.11***	
Beliefs About Writing			
Basics (Mechanics) First			-.08
Writing Is a Personal and Emotional Experience			-.13*
Expert Orientation			.23**
Superficial Strategies			-.19**
Writing Is an Innate Gift			.02
Minimize Revision			-.03
Use Plain English			-.02
Mechanical Errors Are Shameful			-.02
Address Substantive Issues First			-.09
Writing Supports Thinking			-.08
Step 2	.11***	.01	
Writing Self-Efficacy			
Total Self-Efficacy			.00
Step 3	.13***	.02	
Writing Apprehension			
Enjoyment of Writing			.07
Dislike of Writing			-.01
Apprehension About Grammar			-.12

*Note. N = 287. *p < .05; **p < .01; *** p < .001.*

Table 25

Summary Hierarchical Regression Analysis Predicting Writing Performance (Content Score) from Beliefs About Writing, the Writing Self-Efficacy Subscales, and Writing Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.11***	.11***	
Beliefs About Writing			
Basics (Mechanics) First			-.08
Writing Is a Personal and Emotional Experience			-.13*
Expert Orientation			.23**
Superficial Strategies			-.19**
Writing Is an Innate Gift			.02
Minimize Revision			-.03
Use Plain English			-.02
Mechanical Errors Are Shameful			-.02
Address Substantive Issues First			-.09
Writing Supports Thinking			-.08
Step 2	.12**	.01	
Writing Self-Efficacy			
Substantive			.05
Mechanical			.01
Self-Regulatory			-.06
Step 3	.13**	.02	
Writing Apprehension			
Enjoyment of Writing			.08
Dislike of Writing			-.00
Apprehension About Grammar			-.12

Note. N = 287. **p* < .05; ***p* < .01; *** *p* < .001.

Component scores for substantive writing skills: Development. Together, the independent variables accounted for 14.5% ($p < .001$) of the variance in the Development scores. The first block, beliefs about writing, uniquely explained 7.8% of the variance in the dependent variable ($p < .05$), the second block (Total Writing Self-Efficacy) uniquely accounted for an additional 2.5% of the variance ($p < .01$) for a cumulative total of 10.4% through the second step ($p < .01$), and the final block of writing apprehension subscales uniquely explained another 4.1% of the variance in the dependent variable ($p < .01$). Total Writing Self-Efficacy was significant after the second step, but was not significant in the final model ($\beta = .06$, *NS*). Two beliefs about writing—Expert Orientation ($\beta = .21$, $p < .01$) and Writing Supports Thinking ($\beta = -.21$, $p < .01$)—and one type of apprehension, Apprehension About Grammar ($\beta = -.20$, $p < .01$) made unique, statistically significant contributions in the final model (see Table 26).

The results were very similar when the writing self-efficacy subscales were used in the second step. The first block of beliefs about writing uniquely accounted for 7.8% of the variance ($p < .05$), the second block (writing self-efficacy) uniquely contributed an additional 2.9% of the variance of the Development scores ($p < .05$), and the third block uniquely explained another 3.9% of the variance ($p < .01$) for a total R^2 of 14.6% ($p < .001$) for the entire model (see Table 27). The final significant predictors of the Development score were Expert Orientation ($\beta = .21$, $p < .01$), Writing Supports Thinking ($\beta = -.20$, $p < .01$), and Apprehension About Grammar ($\beta = -.22$, $p < .01$). None of the self-efficacy subscores was significant.

Overall, for both models, higher Expert Orientation scores predicted higher Development grades, while higher Writing Supports Thinking and Apprehension About Grammar scores both negatively predicted the dependent variable.

Table 26

Summary Hierarchical Regression Analysis Predicting Writing Performance

(Development Score) from Beliefs About Writing, Total Writing Self-Efficacy, and

Writing Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.08*	.08*	
Beliefs About Writing			
Basics (Mechanics) First			-.06
Writing Is a Personal and Emotional Experience			-.07
Expert Orientation			.21**
Superficial Strategies			-.10
Writing Is an Innate Gift			-.04
Minimize Revision			-.05
Use Plain English			.01
Mechanical Errors Are Shameful			-.00
Address Substantive Issues First			-.01
Writing Supports Thinking			-.21**
Step 2	.10**	.03**	
Writing Self-Efficacy			
Total Self-Efficacy			.06
Step 3	.15***	.04**	
Writing Apprehension			
Enjoyment of Writing			.12
Dislike of Writing			.04
Apprehension About Grammar			-.20**

Note. $N = 287$. *$p < .05$; **$p < .01$; *** $p < .001$.

Table 27

Summary Hierarchical Regression Analysis Predicting Writing Performance (Development Score) from Beliefs About Writing, the Writing Self-Efficacy Subscales, and Writing Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.08*	.08*	
Beliefs About Writing			
Basics (Mechanics) First			-.06
Writing Is a Personal and Emotional Experience			-.07
Expert Orientation			.21**
Superficial Strategies			-.10
Writing Is an Innate Gift			-.04
Minimize Revision			-.05
Use Plain English			.00
Mechanical Errors Are Shameful			.01
Address Substantive Issues First			-.02
Writing Supports Thinking			-.20**
Step 2	.11**	.03*	
Writing Self-Efficacy			
Substantive			.08
Mechanical			-.05
Self-Regulatory			.03
Step 3	.15***	.04**	
Writing Apprehension			
Enjoyment of Writing			.12
Dislike of Writing			.04
Apprehension About Grammar			-.22**

Note. N = 287. **p* < .05; **p < .01; *** *p* < .001.

Component scores for substantive writing skills: Clarity. The regression equation predicting the Clarity score explained 15.1% ($p < .001$) of the variance in the scores for this component of writing (see Table 28). In the hierarchical regression using Total Self-Efficacy in the second step, beliefs about writing, which were entered in the first block, accounted for 8.2% ($p < .01$) of the unique variance in these scores; Total Writing Self-Efficacy, which was entered in the second step, contributed an additional 3.0% ($p < .01$) of the variance for a total of 11.2% ($p < .001$) of the Clarity grade; and the writing apprehension subscales, which were entered in the third block, uniquely accounted for 3.9% ($p < .01$) additional variance. Total Self-Efficacy was significant after step 2, but not in the final model. Superficial Strategies ($\beta = -.17$, $p < .01$) and Writing Fluency ($\beta = .17$, $p < .05$) beliefs, and Apprehension About Grammar ($\beta = -.19$, $p < .01$) were significant predictors in the final model.

When the regression was run with the components of writing self-efficacy instead of the Total Self-Efficacy score, Mechanical Self-Efficacy was significant after the second step, but not in the final model. The first block of beliefs about writing uniquely accounted for 8.2% ($p < .01$) of the variance, the second block uniquely explained an additional 4.9% ($p < .01$) for a total of 13.1% ($p < .001$) of the variance, and the third block uniquely accounted for another 2.5% ($p < .05$) a total R^2 of 15.6% ($p < .001$) for the entire model (see Table 29).

To sum, for both models, higher Expert Orientation scores predicted higher grades for Clarity, while higher Superficial Strategies and Apprehension About Grammar scores both negatively predicted the Clarity grade.

Table 28

Summary Hierarchical Regression Analysis Predicting Writing Performance (Clarity

Score) from Beliefs About Writing, Total Writing Self-Efficacy, and Writing

Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.08**	.08**	
Beliefs About Writing			
Basics (Mechanics) First			-.04
Writing Is a Personal and Emotional Experience			-.08
Expert Orientation			.17*
Superficial Strategies			-.17**
Writing Is an Innate Gift			.05
Minimize Revision			-.04
Use Plain English			.06
Mechanical Errors Are Shameful			.12
Address Substantive Issues First			-.05
Writing Supports Thinking			-.10
Step 2	.11***	.03**	
Writing Self-Efficacy			
Total Self-Efficacy			.08
Step 3	.15***	.04**	
Writing Apprehension			
Enjoyment of Writing			.13
Dislike of Writing			.04
Apprehension About Grammar			-.19**

Note. $N = 287$. *$p < .05$; **$p < .01$; *** $p < .001$.

Table 29

Summary Hierarchical Regression Analysis Predicting Writing Performance (Clarity Score) from Beliefs About Writing, the Writing Self-Efficacy Subscales, and Writing Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.08**	.08**	
Beliefs About Writing			
Basics (Mechanics) First			-.03
Writing Is a Personal and Emotional Experience			-.08
Expert Orientation			.17*
Superficial Strategies			-.17**
Writing Is an Innate Gift			.04
Minimize Revision			-.04
Use Plain English			.07
Mechanical Errors Are Shameful			.10
Address Substantive Issues First			-.03
Writing Supports Thinking			-.11
Step 2	.13***	.05**	
Writing Self-Efficacy			
Substantive			-.10
Mechanical			.10
Self-Regulatory			.11
Step 3	.16***	.03*	
Writing Apprehension			
Enjoyment of Writing			.11
Dislike of Writing			.02
Apprehension About Grammar			-.16*

Note. N = 287. **p* < .05; ***p* < .01; *** *p* < .001.

Component scores for substantive writing skills: Organization. The regression on the Organization score explained 18.4% ($p < .001$) of the total variance in this component score. In the model run with Total Writing Self-Efficacy, the first block of beliefs about writing uniquely accounted for 10.8% ($p < .001$) of the variance, the second block (Total Self-Efficacy) uniquely explained an additional 4.9% ($p < .001$) for a total of 15.7% ($p < .001$) of the variance, and the third block (writing apprehension subscores) uniquely accounted for a final 2.7% ($p < .05$) of the variance in the organization variable for a total R^2 of 18.4%. Total Self-Efficacy was a significant predictor after the second step, but not in the final model, where Superficial Strategies ($\beta = -.20, p < .01$), Expert Orientation ($\beta = .17, p < .05$), and Apprehension About Grammar ($\beta = -.15, p < .05$) were the sole significant predictors of the Organization score (see Table 30).

When the writing self-efficacy subscale scores were entered in the second step of the hierarchical regression, Self-Regulatory Self-Efficacy was statistically significant until the writing apprehension subscores entered the equation. The first block, beliefs about writing, uniquely explained 10.8% ($p < .001$) of the variance, the second step (writing self-efficacy subscores) uniquely explained an additional 5.6% ($p < .01$) for a total of 16.4% ($p < .001$), and the third block (writing apprehension) uniquely contributed a final 2.6% ($p < .05$) of the variance for a total R^2 of 19.0% ($p < .001$) (see Table 31). Superficial Strategies ($\beta = -20, p < .01$), Expert Orientation ($\beta = .18, p < .05$), Mechanical Errors Are Shameful ($\beta = .12, p < .05$), and Apprehension About Grammar ($\beta = -.17, p < .05$) were significant predictors of the Organization grade (see Table 31).

On the whole, higher Expert Orientation and Mechanical Errors Are Shameful scores predicted better Organization; higher Superficial Strategies and Writing Supports Thinking and Apprehension About Grammar scores each predicted weaker Organization.

Table 30

Summary Hierarchical Regression Analysis Predicting Writing Performance

(Organization Score) from Beliefs About Writing, Total Writing Self-Efficacy, and

Writing Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.11***	.11***	
Beliefs About Writing			
Basics (Mechanics) First			-.11
Writing Is a Personal and Emotional Experience			-.03
Expert Orientation			.17*
Superficial Strategies			-.20**
Writing Is an Innate Gift			.03
Minimize Revision			-.02
Use Plain English			.02
Mechanical Errors Are Shameful			.12
Address Substantive Issues First			-.02
Writing Supports Thinking			-.13
Step 2	.16***	.05***	
Writing Self-Efficacy			
Total Self-Efficacy			.15
Step 3	.18***	.03*	
Writing Apprehension			
Enjoyment of Writing			.05
Dislike of Writing			-.05
Apprehension About Grammar			-.15*

Note. $N = 287$. *$p < .05$; **$p < .01$; *** $p < .001$.

