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THE INFLUENCE OF WRITING ACHIEVEMENT GOALS AND WRITING SELF-REGULATION ON COLLEGE STUDENTS' WRITING GRADES

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

by

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> > Virginia Commonwealth University Richmond, VA December, 2016

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Abstract

THE INFLUENCE OF WRITING ACHIEVEMENT GOALS AND WRITING SELF-REGULATION ON COLLEGE STUDENTS' WRITING GRADES By Joseph Tadlock, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

> Virginia Commonwealth University, 2016 Dissertation Chair: Kathleen Cauley, Ph.D. Associate Professor, Foundations of Education

This study examined relationships between college students' writing achievement goal orientations, writing self-regulation, and writing grades. The study was conducted in a postsecondary setting at a large public university in the mid-Atlantic region of the United States. Using multivariate quantitative techniques (confirmatory factor analysis and structural equation modeling), survey and writing sample data were gathered to address the following research questions: Do college students' writing achievement goals relate to their writing grades; do college students' writing achievement goals relate to their writing self-regulation; and, does writing self-regulation partially mediate the relationship between writing achievement goals and writing grades in college writing classrooms? A convenience sample of 107 participants completed both the survey and writing prompt portions of the study. Findings showed that all three writing achievement goal orientations tested (mastery, performance-approach, and

performance-avoidance) were related to college students' writing self-regulation. However, only writing performance-approach orientation was related to college students' writing grades. Additionally, writing self-regulation did not partially mediate the relationship between all three writing achievement goal orientations and writing grades as expected. Writing self-regulation did fully mediate the relationships between writing mastery and performance-avoidance goal orientations and writing grades, but failed to mediate the relationship between writing performance-approach goal orientation and writing grades. These findings contradict some of the prior literature on achievement goal orientation and self-regulation. However, these results help bridge a gap in the achievement goal orientation and self-regulation research, as prior studies have predominantly focused on PK-12 settings and domains other than writing (reading, mathematics, science, etc.). The findings from this study are limited by the size and nature of the sample, and the survey items used. Future studies should attempt to gather further insight into the goals college students set for their writing, how those goals impact their self-regulation behaviors, and ultimately their writing grades.

Chapter One: Introduction

Background for the Study

Student achievement research suggests that the learning goals students set for their personal attainment are important constructs that can influence their achievement (Grant & Dweck, 2003). In educational contexts, these goals are commonly referred to as achievement goals. Achievement goals are domain or content-specific and vary depending upon individual students and tasks (Elliott, 1999; Pintrich, 2000). Researchers believe this phenomenon holds true for students not only in K12 settings, but higher education as well (Elliot, 1999; Harackiewicz, Barron, & Elliott, 1998); unfortunately, little empirical evidence exists regarding college students' writing achievement goals and whether those goals may influence the scores they earn on writing assignments (Pintrich, Zusho, Schiefele, & Pekrun, 2001). Understanding how writing achievement goals affect writing achievement in higher education may provide further understanding of factors contributing to college students' writing success.

Of equal importance are the ramifications of self-regulation on writing achievement, and the impact writing self-regulation may have on college students' writing grades. Students in K-12 settings who self-regulate their writing readily participate in writing tasks, work harder on writing assignments, and persist longer through writing difficulties (Zimmerman & Risemberg, 1997). Findings from motivational studies also suggest that students with higher writing grades consistently self-regulate their writing efforts more often than their peers who produce lower writing grades (Schunk & Zimmerman, 2007).

Self-regulated learners are more apt to monitor their writing through the writing process, which is shown to relate to the attainment of writing goals (Kaplan, Lichtinger, & Gorodetsky, 2009). However, like achievement goals, few studies have investigated the influence of writing self-regulation on college students' writing achievement. Moreover, the literature lacks definitive evidence as to whether college students' writing achievement goals may relate to their writing self-regulation and achievement (Pintrich et al., 2001). The present study will examine whether writing self-regulation mediates the relationship between college students' writing achievement goals and writing grades in college writing classrooms.

Overview of the Literature

Challenges of College Writers

Over the last decade, ever-increasing numbers of high school graduates are attending college (Fanetti, Bushrow, & DeWeese, 2010). Unfortunately, as first-year college attrition rates show, many students are either ill-prepared or lack the necessary skills needed to succeed in higher education (Kidwell, 2005). Research shows that writing is one area in which students have demonstrated a lack of college preparedness (Goldburg, Roswell, & Michaels, 1996). The National Assessment of Educational Progress (NAEP, 2002, 2007, 2011) has painted a dismal picture of the writing preparedness of American students. The NAEP (2011) report shows that one third of students in 12th grade (33%) scored below proficiency in expository, persuasive, analytical, and argumentative writing. Moreover, only two percent of corresponding students submitted writing that was considered advanced. In a similar report surveying the literacy skills of college graduates of two- and four-year programs, the American Institutes of Research (Baer, Baldi, & Cook, 2006) found that over half of the students who responded lacked basic writing skills. This is an alarming, yet prevalent, trend in education. Many instructors and researchers in

higher education are concerned with college students' writing skills (Atkinson, 1997; Lea & Street, 2006; Lillis, 2001; Pajares & Johnson, 1994), as writing skills are often cited as the determining factor in the hiring process (Wellington, 2010). Furthermore, many employers place high value on writing skills, often using them as a measuring stick of the value of one's college education (Wellington, 2010).