Table 31

Summary Hierarchical Regression Analysis Predicting Writing Performance (Organization Score) from Beliefs About Writing, the Writing Self-Efficacy Subscales, and Writing Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.11***	.11***	
Beliefs About Writing			
Basics (Mechanics) First			-.11
Writing Is a Personal and Emotional Experience			-.02
Expert Orientation			.18*
Superficial Strategies			-.20**
Writing Is an Innate Gift			.03
Minimize Revision			-.02
Use Plain English			.01
Mechanical Errors Are Shameful			.12*
Address Substantive Issues First			-.03
Writing Supports Thinking			-.13
Step 2	.16***	.06**	
Writing Self-Efficacy			
Substantive			.01
Mechanical			-.05
Self-Regulatory			.20
Step 3	.19***	.03*	
Writing Apprehension			
Enjoyment of Writing			.02
Dislike of Writing			-.05
Apprehension About Grammar			-.17*

Note. N = 287. **p* < .05; ***p* < .01; **** p* < .001.

Component scores for mechanical writing skills: Language. Although Diederich (1966) considered the Language score to be substantive because it accounts for issues such as the overall tone of a manuscript, in this study Language seemed more mechanical than substantive because it reflects the inclusion of garbled passages in the students' papers as well as inappropriate usage, and these errors were rather common.

In the hierarchical regression model with Total Self-Efficacy in the second step, the first block of beliefs about writing uniquely accounted for 8.8% ($p < .01$) of the variance; the second step (Total Self-Efficacy) uniquely explained another 2.0% ($p < .05$) of the variance for a total of 10.8% ($p < .01$); and the final step (writing apprehension subscales) uniquely contributed an additional 2.4% (*NS*) for a total R^2 of 13.1% ($p < .001$) for the model. Total Self-Efficacy was significant after the second step, but not in the final model. The three subscales that were significant predictors in the final regression equation were all beliefs about writing: Expert Orientation ($\beta = .19$, $p < .05$), Superficial Strategies ($\beta = -.15$, $p < .05$), and Writing Is a Personal and Emotional Experience ($\beta = -.11$, $p < .05$) (see Table 32).

For the second regression model, in which the self-efficacy subscales were used in the second step, the first block again uniquely accounted for 8.8% ($p < .01$) of the variance in the Language grades, the second step uniquely contributed an additional 3.2% ($p < .05$) for a total of 12.0% ($p < .01$), and the third step uniquely explained 1.6% (*NS*) more for a total R^2 of 13.6% ($p < .01$) for the model. In this case Mechanical Self-Efficacy was significant after the second step, but not in the final model.

Once more, the only subscale scores significantly accounting for unique variance in the Language score were beliefs about writing: Expert Orientation ($\beta = .18$, $p < .05$), Superficial Strategies ($\beta = -.15$, $p < .05$), and Writing is a Personal and Emotional

Table 32

Summary Hierarchical Regression Analysis Predicting Writing Performance (Language

Score) from Beliefs About Writing, Total Writing Self-Efficacy, and Writing

Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.09**	.09**	
Beliefs About Writing			
Basics (Mechanics) First			.01
Writing Is a Personal and Emotional Experience			-.12*
Expert Orientation			.19*
Superficial Strategies			-.15*
Writing Is an Innate Gift			.08
Minimize Revision			.01
Use Plain English			.04
Mechanical Errors Are Shameful			.10
Address Substantive Issues First			-.08
Writing Supports Thinking			.00
Step 2	.11**	.02*	
Writing Self-Efficacy			
Total Self-Efficacy			.04
Step 3	.13***	.02	
Writing Apprehension			
Enjoyment of Writing			.15
Dislike of Writing			.02
Apprehension About Grammar			-.12

Note. $N = 287$. *$p < .05$; **$p < .01$; *** $p < .001$.

Experience (β = -.12, $p < .05$) (see Table 33). Thus, higher Expert Orientation scores

predicted better Language grades, while higher Writing Is a Personal Experience and

Superficial Strategies scores predicted lower Language grades.

Table 33

Summary Hierarchical Regression Analysis Predicting Writing Performance (Language

Score) from Beliefs About Writing, the Writing Self-Efficacy Subscales, and Writing

Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.09**	.09**	
Beliefs About Writing			
Basics (Mechanics) First			.02
Writing Is a Personal and Emotional Experience			-.12*
Expert Orientation			.18*
Superficial Strategies			-.15*
Writing Is an Innate Gift			.07
Minimize Revision			.01
Use Plain English			.04
Mechanical Errors Are Shameful			.08
Address Substantive Issues First			-.06
Writing Supports Thinking			-.01
Step 2	.12**	.03*	
Writing Self-Efficacy			
Substantive			-.08
Mechanical			.13
Self-Regulatory			.01
Step 3	.14**	.02	
Writing Apprehension			
Enjoyment of Writing			.15
Dislike of Writing			.00
Apprehension About Grammar			-.08

Note. $N = 287$. *$p < .05$; **$p < .01$; *** $p < .001$.

Component scores for mechanical writing skills: Grammar. The final two hierarchical regressions in this study were conducted with the Grammar score as the dependent variable. When the measure of Total Self-Efficacy was used in the second step, the first block of beliefs about writing uniquely accounted for 8.8% ($p < .01$) of the Grammar grades, the second block (Total Writing Self-Efficacy) uniquely explained an additional 1.9% ($p < .05$) for a total of 10.7% ($p < .01$) of the variance, and the third block uniquely contributed an additional 2.9% ($p < .05$) for a total R^2 of 13.6% ($p < .001$) for the model. Total Self-Efficacy was significant after the second step, but not the final model. Superficial Strategies ($\beta = -.17$, $p < .01$), Expert Orientation ($\beta = .15$, $p < .05$), and Apprehension About Grammar ($\beta = -.17$, $p < .05$) were statistically significant in the final model (see Table 34).

For the second hierarchical regression model, when the self-efficacy subscales were used in the second step, the first step again uniquely accounted for 8.8% of the variance ($p < .01$). The second step uniquely explained another 4.6% ($p < .01$) of the variance for a total of 13.00% ($p < .001$), and the third step accounted for an additional 1.4% (*NS*) for a total R^2 of 14.8% ($p < .001$) (see Table 35). Superficial Strategies ($\beta = -.18$, $p < .01$) and Expert Orientation ($\beta = .14$, $p < .05$) were significant predictors of this grade, as was Mechanical Self-Efficacy ($\beta = .20$, $p < .05$. This was the only time that a writing self-efficacy score was a significant predictor in a final model.

To sum, higher Expert Orientation beliefs and Mechanical Self-Efficacy scores predicted better Grammar scores; conversely, higher Superficial Strategies scores predicted lower Grammar grades.

Table 34

Summary Hierarchical Regression Analysis Predicting Writing Performance (Grammar

Score) from Beliefs About Writing, Total Writing Self-Efficacy, and Writing

Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.09**	.09**	
Beliefs About Writing			
Basics (Mechanics) First			.02
Writing Is a Personal and Emotional Experience			-.10
Expert Orientation			.15*
Superficial Strategies			-.17**
Writing Is an Innate Gift			.06
Minimize Revision			.01
Use Plain English			.07
Mechanical Errors Are Shameful			.12
Address Substantive Issues First			-.05
Writing Supports Thinking			.02
Step 2	.11**	.02*	
Writing Self-Efficacy			
Total Self-Efficacy			.06
Step 3	.14***	.03*	
Writing Apprehension			
Enjoyment of Writing			.11
Dislike of Writing			.03
Apprehension About Grammar			-.17*

*Note. N = 287. *p < .05; **p < .01; *** p < .001.*

Table 35

Summary Hierarchical Regression Analysis Predicting Writing Performance (Grammar Score) from Beliefs About Writing, the Writing Self-Efficacy Subscales, and Writing Apprehension

Step and predictor variable	R^2	ΔR^2	β
Step 1	.09**	.09**	
Beliefs About Writing			
Basics (Mechanics) First			.02
Writing Is a Personal and Emotional Experience			-.10
Expert Orientation			.14*
Superficial Strategies			-.18**
Writing Is an Innate Gift			.05
Minimize Revision			.01
Use Plain English			.08
Mechanical Errors Are Shameful			.09
Address Substantive Issues First			-.03
Writing Supports Thinking			.00
Step 2	.13***	.05**	
Writing Self-Efficacy			
Substantive			-.14
Mechanical			.20*
Self-Regulatory			.02
Step 3	.15***	.01	
Writing Apprehension			
Enjoyment of Writing			.11
Dislike of Writing			.01
Apprehension About Grammar			-.10

Note. $N = 287$. *$p < .05$; **$p < .01$; *** $p < .001$.

In summary, the hierarchical regressions involving beliefs about writing, writing self-efficacy, and writing apprehension explained between 13% (Content and Language) and 19% (overall grade) of the variance in the writing performance grades. Taken as a group, the beliefs about writing, which were entered in the first step, explained more variance than did either writing self-efficacy or writing apprehension (range: 7.8% of the grade for Development to 11.8% of the overall grade). At least two and sometimes three of the individual beliefs about writing were significant predictors of each of the seven grades (overall grade and six component scores). The second step of the regression equations (writing self-efficacy) explained between 0.6% (Content) and 4.9% (Organization) of the variance in the grades when Total Self-Efficacy was entered in the second step, and between 0.9% (Content) and 5.6% (Organization) of the variance in the grades when the self-efficacy subscales were used in the second step. The third step (writing apprehension) accounted for between 1.7% (Content) and 4.6% (overall grade) of the variance in the grades when the Total Self-Efficacy score was used in the second step, and between 1.4% (Grammar) and 3.9% (Development) when the self-efficacy subscales were used in the second step.

Five of the ten beliefs about writing were significant predictors of at least one of the grades. Expert Orientation, which maintains that writing should be clear, well developed, and reader friendly, and written with an iterative process, was the only subscale that was a significant predictor of every grade. The effect of this belief was always positive, with the betas ranging in magnitude from .14 for Grammar to .23 for Content. It is noteworthy that even though Expert Orientation primarily addresses substantive issues, it had a positive effect on the mechanical as well as the substantive and overall grades. Superficial Strategies, which upholds the use of strategies such as

adapting the arguments of authorities and embellishing manuscripts with big words, was a significant predictor of all of the grades except the Development score. The influence of this belief on grades was always negative. Betas ranged from -.10 (*NS*) for Development to -.22 for the overall grade. The influence of Writing Is a Personal and Emotional Experience was also always negative; however, it was a significant predictor only for the Content (β = -.13) and Language (β = -.12) scores. Writing Supports Thinking was a significant, negative predictor of the Development grade (β = .20), and Mechanical Errors Are Shameful was a significant, positive predictor of the Organization grade, but only when the component self-efficacy scores were used in the regression equation (β = .12). The remaining five beliefs about writing—Basics (Mechanics) First, Writing Is an Innate Gift, Minimize Revision, Address Substantive Issues First, and Use Plain English—did not significantly predict any of the grades.

By contrast, writing self-efficacy did not strongly influence grades in this study. In a number of cases, one of the self-efficacy subscores was significant after the second step, but its influence was nullified when the writing apprehension subscores were entered in the third step. The only exception was Mechanical Self-Efficacy, which was a significant, positive predictor of the Grammar grade (β = .20).

Apprehension About Grammar, the new three-item subscale developed for this study, had a uniformly negative influence on all of the grades. This influence was statistically significant for the overall grade as well as the three substantive scores: Development, Clarity, and Organization. Apprehension About Grammar was also a significant, negative predictor of the Grammar score when Total Self-Efficacy, as opposed to the self-efficacy subscales, was entered into the regression equation. The

other writing apprehensions subscores, Enjoyment of Writing and Dislike of Writing,

were not significant predictors.

CHAPTER V

DISCUSSION

This study attempted to extend the line of research establishing the relation between writing self-efficacy beliefs and writing performance by adding another type of belief to the beliefs about writing literature. In contrast to writing self-efficacy beliefs, which are one's beliefs about one's writing skills, beliefs about writing relate to one's beliefs about the nature of good writing and the processes good writers use; and in contrast to epistemological beliefs, which tend to apply to learning in general, beliefs about writing are domain-specific.

There is a fledgling research literature on beliefs about writing, but it is sparse and has been hampered by the fact that most of the investigators in this area do not seem to have known about one another's work. Research on beliefs about writing has also been limited in the traditions from which researchers have drawn the beliefs they have investigated. These traditions have included the research on reading (White & Bruning, 2005) and the theory underlying the pedagogy of teaching writing (Silva & Nicholls, 1993), as opposed to the theory and research about the actual process of writing. This study adds to this literature by examining beliefs related to expert writing practice.

This research also expanded an established view of writing apprehension and assessed the effects of this wider construct on writing performance. Hillocks's (1986) and Pajares's (e.g., Pajares & Johnson, 1996) studies of the effects of writing apprehension on writing performance used the Writing Apprehension Test (Daly & Miller, 1975b) to assess writing apprehension. This test operationalizes writing apprehension as an anxiety about sharing one's written work with others and having this work evaluated. This study continued this tradition, but also added questions to the Writing Apprehension Test that

address writers' anxiety about making mechanical errors involving grammar, spelling, and punctuation. Principal components analysis with varimax rotation indicated that these additional items formed a separate factor, Apprehension About Grammar, that explains unique variance in writing apprehension.

As for self-efficacy about writing, this research follows the tradition of what I call the second generation of writing self-efficacy research. The first generation of this research assessed writers' self-efficacy chiefly with respect to mechanical writing skills. The second generation of writing self-efficacy studies investigates self-efficacy for a comprehensive set of writing skills, including substantive writing skills, such as the ability to develop arguments, write clearly, organize ideas, and adapt to an audience, as well as execute mechanical writing tasks.

In further contrast to most studies in this literature, whose outcome variable was often the grades students received for papers they composed in class with no time for reflection or anything but cursory planning and revision, this study used the more ecologically valid type of measure recommended by the National Council of Teachers of English (2008): the grade students received for a paper they prepared for an educational psychology class. Because this particular assignment was required by the College of Education at the institution where the research was conducted, all of the students wrote the same paper. This eliminated possible variation in grades related to the demands of different writing tasks and genres.

Also in contrast to most studies in this literature, the papers were scored not only with respect to the students' overall writing performance, but also for six specific components of these papers—the accuracy and completeness of the content the students discussed as well as five aspects of their writing: Development, Clarity, Organization,

Language, and Grammar. This was done to identify more specifically how the independent variables affect not only overall writing performance, but key facets of writing. Such knowledge could serve as the basis for instructional writing interventions targeting specific writing problems.

Finally, because almost two-thirds of the students in the 11 educational psychology classes from which the participants were recruited were Hispanic females, I restricted the participants to this group. This created an opportunity to conduct an in-depth study of these women, a growing but infrequently studied population.

This chapter will first summarize the method of the study. It will then review and discuss the major findings within the context of the research literature as well as the limitations of this research design. Finally, the chapter will explore the implications of these findings with respect to the body of research to which this study belongs and to writing instruction.

Method

Three surveys—the Beliefs About Writing Survey, the modified Writing Self-Regulatory Efficacy Scale, and the modified Writing Apprehension Test—were administered to 299 Hispanic women in a research-extensive public university in South Florida; 287 of these students completed the study. The measures were developed or modified in the first two phases of the overall research project of which this study is a part.

The Beliefs About Writing Survey, developed through several iterations for this study, consists of 77 items that assessed the extent of the participants' agreement with 14 beliefs about writing. The PCA with varimax rotation used to examine the psychometric properties of the measure with this sample of Hispanic women revealed that the 14

beliefs about writing had been reduced to 10: five adaptive and five maladaptive. The five adaptive beliefs were as follows:

- Expert Orientation, which was comprised of three factors addressing substantive characteristics of writing considered important by expert writers—Adapt to the Audience, Clarity Is Essential, and Development Is Important; one that described an aspect of expert writing practice—Writing Is an Iterative Process; plus two items advocating the Use of Plain English

- Writing Supports Thinking, which maintains that the process of writing helps writers understand their own views and the material they are writing about, and stimulates creativity

- Writing Is a Personal and Emotional Experience, which asserts that good writers become affectively engaged in the process of writing

- Use Plain English, which supports the use of accessible vocabulary and sentence structures

- Address Substantive Issues First, a writing process advocated by professional writers and editors.

The five maladaptive beliefs included the following:

- Superficial Strategies, a combination of two factors: the point of writing is the Transmission of what authorities think by quoting these authorities and accurately reporting their views and Write to Impress by using big words and complex sentence structures

- Minimize Revision by writing as few drafts as possible

- Writing Is an Innate Gift that people have or they lack

- Mechanical Errors Are Shameful

- Students should master the Basics (Mechanics) First before they learn substantive writing skills

As mentioned above, the Writing Self-Regulatory Efficacy Scale was modified to include items assessing the participants' confidence in their ability to perform the writing skills included on the rubric used to give them feedback on their papers: Development, Clarity, Organization, Language, and Grammar. The PCA with varimax rotation of the results from this sample yielded a three-factor solution:

- Self-efficacy for Substantive writing skills

- Self-efficacy for Mechanical writing skills

- Self-efficacy for Self-Regulatory writing skills, which includes one's skill at performing some of the tasks involved in writing a paper, such as preparing an outline and writing a title, as well as one's ability to keep oneself on task and motivated.

The Writing Apprehension Test was modified also to include questions about one's apprehension about making mechanical errors. The PCA with varimax rotation yielded three factors:

- Enjoyment of Writing, enjoyment of sharing one's work with others

- Dislike of Writing, apprehension about having others read and evaluate one's written work

- Apprehension About Grammar, fear of making errors involving grammar, spelling, and punctuation.

The grade students received on a paper they had to write for their educational psychology class served as the measure of the dependent variable, writing performance. In addition to this overall grade, students were also graded with respect to the content

they conveyed as well as five aspects of their writing: Development, Clarity, Organization, Language, and Grammar.

Hierarchical regression analysis was used to determine the unique contribution of the participants' beliefs about writing, their writing self-efficacy, and their writing apprehension to all seven measures of their writing performance (their overall grade and their scores for Content, Development, Clarity, Organization, Language, and Grammar). The 10 beliefs about writing were entered in the first block, either the three self-efficacy subscale scores or a total self-efficacy score was included in the second block, and the three writing apprehension subscale scores were entered in the third block.

Major Findings

Based on the design and ensuing analyses, several significant findings emerged that contribute to the understanding of writing performance among Hispanic undergraduates. Those major followings included the demonstration that (a) the extent of the participants' adherence to various beliefs about writing significantly predicted their writing performance, (b) some beliefs about writing were adaptive, while others were maladaptive, (c) apprehension about making grammatical and other mechanical errors explains unique variance in writing performance and has decided negative effects, (d) all but one of the beliefs associated with expertise loaded together to form the most adaptive variable in the study, and (e) self-efficacy predicted writing performance, but the magnitude of the association was modest.

The Extent of the Participants' Adherence to Various Beliefs About Writing Significantly Predicted Their Writing Performance

As a group, the ten beliefs about writing explained a statistically significant portion of the variance in each of the regression equations, indicating that the type of

beliefs the students held about writing influenced not only their overall grade on their papers, but each of the six component grades. The proportion of the variance explained by these 10 beliefs ranged from 7.8% for the Content grade to 11.8% for the overall grade. As a point of comparison, the variance explained by writing self-efficacy, which was entered in the second step, ranged from 0.9% for the Content grade to 5.6% for the Organization score, and the variance explained by writing apprehension, which was entered in the third step, ranged from 1.4% for the Grammar grade to 3.9% for the Development grade.

Individually, five of the ten beliefs about writing were significant predictors of either the overall grade the participants received for their papers or at least one of the component scores. Two of these beliefs, Expert Orientation and Superficial Strategies, predicted overall writing performance. Expert Orientation, which reflects expert values including writing with clarity, development, and an audience orientation, as well as the expert practice of writing with an iterative process, was the most adaptive variable in this study. It was the only variable that explained a significant amount of the variance in each of the seven writing grades. It had the largest positive influence on writing performance with beta weights ranging from .15 for the Grammar grade to .23 for the Development grade. Expert Orientation also positively correlated with other variables related to good writing performance: writing self-efficacy and Enjoyment of Writing, an indication of low writing apprehension. No belief similar to Expert Orientation was examined in the previous studies cited, so it is not possible to compare these results to the research literature.

Superficial Strategies, an endorsement of basing one's writing on the arguments and quotations of authorities, and trying to impress readers with big words and complex

sentence structures, was negatively related to all of the writing grades and was a statistically significant negative predictor of all of the grades except the Development grade. The beta weights for this variable, which were high relative to those of the other beliefs, ranged from -.10 (*NS*) for Development to -.22 for the overall grade. Although Superficial Strategies did not correlate with writing self-efficacy, it did correlate with Dislike of Writing, an indication of writing apprehension and a correlate of weak writing performance in previous research (Hillocks, 1986).

Three other beliefs predicted one or two of the component grades. The direction of the relation of all three of these beliefs was contrary to theory and/or prior research. White and Bruning's (2005) Transactional belief, which is based on research on reading and maintains that writers should be cognitively and affectively engaged in their writing, split into two variables in this study: one cognitive, Writing Supports Thinking, and the other affective, Writing Is an Emotional and Personal Experience. Although the Transactional belief had a significant, positive influence on writing in the White and Bruning study, both of the beliefs that comprised the Transactional belief significantly and negatively influenced some of the components of writing performance in this study.

Mechanical Errors Are Shameful, the final belief that predicted at least one of the writing performance measures, was included in the study to see if those who are apprehensive about making grammatical and other mechanical errors also feel that such errors are shameful. A combination of shame and apprehension could be especially problematic, as will be discussed in the following section of this chapter. However, no such association emerged from the data.

Some Beliefs About Writing Were Adaptive, While Others Were Maladaptive

This study shed new light on the nature of the writing beliefs that were studied. Some of these beliefs had a positive relation to the grades the students received on their papers, while others had a negation relation.

Adaptive Beliefs About Writing

Expert Orientation. Expert Orientation was the independent variable with the strongest and most consistent positive relation to writing performance, both with respect to the overall grade and each of the component grades. This belief significantly and positively correlated with all of the writing scores and also had the largest positive beta weights in the regression equations. In addition, Expert Orientation was significantly and positively related to other predictors of good writing, namely all of the measures of writing self-efficacy as well as Enjoyment of Writing, an indicator of low writing apprehension.

Expert Orientation is a combination of all of the beliefs associated with expert practice except focusing on Substantive Issues First, which will be discussed later in this section. Expert Orientation reflects values such as writing with clarity, development, and an audience orientation, as well as the practice of using an iterative process to write. This belief thus advocates anticipating and answering the audience's questions, crafting arguments that are logical and convincing, making complicated information clear, and approaching writing as a process of reviewing, revisioning, and rethinking. This is an overall and coherent approach to writing. The beliefs in clarity, development, and an audience orientation complement one another in that clarity implies an audience for which one is clear, while development, the thorough explanation of one's position or findings, creates clarity. Achieving these qualities involves both substantive and

mechanical adjustments affecting everything from the overall approach to the topic and the organization of the paper to details such as vocabulary and sentence structure. An iterative writing process enables writers to break the overall task of writing down so they can realize such a comprehensive complement of goals. Expert Orientation thus enables a fluid writing process for the writer and a fluid reading experience for the audience for whom a clear text is fashioned.

Mechanical Errors Are Shameful. On balance, Mechanical Errors Are Shameful appeared to be adaptive. This variable significantly and positively correlated with the mechanical writing grades (Language and Grammar) and with Expert Orientation, the most adaptive variable in the study. It also significantly correlated with the belief that students should learn the Basics (Mechanics) before they learn substantive writing skills.

Nevertheless, the emergence of Mechanical Errors Are Shameful as an adaptive belief is surprising because shame is a negative emotion. As a point of comparison, the results of this study confirmed the research literature (e.g., Hillocks, 1986) which has consistently indicated that another negative emotion, apprehension, is negatively related to writing performance. Perhaps Mechanical Errors Are Shameful is adaptive for some students and not others, depending on the quality of their mechanical skills. For example, it may be that this belief motivates students with moderate mechanical skills to hone these skills to avoid being shamed, leads students with poor skills to avoid writing and the shaming associated with it, and/or serves as a justification for students with strong mechanical skills to engage in downward social comparison with peers who are less adept in this area.

Use Plain English. The items that comprised the Plain English subscale, which emerged during Phase II of this overall research project, split apart during the PCA with

varimax rotation conducted in Phase III, the current study, into two items that loaded on Expert Orientation and four that did not. Use Plain English was comprised of the four items that did not load on Expert Orientation.

Using plain language is a major issue in workplace writing (Mazur, 2000) both in the United States and internationally, as can be seen by the emergence of the international plain language movement, and the regulation of writing targeting consumers by agencies such as the U.S. Securities and Exchange Commission. However, it is unclear whether the participants in this study interpreted the phrase "plain English" to mean reader friendly. More research is needed with respect to how the participants interpreted the six plain English items to determine why two of the items in the initial subscale loaded with the most adaptive belief while the others did not. Interestingly, the words "plain English" did not appear in either of the two items that loaded on Expert Orientation, but did appear in some of the items that formed a separate factor. It may be the case that the phrase "plain language" does not carry the same meaning in academic contexts as it does in the workplace and in the public arena. In any event, because two of the items from the original scale loaded on Expert Orientation and because using plain language is a means of ensuring a documents' clarity—a quality already included in the Expert Orientation scale, it may be best to delete these final four items from the Beliefs About Writing Survey. Without further research, this variable offers no clear new information for scholars, teachers, or writers.

Maladaptive Beliefs About Writing

Superficial Strategies. Superficial Strategies, a belief in following the line of argument found in authoritative sources, using numerous quotations, and impressing one's audience with one's vocabulary and the complexity of the sentences one writes, was

the belief that was the strongest and most consistent predictor of weak writing. It was a significant negative correlate of all seven writing grades and was a significant negative predictor of six of the seven grades in the regression equations. Superficial Strategies did not significantly correlate with writing self-efficacy, although it did correlate with Dislike of Writing, an indication of apprehension about having one's writing evaluated and a consistent predictor of weak writing performance in the research literature (Hillocks, 1986). Superficial Strategies also significantly correlated with Minimize Revision, another indicator of weak writing. Superficial Strategies is unlike Expert Orientation in that it promotes focusing on oneself, specifically on the impression one is making on one's readers, as opposed to working more selflessly to satisfy one's readers by anticipating and fulfilling their needs in a manner that is interesting and easy to read and understand.

The writing processes associated with this belief are superficial even though some of them address core issues such as the content, logic, and the structure of a paper. For example, the practice of sticking with the views of authorities enables one to follow the line of argument in established references such as encyclopedias and textbooks as opposed to working to understand the content one is discussing, synthesize what one gleans from several types of sources, and then either presenting the material from a different angle, writing about one's own take on what one has learned, or fashioning a presentation oriented toward one's specific readers. A writing process aligned with this belief could thus easily deteriorate into cutting and pasting, stringing quotes together, or some similar attempt at getting the assignment over quickly with minimal effort and engagement. Similarly, trying to impress readers with big words could quickly degenerate into inserting words from a thesaurus without necessarily understanding what these

words mean or ensuring that they fit the context. Neither of these strategies is likely to result in good writing or in the development of writing skills.

Minimize Revision. Minimize Revision maintains that good writers do not need to revise much. This belief is at odds with expert process and was thus expected to be maladaptive in this study. As William Zinsser (2006) asserts in the opening paragraphs of his classic book, *On Writing Well,* "Rewriting is the essence of writing" (p. 4).

The results, which indicated that Minimize Revision was maladaptive in this study, thus supported the beliefs underlying expert practice. Minimize Revision was a significant negative correlate of the overall grade as well as the Content and Organization grades. Minimize Revision positively correlated with Superficial Strategies, the most maladaptive belief in this study, and negatively correlated with Expert Orientation, the most adaptive belief in this study, as well as with Substantive and Total writing self-efficacy, which have been associated with good writing performance in other research (e.g., Pajares & Valiante, 1999).

It may be the case that Minimize Revision is not as maladaptive in classrooms, where writing assignments tend to be exercises and teachers commonly grade writers only on their first drafts, than it is in the workplace, where documents are subjected to numerous revisions and to review by numerous employees throughout an organization, after which they are usually issued or published in some form. Further research is needed to explore this possibility as well as whether classroom practices such as teaching writing without allowing or requiring rewrites and calling for extensive on-demand writing with little or no time for revision may foster this maladaptive belief.

Writing Is a Personal and Emotional Experience. Writing Is a Personal and Emotional Experience asserts that writing involves affective engagement with the writing

process. This belief significantly and negatively predicted the Content and Language grades in the regression analyses. Its pattern of correlations was mixed, however. It positively correlated with Writing Is an Innate Gift, which has been associated with poor writing performance in other studies (e.g., Charney et al., 1995). On the other hand, it also positively correlated with Expert Orientation, the most adaptive of the beliefs, with Substantive Issues First while revising, an aspect of expert practice, and with Enjoyment of Writing, a correlate of good writing performance.

Such a mixed pattern of results may indicate that Writing Is a Personal and Emotional Experience is adaptive in some situations but not others. Perhaps emotional involvement such as that found in pride of authorship may, like training wheels, serve a purpose for young students learning to discipline themselves, after which it gets in the way. It may also be the case that affective engagement with writing is adaptive for some genres, such as creative writing (fiction, poetry, and drama) and some types of nonfiction like autobiography, advertising, or speech writing, that demand either personal involvement or the ability to engage an audience on an emotional level, but not for other genres, such as position papers and reports, that require more dispassionate analysis and argumentation. Further research is needed to explore when and how emotional involvement in writing supports writing performance and when it does not.

Basics (Mechanics) First. Those who endorse Basics (Mechanics) First believe that students must master grammar, punctuation, and spelling skills before they can move on to more advanced, substantive skills and before they can write anything complex. Basics (Mechanics) First was not a significant predictor of writing performance in the regression analyses, but the correlational analyses create an interesting profile. Basics (Mechanics) First significantly and negatively correlated with the Content and

Organization grades. It also significantly and positively correlated with two other maladaptive beliefs, Superficial Strategies and Mechanical Errors Are Shameful, and significantly and negatively correlated with Expert Orientation, the most adaptive writing belief.

This evidence that Basics (Mechanics) First is maladaptive supports expert writing and editing practice, which advocates a more balanced, two-pronged approach to revision during which substantive, not mechanical issues, are addressed first. These results also complement the almost one century of research demonstrating that direct, decontextualized teaching of grammar significantly and negatively affects writing performance (e.g., Andrews et al., 2006).

The findings related to Basics (Mechanics) First have many implications for students as well as teachers and educational policymakers. Students who believe both that Basics (Mechanics) should be mastered First and that they have become adept at mechanical writing skills could fall under the mistaken impression that they have become accomplished writers and thus develop a false notion of self-efficacy, when they are actually proficient at only one aspect of writing.

With respect to writing instruction, a belief in Mechanics (Basics) First could foster a practice of spending inordinate amounts of time and other resources teaching mechanical but not substantive writing skills. Graham et al. (1993) report that some teachers do take this approach, especially with struggling writers. Teachers trained with such an emphasis on writing mechanics would not necessarily know how to teach substantive writing skills even if they happened to realize that these skills are critical. It is plausible that an excessive focus on mechanics might help explain why NAEP writing

scores are increasing at the low and middle levels, but not at the advanced level, in our nation's schools.

Writing Is an Innate Gift. Writing Is an Innate Gift asserts that the ability to write well is something that one either has or lacks. This belief was nonsignificant in the regression equations and did not significantly correlate with any of the seven writing grades. Nevertheless, it significantly and positively correlated with other maladaptive beliefs including Minimize Revision, Superficial Strategies, and Writing Is a Personal and Emotional Experience. As in previous research (Charney et al., 1995), it negatively correlated with the writing self-efficacy scores and positively correlated with writing apprehension. In addition, it significantly and positively correlated with Plain English and significantly and negatively correlated with Writing Supports Thinking.

These results make intuitive sense as it is easy to see how students who think that they either have it or they do not when it comes to writing would see writing assignments as tasks that they should quickly dispense with by using the quick-fix approaches implied by Superficial Strategies and Minimal Revision as opposed to thinking through the content they are writing about (Writing Supports Thinking).

Beliefs That Were Not Clearly Adaptive or Maladaptive

Writing Supports Thinking. Writing Supports Thinking contends that writers gain a better understanding of their own and others' ideas, and develop new, creative concepts through the process of writing. This belief thus supports cognitive engagement with the writing process. Previous research (White & Bruning, 2005), the theory of teaching writing, and expert practice suggest that this belief is adaptive.

In this study, Writing Supports Thinking negatively predicted the Development grade in the regression equations, and it positively and significantly correlated with the

grades for Language and Grammar. In addition, Writing Supports Thinking positively and significantly correlated with Expert Orientation, the most adaptive belief in the study; with all of the writing self-efficacy scores; and with Enjoyment of Writing, a measure of low writing apprehension. It significantly and negatively correlated with Minimize Revision and Writing Is an Innate Gift, which were both maladaptive, and with Dislike of Writing, a measure of writing apprehension. However, it also correlated with Writing is a Personal and Emotional Experience and with Mechanical Errors Are Shameful.

These results are puzzling. The correlational results suggest that this belief is adaptive as it positively related to other adaptive beliefs and to writing self-efficacy and low writing apprehension, which are all associated with good writing performance. However, the regression analyses indicate that this belief is maladaptive in that it negatively predicted the Development grade. This is counterintuitive in that development requires thoughtfulness, consideration, and cognitive engagement. In addition, the correlational results indicate that Writing Supports Thinking is significantly and positively related to the grades for writing mechanics, a rule-based area where careful thought and deliberation would not seem to be useful. It may be the case that students who believed that Writing Supports Thinking did not receive higher grades on their papers because they had inadequate content knowledge to write about the assigned topic successfully. However, this explanation seems unsatisfying in that the students' Content scores were the highest of the component scores, suggesting that they did understand the subject matter they were discussing. It may also be the case that these students may not have been developmentally ready to use writing to think through the subject matter they were discussing or their own views on this material. These possibilities and mixed results

suggest the need for further research and more fine-grained analysis of this belief as well as the items comprising this subscale.

Substantive Issues First. Substantive Issues First advocates focusing on major issues, such as making one's main points and being clear, before taking care of details such as grammar and mechanics. As discussed in Chapter II, this belief provides a foundation for much expert writing practice. Professional writers and editors tend to take a two-pronged approach to drafting and revision: first substantive and then mechanical (Boston, 1986). Substantive editing, for example, takes an overall view of a document and deals with major concerns involving logic, content, and presentation, while mechanical editing addresses more local issues such as grammar, punctuation, and formatting. Substantive Issues First was the only belief associated with expert practice that did not load on Expert Orientation.

Substantive Issues First was not a significant predictor of writing performance in the regression equations, and it did not significantly correlate with any of the writing scores. The pattern of correlations between this belief and the other variables in this study is unclear. For example, Substantive Issues First correlated with Expert Orientation, the most adaptive belief about writing, and with Plain English, but also with Dislike of Writing, a measure of writing apprehension, and with Writing Is an Innate Gift and Writing Is a Personal and Emotional Experience, which were at least somewhat maladaptive. Substantive Issues First negatively correlated with its counterpoint, Basics (Mechanics) First.

Although this study did not support the adaptiveness of this belief, there is insufficient evidence to exclude it and strong practical reasons for investigating it further. As mentioned earlier, this belief provides the underpinning for a great deal of expert

writing practice. It is also logical: It makes no sense to exhaust oneself fine-tuning a document before one has settled on what it is supposed to say. Perhaps students will find this belief more compelling when they are more frequently given authentic assignments that call for rewriting and revision. Such assignments, which are recommended by Coker and Lewis (2008), would do a better job of preparing students for a transition from school to the workplace.

A Concluding Comment

This study examined only a few beliefs about writing. Many others are possible. As can be seen from this discussion, beliefs about writing beliefs are culturally constructed and disseminated, and probably are related to the pedagogy of teaching writing and writing strategies, the various writing genres, and the many contexts in which writers work. If additional research supports the finding that many of these beliefs are maladaptive, revising or abandoning the pedagogical techniques and the writing practices with which they are associated may help students write better and enjoy writing more.

Apprehension About Making Grammatical and Other Mechanical Errors

Explains Unique Variance in Writing Performance and Has Decided Negative Effects

As mentioned above, this study expanded a traditional view of writing apprehension and assessed the effects of this expanded construct on writing performance. Hillocks's (1986) and Pajares's (e.g., Pajares & Johnson, 1996) studies of the effects of writing apprehension on writing performance used the Writing Apprehension Test (Daly & Miller, 1975b) to assess writing apprehension. This test operationalizes writing apprehension as a fear of sharing one's written work with others and of having this work evaluated. The current study continued this tradition, but also added three questions to the Writing Apprehension Test that investigate writers' anxiety about making mechanical

errors involving grammar, spelling, and punctuation. A PCA with varimax rotation indicated that these three items created a separate factor, Apprehension About Grammar, that explains unique variance in writing apprehension.

The research conducted with the original Writing Apprehension Test supports Bandura's social cognitive theory (1997) by demonstrating a consistent, negative relation between writing apprehension and both writing self-efficacy and writing performance. Correlations between writing apprehension and writing performance ranged from -.03 to -.48 in the studies discussed in Chapter 2; correlations between writing apprehension and writing self-efficacy ranged from -0.09 and -.57 in the same body of work. After studying writing self-efficacy, writing apprehension, and writing performance with path analytic techniques, Pajares (Pajares & Valiante, 1997) concluded that writing self-efficacy nullifies writing apprehension.

In this study the effects of writing apprehension, as measured by the original Writing Apprehension Test, were nonsignificant when entered into the regression equations after the writing self-efficacy variables, just as they were in Pajares's studies. However, Apprehension About Grammar, the new variable, was a significant, negative predictor of four of the seven writing performance scores (the overall grade and the grades for the substantive skills: Development, Clarity, and Organization, even when entered in the regression equations after writing self-efficacy. Beta weights for Apprehension About Grammar ranged from -.22 for the Development grade to -.08 (NS) for the Language grade. Apprehension About Grammar and Dislike of Writing, the traditional measure of writing apprehension, also negatively and significantly correlated with all seven of the writing grades. In addition, Apprehension About Grammar

significantly and negatively correlated with all of the writing self-efficacy scores. It significantly and positively correlated with Dislike of Writing.

It is noteworthy that Apprehension About Grammar was a negative predictor of the grades for the substantive writing skills, but not the Grammar scores. Research is needed to investigate the mechanisms through which the two types of writing apprehension work and why one type may be much more maladaptive than the other. These findings also indicate the need for teaching methods that allow teachers to teach writing, including writing mechanics, without creating undue anxiety about making mechanical errors.

All But One of the Beliefs Associated with Expertise
Loaded Together to Form the Most Adaptive Variable in the Study

The fact that the expert beliefs loaded together is a testimony to the coherence of the expert orientation and processes. The association of this set of beliefs with good writing performance confirms the practical value of expert guidelines and practice, and the benefits of looking to experts in the workplace as well as in academe for guidance with respect to academic as well as workplace skills.

Self-Efficacy Predicted Writing Performance,
But the Magnitude of the Association Was Modest

The direction of the association between writing self-efficacy and overall writing performance was as expected, but the magnitude was less than anticipated. In some respects, the results were in accord with the bulk of the research literature. For example, as in the research literature (e.g., Pajares et al, 1999), high writing self-efficacy was positively associated with higher overall writing grades, and low writing self-efficacy was associated with lower overall writing grades. More specifically, the correlation

between mechanical writing self-efficacy and the overall grade students received on their papers was about the same as the correlations between writing self-efficacy and writing performance in the studies using the first generation of writing self-efficacy scales, which primarily assessed self-efficacy for mechanical skills. Further, the correlation between self-regulatory writing self-efficacy, which was assessed primarily by the items in Zimmerman and Bandura's (1994) original Writing Self-Regulatory Efficacy Scale, was .17, roughly the same as the correlation of .14 that Zimmerman and Bandura themselves reported in their study of undergraduates. However, in this study the correlation was statistically significant, while in the Zimmerman and Bandura study it was not.

In other respects, however, the magnitude of the results was more modest than expected. The correlations between total writing self-efficacy and writing performance were about the same as the correlations between mechanical self-efficacy and writing performance, as opposed to roughly double the magnitude seen in the second generation of writing self-efficacy studies (which assessed students' self-efficacy for substantive as well as mechanical writing skills) as compared to the first generation of these studies. Further, in the regression equations, total writing self-efficacy accounted for only 3% of the variance in the total grade, much less than the results in previous studies, which ranged up to 69% (Schunk & Swartz, 1993). Entering writing self-efficacy in the first step of the hierarchical regression, instead of in the second step, did not change these results appreciably.

It is possible that some of these disparities are related to key differences between these studies. For example, this study involved undergraduates in an upper level course, while most of the existing research was primarily done in K-12 settings, most often with elementary and junior high school students. In this study, writing performance was

assessed with the grade the students received on an important take-home assignment, while most of the studies in the existing literature used teacher ratings of the students' writing aptitude, the students' language arts grade for the semester, or on-demand writing samples prepared in about 15 to 20 minutes. Papers prepared in such a short time with little opportunity for reflection or revision would likely be much shorter and less developed and polished than papers prepared with time for reflection—rough drafts as opposed to papers submitted for a grade. The writing task in this study was also more ecologically valid than preparing an on-demand assignment for a visiting researcher.

These results also raise questions about the writing self-efficacy scale used in this study. However, this scale was written specifically to align with the rubric used to assess the quality of the students' writing; it also contained items adapted from other second-generation self-efficacy measures. More research is needed to explore these interesting findings. Additional studies might use this writing self-efficacy scale in different contexts, with different populations and writing assignments, and with different types of scaffolding of students' writing.

Limitations

As in any study, there were limitations. First, the study used a correlational design, which does not facilitate the exploration of cause-and-effect relations. Second, the participants were volunteers, raising the possibility that those who did not elect to participate fully and therefore complete all the research measures, albeit few, may be different in some important way from those who did participate (a few did not submit the paper, which was required to pass the course in which they were enrolled). Similarly, restricting the population of the study to Hispanic females limits the generalizability of the findings to other populations.

Third, all variables except the dependent variable were measured in a single sitting with self-reports. While self-reports are relatively inexpensive, easy to use, and ideal for measuring perceptions in exploratory studies such as this (Rogelberg & Luong, 1998), there can be problems with common method variance. As a result, the correlations among the research variables may be inflated (Podsakoff, Podsakoff, MacKenzie, & Lee, 2003). However, as recommended by Podsakoff et al., steps were taken such as informing participants there were no right or wrong answers and assuring participant confidentiality. Further, Harman's single-factor test was used as a diagnostic tool to determine the extent to which common method variance may be an issue (Podsakoff et al.). When employing this statistical procedure, the researcher conducts an exploratory factor analysis of all the self-report variables and subsequently interprets the unrotated factor solution. If a single factor emerges from the data analysis, this suggests that a substantial amount of common method variance is present. The PCA revealed five factors, providing insufficient evidence that common method variance was a problem in this investigation.

Fourth, self-report measures, too, only indicate the participants' perceptions about the variables. This study did not include observations or other measures that might confirm or refute the findings based on these measures. While having the participants all write the same paper eliminated some possible confounds, it also limited the generalizability of the results to this genre.

Finally, although consistent with a great deal of prior writing research (e.g., Pajares & Johnson, 1996; Rankin et al., 1993; Shell et al., 1989), operationalizing students' writing performance as the grade they receive on only one paper may be a limitation (Hayes et al., 2000).

Implications for Theory

This study tested Bandura's social cognitive theory as it relates to writing performance with a sample of Hispanic women in an ecologically valid context, an actual writing assignment that the students wrote outside the classroom for course credit. The overall research project of which this study is a part entailed the development of the first comprehensive set of beliefs about writing that are related to educational psychology and expert practice. The results indicate that a combination of students' beliefs about writing, their writing self-efficacy beliefs, and their writing apprehension explained approximately 15% of the variance in writing performance. Some beliefs about writing, such as Expert Orientation, were adaptive and strengthened writing performance, while other beliefs about writing, such as Superficial Strategies, were maladaptive and undermined performance. These findings support and extend Bandura's sociocognitive theory in that they demonstrate that a relatively new type of belief, beliefs about a domain—in this case writing, show promise of becoming an important element of Bandura's model. Further, the fact that these beliefs affected performance, even when studied in conjunction with self-efficacy beliefs, raises the possibility that constellations of beliefs—domain-specific beliefs and self-efficacy beliefs, as well as, say, expectancy beliefs—may affect performance in tandem.

This study also expanded the definition of writing apprehension to include a new variable, Apprehension About Grammar, which was a stronger negative predictor of writing performance than the extensively studied Dislike of Writing. In contrast to Dislike of Writing, Apprehension About Grammar negatively predicted writing performance even when writing self-efficacy was included in the regression equations.

Finally, this research illustrated the utility of studying expert writing values and practice. Expert Orientation, the belief about writing that comprised most of the expert values and practices studied, was the strongest positive predictor of writing performance in this study. This indicates that expert mindsets and practices can be beneficial outside the contexts in which they were developed and are worthy of scholarly investigation.

Suggestions for Further Research

These results of this examination point to the need for further investigation of these variables by means of different, larger samples that are more varied and balanced with respect to gender, race, and ethnicity; type of writing assignment; and context (e.g., academic/nonacademic). Additionally, research along the lines of Silva and Nicholls's study (1993) could investigate whether some beliefs are related to specific pedagogical approaches or, to extend this notion, whether they are more or less adaptive in various contexts. For instance, a belief in addressing Substantive Issues First might be more adaptive, and a belief in Minimizing Revision might be maladaptive, as expected, in contexts where revising, revisioning, and rewriting are expected and required. Further, a longitudinal study of the influence of beliefs about writing, writing self-efficacy, and writing apprehension on one another over time may reveal how these beliefs and affective states develop and interact and ultimately influence writing performance.

Although the measures developed for this research project show promise, they need further validation with different writing assignments and populations. Some of the subscales, particularly the Writing Supports Thinking scale, need modifications that strengthen their reliability. A number of specific questions were also raised during the study with respect to the measures, and specifically about several of the beliefs assessed by the Beliefs About Writing Survey. For example, further investigation is needed to

determine whether the belief that Mechanical Errors Are Shameful is adaptive in some contexts or with some people and not others. More research is also needed to determine if the belief that Writing Is a Personal and Emotional Experience is adaptive with respect to some genres, such as biography and creative writing, but not others, such as report writing. On the other hand, research is also needed to determine if certain methods of teaching writing, such as teaching writing without requiring or allowing rewriting, may foster maladaptive beliefs such as Minimize Revision. With respect to educational policy, more research may help determine if a belief in mastering the Basics (Mechanics) First could be associated with progress with respect to the basic, but not the advanced, writing skills assessed by the NAEP. As for writing apprehension, work is needed to determine why Apprehension About Grammar appears to be much more maladaptive than the more established Dislike of Writing.

Based on this study's findings, an intervention could be developed and tested experimentally to determine whether writing instruction focusing on domain-specific beliefs about writing can (a) change these beliefs, (b) improve performance, (c) increase writing self-efficacy, and/or (d) decrease writing apprehension.

This research on beliefs related to specific domains could also be extended to exciting new domains such as math, where student beliefs about, say, "plug-and-chug" versus conceptual approaches to problem solving could be tested with respect to possible links to math performance.

Further research may also support the development of Bandura's theory. It may be useful to investigate the effects of domain beliefs about writing on variables in Bandura's model other than self-efficacy and anxiety. For example, an investigation of the effects of domain beliefs on expectancy beliefs would seem worthwhile.

Implications for Practice

In my experience as a corporate trainer, directly and explicitly addressing course participants' beliefs about writing seemed to shorten the path to both writing competence and to more positive and productive attitudes about writing. In this study with undergraduates in a more formal academic context, domain beliefs about writing accounted for 12% of the variance in writing performance, supporting the possibility that these beliefs may be a worthwhile new leverage point for teaching students how to write. As such, the results support the statement of Graham et al. (1993) that "The knowledge, attitudes, and beliefs that students hold about writing play an important part in determining how the composing process is carried out and what the eventual shape of the written product will be" (p. 246).

The results may also be a caution to teachers with respect to how they teach writing, particularly writing strategies. For example, the emergence of Superficial Strategies (a belief maintaining that good writers convey the points made by authorities and use a lot of quotes, sophisticated vocabulary, and complex sentence structures) as one of the strongest negative predictors of writing performance indicates that we need to ensure that the strategies we teach students, such as recording and adapting information from outside sources, selecting and incorporating quotations in text, and varying and increasing the sophistication of their vocabularies, remain flexible and do not deteriorate into mechanical cutting and pasting.

The results related to the relatively strong negative effects of Apprehension About Grammar on writing performance can also be a valuable guide to teachers instructing students how to write. More specifically, these results indicate that the field needs new

methods and basic stances for teaching grammar that are less likely to produce anxiety and thus more likely to increase writing motivation.

Finally, these findings indicate potential new approaches for training preservice and practicing teachers to teach writing more effectively. Although teachers commonly receive instruction in how to teach reading, writing has remained, in the words of the National Commission on Writing (2003), "the neglected 'R" in the traditional trilogy of reading, 'riting, and 'rithmetic with respect to teacher training and professional development. Clearly, more needs to be done if we are to alter this troubling reality.

Appendix A

Rubric for Scoring the Writing Sample

EDP 3004/5053: Scoring Rubric/Writer's Checklist for E-folio Paper

	Target	Acceptable	Unacceptable
FEAP 7. Knowledge of human learning and development	Comprehensive discussion of theory in the writer's own words. Notes whether practices are age-appropriate with respect to children's cognitive and emotional development.	Discussion of theory adequate. Undue focus on secondary points. Sticks closely to the book/notes. Notes the age appropriateness of a few factors.	Discussion of theory sketchy or incorrect. Wording too close to the book/notes. Does not comment on whether practices are age-appropriate or makes inaccurate assessments.
FEAP 9. Sensitivity to cultural and linguistic issues	Points out issues unique to a particular culture and discusses them respectfully.	Mentions a few cultural issues, but does not discuss them in much depth.	Ignores cultural issues or views them through the lens of the writer's own culture.
FEAP 5. Understanding of learning environments	Insightful about learning environments and social interactions	Mentions a few environmental issues with sparse commentary.	Lists few, if any, environmental characteristics. Comments overly basic or off base.
Development of writer's own position on theory	Clearly and comprehensively discusses own views of learning theories as well as plans for applying them.	Discusses some preferences with respect to learning theory; has some ideas for application and practice.	Alludes to learning theory; haphazard plans for application.
Development, Argumentation, Persuasiveness, Analysis	Gives several, solid and appropriate reasons for the positions taken. Discusses all examples and explains how they support the points being made.	Supports the positions taken with a few examples, most of which are on target. Explains only some examples.	Offers few examples to support the positions taken or uses examples that are off-target. Overgeneralizes. Leaves it to the reader to determine how examples are relevant.
Clarity, Audience Awareness	Paper takes a clear position, has a definite focus, flows. Reader can easily appreciate the points being made. Writer anticipates and answers the reader's questions.	Paper takes a position and has some focus, although it has a good amount of "filler." Paper understandable to an outside reader willing to put in some work.	Difficult for the reader to follow, even with hard work. Assumes reader has extensive background knowledge relevant to the paper. Lots of "filler." Some passages awkward, garbled.
Organization	Organization suits the assignment. Important arguments and information prominently placed, and clearly laid out with supporting examples. Transitions help the reader follow along. Paragraph breaks clearly show where one topic ends and the next begins.	Organization adequately supports the purpose of the paper. Reader can find important points with some effort. Some transitions help the reader follow along. Most paragraphs well structured; others run on and ramble.	Paper disjointed. Reader must struggle to understand. Paragraphs run on, lack unifying themes.
Language	Vocabulary varied, appropriate for the audience and purpose of the paper. Appropriate word usage.	Vocabulary appropriate, but lacks variety or is too close to the book/notes. Some wordiness. Some problems with usage.	Vocabulary limited or too close to the text or other outside sources. Significant problems with usage. Considerable awkwardness and garble.
Grammar, Usage, Punctuation	Paper displays correct sentence structure, grammar, and mechanics.	Considerable grammatical and mechanical errors. Some run-on sentences.	Grammar and mechanics lacking. Many run-on sentences.

Appendix B

Survey Instrument Package

This survey is part of a research project exploring writing performance. Your participation in this project is important in that it may help us find ways to help students write better. Your responses will be kept confidential. People will see only summaries of the entire group's responses. We thank you sincerely for your assistance.

REMEMBER THAT THERE ARE NO RIGHT OR WRONG ANSWERS TO ANY OF THESE QUESTIONS. PLEASE RESPOND BASED ON YOUR OWN BELIEFS AND EXPERIENCES.

Part I. Please respond to each of the following items using the following five-point scale: (1) Disagree strongly; (2) Disagree; (3) Unsure; (4) Agree (5) Agree strongly

	Disagree Strongly				Agree Strongly
1. Good writers include a lot of quotes from authorities in their writing.	1	2	3	4	5
2. Writing's primary purpose is to give other people information.	1	2	3	4	5
3. A primary goal of writing should be to have to make as few changes as possible.	1	2	3	4	5
4. Writing should focus on the information in books and articles.	1	2	3	4	5
5. The key to successful writing is accurately reporting what authorities think.	1	2	3	4	5
6. Writing requires going back over it to improve what has been written.	1	2	3	4	5
7. Writing is a process involving a lot of emotion.	1	2	3	4	5
8. The most important reason to write is to report what authorities think about a subject.	1	2	3	4	5
9. It's important to develop a distinctive writing style.	1	2	3	4	5
10. Good writers stick closely to the information they have about a topic.	1	2	3	4	5
11. Good writing involves editing many times.	1	2	3	4	5
12. Writing often involves peak experiences.	1	2	3	4	5
13. Writing helps me understand better what I'm thinking about.	1	2	3	4	5
14. I always feel that just one more revision will improve my writing.	1	2	3	4	5
15. Writing helps me see the complexity of ideas.	1	2	3	4	5

1

		Disagree Strongly				Agree Strongly
16. My thoughts and ideas become more clear to me as I write and rewrite.		1	2	3	4	5
17. Writers' views should show through in their writing.		1	2	3	4	5
18. Writing is often an emotional experience.		1	2	3	4	5
19. Writers need to immerse themselves in their writing.		1	2	3	4	5
20. The ability to write is a gift that some people have and some people don't.		1	2	3	4	5
21. It's best to use simple, straightforward words.		1	2	3	4	5
22. Good writers don't need to revise.		1	2	3	4	5
23. Students need to be good at grammar before they can write.		1	2	3	4	5
24. Papers with grammatical and spelling mistakes are embarrassing.		1	2	3	4	5
25. Good writers have sophisticated vocabularies.		1	2	3	4	5
26. Writing helps new ideas emerge.		1	2	3	4	5
27. Good writers make complicated information clear.		1	2	3	4	5
28. When revising, writers should first go back to their notes and make sure that they met the substantive requirements.		1	2	3	4	5
29. Good writers are sensitive to their readers.		1	2	3	4	5
30. Revision is necessary only if the writer doesn't plan and draft carefully.		1	2	3	4	5
31. Good writers support the points they're trying to make.		1	2	3	4	5
32. Good writers focus on the "big picture" before worrying about spelling and grammar.		1	2	3	4	5
33. Some people just know how to write.		1	2	3	4	5
34. Students need to master the basics of writing—grammar, punctuation and spelling--before they learn to write anything complex.		1	2	3	4	5

	Disagree Strongly				Agree Strongly
35. Good writers demonstrate the breadth of their vocabularies by using a lot of big words.	1	2	3	4	5
36. Skillful writers don't revise much.	1	2	3	4	5
37. Good writers support their points effectively.	1	2	3	4	5
38. It's best to use plain English.	1	2	3	4	5
39. Papers with typos are a terrible embarrassment.	1	2	3	4	5
40. Writers shouldn't worry about spelling and grammar until they are sure they've made their main points.	1	2	3	4	5
41. Good writers adapt their message to their readers.	1	2	3	4	5
42. Writers are born, not taught.	1	2	3	4	5
43. Good writers use the sentence structure that best conveys their ideas.	1	2	3	4	5
44. Writers should focus first and foremost on the basics—spelling and grammar.	1	2	3	4	5
45. During revision, one should carefully check one's manuscript for both substantive and mechanical problems.	1	2	3	4	5
46. Good writers demonstrate their skill at crafting complex sentences.	1	2	3	4	5
47. The key to good writing is conveying information clearly.	1	2	3	4	5
48. Good writers keep their audience in mind.	1	2	3	4	5
49. Good writers write it right the first time.	1	2	3	4	5
50. Writing is a process of reviewing, revisioning, and rethinking.	1	2	3	4	5
51. You can ruin a brilliant paper with just a few grammatical errors.	1	2	3	4	5
52. When writing, it's best to use proven formats and templates, and then fill in the important information.	1	2	3	4	5

	Disagree Strongly				Agree Strongly
53. Students can't really learn to write until they've mastered the punctuation rules.	1	2	3	4	5
54. Good writers take care of the big issues—making their points, being clear—before they take care of details.	1	2	3	4	5
55. Good writers thoroughly explain their opinions and findings.	1	2	3	4	5
56. One of the most important things about writing is the quality of the thinking it conveys.	1	2	3	4	5
57. There's no excuse for misspellings and punctuation errors.	1	2	3	4	5
58. Good writers are oriented toward their readers.	1	2	3	4	5
59. Readers are impressed by big words.	1	2	3	4	5
60. Good writers are logical and convincing.	1	2	3	4	5
61. Some people just have a talent for writing.	1	2	3	4	5
62. Good writers use plain language.	1	2	3	4	5
63. If you plan your document well, you won't have to revise.	1	2	3	4	5
64. Revision is a multi-stage process.	1	2	3	4	5
65. While drafting, one should focus on getting one's ideas on paper and worry about spelling and mechanics later.	1	2	3	4	5
66. Good writing has simple sentences, nothing fancy.	1	2	3	4	5
67. Good writers don't confuse their readers.	1	2	3	4	5
68. Good writers are reader-friendly.	1	2	3	4	5
69. As you improve as a writer, you revise less.	1	2	3	4	5
70. It's humiliating to give a PowerPoint presentation with typos and misspellings.	1	2	3	4	5
71. Good writing sounds natural, not stiff.	1	2	3	4	5
72. Good writers don't let their choice of words overshadow their message.	1	2	3	4	5

	Disagree Strongly				Agree Strongly
73. Grammar is important, but it is not as essential as the point the writer is trying to make.	1	2	3	4	5
74. It's important to select the words that suit your purpose, audience, and occasion.	1	2	3	4	5
75. Some people won't write well no matter how hard they work.	1	2	3	4	5
76. Good writers anticipate and answer their audience's questions.	1	2	3	4	5
77. The key to good writing is revising.	1	2	3	4	5

Part II. Please rate how confident you are that you can perform the tasks described in the statements below. Indicate your level of confidence by <u>putting a slash mark (/) anywhere on the line</u> below ranging from 0 (i.e., complete lack of confidence) to 100 (i.e., total confidence). A sample item is provided for you.

Sample:

A. When it comes to cooking, I can prepare a four-course meal with ease.

0   /   100

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1. When given a specific writing assignment, I can come up with a suitable topic in a short time.

 0   100

2. I can start writing with no difficulty.

 0   100

3. I can construct a good opening sentence quickly.

 0   100

4. I can come up with an unusual opening paragraph to capture my readers' interest.

 0   100

5. I can write a brief, informative overview that prepares readers well for the main thesis of my paper.

 0   100

6. I can use my first attempts at writing to suit the needs of my audience.

0   100

7. I can adjust the style of my writing to suit the needs of any audience.

0   100

8. I can find a way to concentrate on my writing even when there are many distractions around me.

0   100

9. When I have a pressing deadline on a paper, I can manage my time efficiently.

0   100

10. I can meet the writing standards of an evaluator who is very demanding.

0   100

11. I can come up with memorable examples quickly to illustrate an important point.

0   100

12. I can rewrite my wordy or confusing sentences clearly.

0   100

13. When I need to make a subtle or an abstract idea more imaginable, I can use words to create a vivid picture.

0   100

14. I can locate and use appropriate reference sources when I need to document an important point.

0   100

15. I can write very effective transitional sentences from one idea to another.

0   100

16. I can refocus my concentration on writing when I find myself thinking about other things.

0   100

17. When I write on a lengthy topic, I can create a variety of good outlines for the main my paper.

0   100

18. When I want to persuade a skeptical reader about a point, I can come up with a convincing quote from an authority.

0   100

19. When I get stuck writing a paper, I can find ways to overcome the problem.

0   100

20. I can find ways to motivate myself to write a paper even when the topic holds little interest.

0   100

21. When I have written a long or complex paper, I can find and correct all my grammatical errors.

0   100

22. I can revise a first draft of any paper so that it is shorter and better organized.

0   100

23. When I edit a complex paper, I can find and correct all my grammatical errors.

0   100

24. I can find other people who will give critical feedback on early drafts of my paper.

0   100

25. When my paper is written on a complicated topic, I can come up with a short, informative title.

0   100

26. I can correctly spell all of the words in the papers I write.

0   100

27. I can correctly punctuate the papers I write.

0   100

28. I can write a simple sentence with proper punctuation and grammatical structure.

0   100

29. I can correctly use plurals, verb tenses, prefixes, and suffixes.

0   100

30. I can write compound and complex sentences with proper punctuation and grammatical structure.

0   100

31. When I write, I can find enough to say.

0   100

32. I can organize sentences into a paragraph so as to clearly express a theme.

0   100

33. I can write a paper with good overall organization (e.g., ideas in order, effective transitions.)

0   100

34. I can outline my ideas.

0   100

35. I can successfully complete the writing assignments that I commonly receive.

0   100

36. I can convince my reader of the points I'm trying to make.

0   100

37. I can focus my paper on the main ideas I'm trying to get across.

0   100

38. I can put my ideas into words.

0   100

39. I know what type of arguments will convince my audience.

0   100

40. I can easily understand what's expected from me regarding my writing assignments.

0   100

41. I can plan what I want to say before I start writing.

0   100

42. I can fix my grammatical errors.

0   100

43. I can logically make the points I want to convey.

0   100

44. I notice formatting errors when I revise.

0   100

45. I can find the words I need to convey my message.

0   100

46. I can figure out what to write about, what to say.

0   100

47. I can revise my writing to make it better.

0   100

48. I can write so people understand what I mean.

0   100

49. I can determine what kind of evidence I need to support the points I'm making.

0   100

50. I can write so that people don't have to ask a lot of questions about what I mean.

0   100

51. I can tailor my paper to the demands of the assignment.

0   100

52. I can find the words to express my ideas.

0   100

53. I know how to determine what my audience wants to know about my topic.

0   100

54. I can select a format that will effectively convey my message.

0   100

55. I can spot my mechanical errors when I revise.

0   100

56. I can think of the right words for my ideas

0   100

57. I can write so that people don't have to reread my papers to understand them.

0   100

58. I can select words that suit my writing project.

0   100

59. I can revise to make my paper easier to read.

0   100

60. I know how to assess what my audience wants and needs.

0   100

Part III. Below are a series of statements about writing. There are no right or wrong answers to these statements. Please indicate the degree to which each statement applies to you by circling whether you (1) Disagree strongly, (2) Disagree, (3) Are uncertain, (4) Agree, or (5) Strongly agree with this statement. While some of the statements may seem repetitious, take you time and try to be as honest as possible.

	Disagree Strongly				Agree Strongly
1. I avoid writing.	1	2	3	4	5
2. I have no fear of my writing being evaluated.	1	2	3	4	5
3. I look forward to writing down my ideas.	1	2	3	4	5
4. I am afraid of writing essays when I know they will be evaluated.	1	2	3	4	5
5. Taking a composition course is a very frightening experience.	1	2	3	4	5
6. Handing in a composition makes me feel good.	1	2	3	4	5

	Disagree Strongly				Agree Strongly
7. My mind seems to go blank when I start to work on a composition.	1	2	3	4	5
8. I worry that I may make a grammatical error.	1	2	3	4	5
9. Expressing my ideas through writing seems to be a waste of time.	1	2	3	4	5
10. I would enjoy submitting my writing to magazines for evaluation and publication.	1	2	3	4	5
11. I like to write my ideas down.	1	2	3	4	5
12. I feel confident in my ability to clearly express my ideas in writing.	1	2	3	4	5
13. I like to have my friends read what I have written.	1	2	3	4	5
14. I'm nervous about writing.	1	2	3	4	5
15. I'm afraid that I will make a punctuation error.	1	2	3	4	5
16. People seem to enjoy what I write.	1	2	3	4	5
17. I enjoy writing.	1	2	3	4	5
18. I never seem to be able to clearly write down my ideas.	1	2	3	4	5
19. Writing is a lot of fun.	1	2	3	4	5
20. I expect to do poorly in composition classes even before I enter them.	1	2	3	4	5
21. I like seeing my thoughts on paper.	1	2	3	4	5
22. Discussing my writing with others is an enjoyable experience.	1	2	3	4	5
23. I have a terrible time organizing my ideas in a composition course.	1	2	3	4	5
24. When I hand in a composition, I know I'm going to do poorly.	1	2	3	4	5
25. It's easy for me to write good compositions.	1	2	3	4	5
26. I don't think I write as well as most people.	1	2	3	4	5

	Disagree Strongly				Agree Strongly
27. I'm afraid that I may miss a misspelled word or typo.	1	2	3	4	5
28. I don't like my compositions to be evaluated.	1	2	3	4	5
29. I'm no good at writing.	1	2	3	4	5

Part IV. Background Information

1. What is your age? _____ years

2. Your gender is *(circle one)*: a) male   b) female

3. Your race/ethnicity is *(circle one)*:
   a) Asian b) Black c) Hispanic d) White e) Other *(please specify)*: _____

4. What was the <u>first</u> language you learned? *(circle one)*
   a) English b) Spanish c) French d) Other (please specify)_____
   e) Bilingual (learned two or more languages <u>at the same time</u> while a young child) Please specify languages _____ and _____.

5. Are you a freshman, sophomore, junior, senior, or master's student? _____

6. What is your major? _____

Part V. Predictions. Your comments will not affect your grade in any way.

1. What grade do you think you will get on your efolio paper?

2. Do you plan to rewrite your paper in an attempt to get a higher grade?

Part VI. Is there anything you'd like to add or comment on?

Thank you so very much!

References

Achieve, Inc. (2005). *Rising to the challenge: Are high school graduates prepared for college and work?* Washington, DC: Author.

American Psychological Association. (2001). *Publication manual of the American Psychological Association.* (5th ed.). Washington: American Psychological Association.

Andrade, H. G., & Boulay, B. A. (2003). Role of rubric-referenced self-assessment in learning to write. *The Journal of Educational Research, 97*(1), 21-34.

Anderson, P. V. (1995). *Technical writing: A reader-centered approach.* (3rd ed.). Fort Worth, TX: Harcourt Brace.

Andrews, R., Torgerson, C., Beverton, S., Freeman, A., Locke, T., Low, G., Robinson, A., & Zhu, D. (2006). The effect of grammar teaching on writing development. *British Educational Research Journal, 32*(1), 39-55.

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44,* 1175-1184.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: W. H. Freeman.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52,* 1-26.

Barnum, C. M., & Carliner, S. (1993). *Techniques for technical communicators*. New York: Macmillan.

Bazerman, C. (2008). *Handbook of research on writing: History, society, school, individual, text.* New York: Erlbaum.

Beach, R., & Friedrich, T. (2006). Response to writing. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 222-234). New York: Guilford.

Beaufort, A. (2008). Writing in the professions. In C. Bazerman (Ed.), *Handbook of research on writing* (pp. 221-235). New York: Erlbaum.

Bernstein, R. (2005, June 9). Hispanic population passes 40 million, Census Bureau reports. U.S. Census Bureau News. Retrieved July 17, 2009, from http://www.census.gov/Press-Release/www/releases/archives/population/005164.html

Bline, D., Lowe, D. R., Meixner, W. F., Nouri, H., & Pearce, K. (2001). A research note on the dimensionality of Daly and Miller's Writing Apprehension Scale. *Written Communication, 18*(1), 61-79.

Boice, R. (1982). Teaching of writing in psychology: A review of sources. *Teaching of psychology*, *9*(3), 143-147.

Boston, B. O. (1986). *Stet! Tricks of the trade for writers and editors.* Alexandria, VA: Editorial Experts, Inc.

Braddock, R., Lloyd-Jones, R., & Schoer, L. (1963). *Research in written communication.* Champaign, IL: National Council of Teachers of English.

Buehl, M. M., Alexander, P. A., & Murphy, P. K. (2002). Beliefs about schooled knowledge: Domain specific or domain general? *Contemporary Educational Psychology, 27,* 415-449.

Chamberlain, S. T., & Hale, B. D. (2007). Competitive state anxiety and self-confidence: Intensity and direction as relative predictors of performance on a golf putting task. *Anxiety, Stress, and Coping, 20*(2), 197-207.

Charney, D., Newman, J. H., & Palmquist, M. (1995). "I'm just no good at writing":

   Epistemological style and attitudes toward writing. *Written Communication, 12*,

   298-329.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the*

   behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

Coker, D., & Lewis, W. E. (2008). Beyond *Writing Next*: A discussion of writing

   research and instructional uncertainty. *Harvard Educational Review, 78*(1), 231-

   251.

Cooper, C. R., (1977). Holistic evaluation of writing. In C. Cooper & L. Odell (Eds.),

   Evaluating writing: Describing, measuring, judging (pp. 3-32). Urbana, IL:

   National Council of Teachers of English.

Daly, J. A., & Miller, M. D. (1975a). Apprehension of writing as a predictor of message

   intensity. *The Journal of Psychology, 89,* 175-177.

Daly, J. A., & Miller, M. D. (1975b). The empirical development of an instrument to

   measure writing apprehension. *Research in the Teaching of English, 9,* 242-249.

De Corte, E., Op't Eynde, P., & Verschaffel, L. (2002). "Knowing what to believe": The

   relevance of mathematical beliefs for mathematics education. In B. K. Hofer & P.

   R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about*

   knowledge and knowing (pp. 297-320). New York: Erlbaum.

Diederich, P. B. (1966). How to measure growth in writing ability. *English Journal, 55,*

   435-449.

Dumaine, D. (1989). *Write to the top: Writing for corporate success.* New York: Random

   House.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*:256-273.

Field, A. (2005). *Discovering Statistics using SPSS* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational research: An introduction (6th ed.)* White Plains, NY: Longman.

Gay, L. R. (1992). *Educational research: Competencies for analysis and application (4th ed.).* New York: Merrill.

Glaser, R., & Chi, M. T. H. (1988). Overview. In M. T. H. Chi, R. Glaser, & M. J. Farr (Eds.), *The nature of expertise* (pp. xv-xxviiii). Hillsdale, NJ: Erlbaum.

Graham, S. (2005, April). *Lessons learned from 25 years of research: Writing, writing development, writing instruction, and students with special needs.* Address given at a meeting of the Council for Exceptional Children, Baltimore.

Graham, S., & Harris, K. R. (1989). Components analysis of cognitive strategy instruction: Effects on learning disabled students' compositions and self-efficacy. *Journal of Educational Psychology, 81*, 353-361.

Graham, S., & Perin, D. (2007a). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology, 99*(3), 445-476.

Graham, S., & Perin, D. (2007b). What we know, what we still need to know: Teaching adolescents to write. *Scientific Studies of Reading, 11*(4), 313-335.

Graham, S., & Perin, D. (2007c). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools—A report to Carnegie Corporation of New York.* Washington, DC: Alliance for Excellent Education.

Graham, S., Schwartz, S. S., & MacArthur, C. A. (1993). Knowledge of writing and the composing process, attitude toward writing, and self-efficacy for students with and without learning disabilities. *Journal of Learning Disabilities, 26*, 237-249.

Gregorian, V. (2007). Foreword. In S. Graham & D. Perin. *Writing next: Effective strategies to improve writing of adolescents in middle and high schools—A report to Carnegie Corporation of New York* (pp. 1-2). Washington, DC: Alliance for Excellent Education.

Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research: Vol. 3* (pp. 403-422). Mahwah, NJ: Erlbaum.

Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis (5th ed.).* Upper Saddle River, NJ: Prentice Hall.

Hammer, D., & Elby, A. (2002). On the form of a personal epistemology. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 169-190). New York: Erlbaum.

Hayes, J. R., Hatch, J., & Silk, C. M. (2000). Does holistic assessment predict writing performance? Estimating the consistency of student performance on holistically scored writing assessments. *Written Communication, 17*(1), 3-26.

Hillocks, G., Jr. (1986). *Research on written composition.* Urbana, IL: National Conference on Research in English and ERIC Clearinghouse on Reading and Communication Skills.

Hillocks, G., Jr. (2006). Middle and high school composition. In P. Smagorinsky (Ed.), *Research on composition: Multiple perspectives on two decades of change* (pp. 48-77). New York: Teachers College Press.

Hillocks, G., Jr. (2008). Writing in secondary schools. In C. Bazerman (Ed.), *Handbook of research on writing* (pp. 311-329). New York: Erlbaum.

Hofer, B. K., & Pintrich, P. R. (1997). The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of Educational Research, 67,* 88-140.

Kellogg, R. T., & Whiteford, A. P. (2009). Training advanced writing skills: The case for deliberate practice. *Educational Psychologist, 44*(4), 250-266.

Kiuhara, S. A., Graham, S., & Hawken, L. S. (2009). Teaching writing to high school students: A national survey. *Journal of Educational Psychology, 101,* 136-160.

Lavelle, E. (1993). Development and validation of an inventory to assess to processes in college composition. *British Journal of Educational Psychology, 63*, 489-499.

Lavelle, E. (2001). Writing styles of college students. *Journal of College Reading and Learning, 32*(1), 60-67.

Lavelle, E. (2003). Writing approaches of college students: A relational perspective. *TLAR, 8*(2), 5-17.

Lavelle, E., & Guarino, A. J. (2003). A multidimensional approach to understanding college writing. *Educational Psychology, 23*, 295-305.

Lavelle, E., Smith, J., & O'Ryan, L. (2002). The writing approaches of secondary students. *British Journal of Educational Psychology, 72*, 399-418.

Lavelle, E., & Zuercher, N. (2001). The writing approaches of university students. *Higher Education, 42*, 373-391.

MacArthur, C. A., Graham, S., & Fitzgerald, J. (2006). *Handbook of writing research.* New York, Guilford.

Mazur, B. (2000). Revisiting plain language. *Technical communication: Journal of the Society for Technical Communication, 47*(2), 205-211.

McCarthy, P., Meier, S., & Rinderer, R. (1985). Self-efficacy and writing: A different view of self-evaluation. *College Composition and Communication, 36,* 465-471.

McLeod, S. (1987). Some thoughts about feelings: The affective domain and the writing process. *College Composition and Communication, 38*, 426-435.

Meier, S., McCarthy, P. R., & Schmeck, R. R. (1984). Validity of self-efficacy as a predictor of writing performance. *Cognitive Therapy and Research, 8*(2), 107-120.

Miller, C. R., & Charney, D. (2008). Persuasion, audience, and argument. In C. Bazerman (Ed.), *Handbook of research on writing* (pp. 583-598). New York: Erlbaum.

Molpus, A. R. (1990). *The expert editor: Tips, advice, insights, and solutions.* Alexandria, VA: Editorial Experts, Inc.

Murphy, S., & Yancey, K. B. (2008). Construct and consequence: Validity in writing assessment. In C. Bazerman (Ed.), *Handbook of research on writing* (pp. 365-385). New York: Erlbaum.

Myers, R. (1990). *Classical and modern regression with applications* (2nd ed.). Boston, MA: Duxbury Press.

National Commission on Writing. (2003, April). *The neglected "R": The need for a writing revolution.* Retrieved January 16, 2009, from http://www.writingcommission.org/report.html

National Commission on Writing. (2004, September). *Writing: A ticket to work...or a ticket out: A survey of business leaders.* Retrieved May 3, 2005, from http://www.writingcommission.org/report/html

National Commission on Writing. (2005, July). *Writing: A powerful message from state government.* Retrieved January 15, 2009, from http://www.writingcommission.org/report.html

National Commission on Writing. (2006, May). *Writing and school reform.* Retrieved January 15, 2009, from http://www.writingcommission.org/report.html

National Council for Accreditation of Teacher Education. (2005, October). *Guidelines for program reviewers.* Retrieved February 27, 2009, from http://www.ncate.org/documents/GuidelinesforReviewers102604.doc

National Council of Teachers of English, James R. Squire Office of Policy Research. (2008). *Writing now: A policy research brief produced by the National Council of Teachers of English. Retrieved* January 15, 2009, from http://www.ncte.org/library/NCTEFiles/Resources/PolicyResearch/WrtgResearch Brief.pdf

National Council of Teachers of English, Task Force on SAT and ACT Writing Tests. (2005, April). *The impact of the SAT and ACT timed writing tests.* Retrieved February 5, 2009, from http://www.ncte.org/library/NCTEFiles/Resources/Positions/SAT-ACT-tf-report.pdf

Nelson, N. (2008). The reading-writing nexus in discourse research. In C. Bazerman (Ed.), *Handbook of research on writing* (pp. 435-450). New York: Erlbaum.

Nunnally, J. C. (1967). *Psychometric theory.* New York: McGraw Hill.

Office of Institutionalized Research, Florida International University (n.d.). Common

    data set for 2008-09. Retrieved January 18, 2010, from

    http://www.fiu.edu/oir/cds/CDS2008.pdf

Pajares, F. (1997). Current directions in self-efficacy research. In M. Maehr & P. R.

    Pintrich (Eds.), *Advances in motivation and achievement* (pp. 1-49). Greenwich,

    CT: JAI Press.

Pajares, F., Britner, S. L., & Valiante, G. (2000). Relation between achievement goals

    and self-beliefs of middle school students in writing and science. *Contemporary*

    Educational Psychology, 25, 406-422.

Pajares, F., Hartley, J., & Valiante, G. (2001). Response format in writing self-efficacy

    assessment: Greater discrimination increases prediction. *Measurement and*

    Evaluation in Counseling and Development, 33, 214-221.

Pajares, F., & Johnson, M. J. (1994). Confidence and competence in writing: The role of

    self-efficacy, outcome expectancy, and apprehension. *Research in the Teaching of*

    English, 28(3), 313-331.

Pajares, F., & Johnson, M. J. (1996). Self-efficacy beliefs and the writing performance of

    entering high school students. *Psychology in the Schools, 33,* 163-175.

Pajares, F., Miller, D. M., & Johnson, M. J. (1999). Gender differences in writing self-

    beliefs of elementary school students. *Journal of Educational Psychology, 91*(1),

    50-61.

Pajares, F., & Valiante, G. (1997). Influence of self-efficacy on elementary students'

    writing. *The Journal of Educational Research, 90*(6), 353-360.

Pajares, F., & Valiante, G. (1999). Grade level and gender differences in the writing self-beliefs of middle school students. *Contemporary Educational Psychology, 24,* 390-405.

Pajares, F., & Valiante, G. (2001). Gender differences in writing motivation and achievement of middle school students: A function of gender orientation? *Contemporary Educational Psychology, 26,* 366-381.

Pajares, F., & Valiante, G. (2006). Self-efficacy beliefs and motivation in writing development. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 158-170). New York: Guilford.

Palmquist, M., & Young, R. (1992). The notion of giftedness and student expectations about writing. *Written Communication, 9,* 137-168.

Pearson, P. D., Barr, R., Kamil, M. L., & Mosenthal, P. B. (1984). *Handbook of reading research.* Hillsdale, NJ: Erlbaum.

Podsakoff, N., Podsakoff, P. M., MacKenzie, S. B., & Lee, J. (2003). Common method bias in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88,* 879-903.

Radcliffe, L. (2008, January 20). Teachers have a bad spell. *Miami Herald,* p. 5L.

Rankin, J. L., Bruning, R. H., & Timme, V. L. (1994). The development of beliefs about spelling and their relationship to spelling performance. *Applied Cognitive Psychology, 8,* 213-232.

Rankin, J. L., Bruning, R. H., Timme, V. L., & Katkanant, C. (1993). Is writing affected by spelling performance and beliefs about spelling? *Applied Cognitive Psychology, 7,* 155-169.

Reep, D. C. (1994). *Technical writing: Principles, strategies, and readings* (2nd ed.). Boston: Allyn and Bacon.

Rogelberg, S. G., & Luong, A. (1998). Nonresponse to mailed surveys: A review and guide. *Current Directions in Psychological Science, 7*, 60-65.

Rogers, L. A., & Graham, S. (2008). A meta-analysis of single subject design writing intervention research. *Journal of Educational Psychology, 100*(4), 879-906.

Salahu-Din, D., Perksy, H., & Miller, J. (2008). *The Nation's Report Card: Writing 2007* (NCES 2008-468). Washington, DC: National Center for Education Statistics, U.S. Department of Education.

Schommer, M. (1990). Effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology, 82*(3), 498-504.

Schommer, M., Crouse, A., & Rhodes, N. (1992). Epistemological beliefs and mathematical text comprehension: Believing it is simple does not make it so. *Journal of Educational Psychology, 84*(4), 435-443.

Schommer-Aikins, M. (2002). An evolving theoretical framework for an epistemological belief system. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 103-118). New York: Erlbaum.

Schraw, G., & Bruning, R. (1996). Readers' implicit models of reading. *Reading Research Quarterly, 31,* 290-305.

Schraw, G., & Bruning, R. (1999). How implicit models of reading affect motivation to read and reading engagement. *Scientific Studies of Reading, 3*(3), 281-302.

Schunk, D. H. (2003). Self-efficacy for reading and writing: Influence of modeling, goal setting, and self-evaluation. *Reading & Writing Quarterly, 19,* 159-172.

Schunk, D. H., & Swartz, C. W. (1993). Goals and progress feedback: Effects on self-efficacy and writing achievement. *Contemporary Educational Psychology, 18*, 337-354.

Scroggins, M. J. (1990). Are there such things as editorial absolutes? In A. R. Molpus (Ed.), *The expert editor: Tips, advice, insights, and solutions* (pp. 17-19). Alexandria, VA: Editorial Experts, Inc.

Shell, D. F., Colvin, C., & Bruning, R. H. (1995). Self-efficacy, attribution, and outcome expectancy mechanisms in reading and writing achievement: Grade-level and achievement-level differences. *Journal of Educational Psychology, 87*, 386-398.

Shell, D. F., Murphy, C.C., & Bruning, R. H. (1989). Self-efficacy and outcome expectancy mechanisms in reading and writing achievement. *Journal of Educational Psychology, 81*, 91-100.

Shermis, M. D., Burstein, J., & Leacock, C. (2006). Application of computers in assessment and analysis of writing. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 403-432). New York: Guilford.

Silva, T., & Nicholls, J. G. (1993). College students as writing theorists: Goals and beliefs about the causes of success. *Contemporary Educational Psychology, 18*, 281-293.

Smagorinsky, P. (2005). *Research on composition: Multiple perspectives on two decades of change.* New York: Teachers College Press.

Smith, M. W., Cheville, J., & Hillocks, G., Jr. (2006). "I guess I'd better watch my English": Grammars and the teaching of the English language arts. In C. A.

MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 263-274). New York: Guilford.

Stathopoulou, C., & Vosniadou, S. (2007). Exploring the relation between physics-related epistemological beliefs and physics understanding. *Contemporary Educational Psychology, 32,* 255-281.

Tabachnick, B. G. & Fidell, L. S. (2001). *Using multivariate statistics* (5th ed.). New York: HarperCollins.

Taylor, P. S. (1990). EEI's levels of editing. In A. R. Molpus (Ed.), *The expert editor: Tips, advice, insights, and solutions* (pp. 85-86). Alexandria, VA: Editorial Experts, Inc.

Tobin, J. J., Wu, D. Y. H., & Davidson, D. H. (ca.1984). *Preschool in three cultures: Japan, China, and the United States.* New Haven, CT: Yale University Press.

University of Chicago Press. (2003). *The Chicago manual of style: The essential guide for writers, editors, and publishers* (15th ed.). Chicago: University of Chicago Press.

Werner, J. M., & DeSimone, R. L. (2008). *Human resource development* (5th ed.) Mason, OH: Thomson South-Western.

White, M. J., & Bruning, R. (2005). Implicit writing beliefs and their relation to writing quality. *Contemporary Educational Psychology*, *30*, 166-189.

Williams, J. (2006). *Style: Lessons in clarity and grace* (9th ed.). New York: Longman.

Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit-formation. *Journal of Comparative Neurology and Psychology, 18*, 459-482.

Zimmerman, B. J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal, 31*, 845-862.

Zinsser, W. (2006). *On writing well, 30th anniversary edition: The classic guide to writing nonfiction.* New York: Harper.