Several studies have attempted to examine the constructs that may impact students' writing achievement (Kaplan et al., 2009; Pintrich et al., 2001). In a writing study investigating the frameworks universities use to identify 'good' and 'poor' student writing, Lea and Street (1998) noted that writing achievement goals and writing self-regulation could be related to college students' poor writing habits. Achievement goals have been cited as the frameworks that guide student progress and learning (Pintrich, 2000), indicating the goal orientations students implement may predict not only how they approach tasks, but outcomes as well.

Self-regulation also has been shown to be a powerful predictor of middle and high school student success (Zimmerman & Risemberg, 1997). K-12 students who self-regulate their writing monitor and evaluate their progress, and typically earn higher writing grades than their counterparts (Pintrich & Zusho, 2002; Schunk & Zimmerman, 2007). Therefore, it is plausible that these two constructs influence college students' writing success. For this study, using a model supported by goal theory (Elliot & Church, 1997), college students' writing achievement goals will be used to investigate the occurrence of writing self-regulation. Furthermore, the relationships between college students' writing achievement goals and self-regulation will be examined in conjunction with their writing grades.

Achievement Goals

According to Schunk (2001), the goals individuals set for themselves act as behavioral regulators, determining how they approach and navigate tasks. Over the past two decades, goal orientation has been identified by motivational theorists as one of the most significant predictors of school achievement (see Dweck & Legett, 1988 for a review). In the classroom, goals may be as simple as achieving a passing score on a test, or as complex as mastering a broad topic (Zumbrunn, Tadlock, & Roberts, 2011). The goals students set for their learning have a strong impact on their academic behaviors, and whether or not they monitor and regulate their learning (Aguirre & Speer, 1999; Borko & Putnam, 1996; Zohar, 1999). Students' achievement goals set the tone for how they will approach learning activities.

Elliot and Church (1997) proposed a trichotomous goal framework that has become widely accepted in the literature. Within this framework, three types of achievement goals exist: mastery, performance-approach, and performance-avoidance (Dweck & Leggett, 1988; Dweck & Sorich, 1999). Students with mastery goals are more likely to embrace writing tasks because they are interested in improving their writing skills (Church, Elliot, & Gable, 2001). These students have higher levels of motivation than their counterparts, performance oriented students (Ames, 1992; Pintrich, 2000; Schunk, 2001). Students with performance-approach goals are extrinsically motivated, usually trying to outperform their peers or prove their competence by scoring the higher grades than their peers (Elliot & Harackiewicz, 1996). Students with performance-avoidance goals are also extrinsically motivated; however, they are more concerned with avoiding looking incompetent (Elliot & Church, 1997). These students often fail to put forth their best effort on writing tasks because they are afraid of being perceived as "dumb."

Whether students are oriented toward mastery or performance goals has shown to be significantly correlated to how they approach learning, what tasks they select, and the extent to which they persist through difficult or challenging scenarios (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Elliot & McGregor, 2001). Likewise, self-regulation has attracted great interest both for its role as a correlate of achievement and for its influences on students' task engagement and achievement (Pintrich & Zusho, 2002; Zimmerman, 2000; Zimmerman & Risemberg, 1997).

Writing achievement goals. Much of the research on writing achievement goals has focused on K-12 populations (e.g., Kaplan et al., 2009; Meece and Miller, 1999; Pajares & Cheong, 2003). These studies have reported relationships between students' writing achievement and their writing achievement goals. In one of the first studies of the achievement goal framework in the domain of writing, Meece and Miller (1999) investigated changes in writing achievement goals as students progressed from grades three through five. Findings revealed that students with strong writing mastery goals outperformed students with writing performance goals. Unfortunately, the researchers failed to make a distinction between the approach and avoidance goal constructs. Differentiating between performance orientations may have provided additional clarity.

Pajares and Cheong (2003) investigated the relationship between achievement goals and writing self-efficacy for children aged nine to 17. In their study, performance-approach and performance-avoidance goals were in fact treated as separate constructs. Results indicated that mastery goals for writing were positively related to writing performance. Performance-approach goals for writing also were positively related to writing performance, but not as strongly as writing mastery goals. Both mastery and performance-approach writing goals were positively

related to writing behaviors such as planning with the strength of the relationship increasing with age. Lastly, performance-avoidance goals for writing were found to be negatively related to writing performance, providing evidence for the necessary distinction between the two performance goal orientations.

This line of research continued with Kaplan et al. (2009), when they conducted a study of writing achievement goals in the high school writing classroom. Using surveys and writing samples, mastery writing goals were positively related to writing self-regulation and achievement. Although past research indicates relationships between students' goal orientations and writing performance and achievement (Meece & Miller, 1999; Pajares, Britner, & Valinate, 2000), studies examining these relationships in college settings are limited (Elliot & Church, 1997). Research on writing achievement goals is needed in higher education, where academic writing involves higher-order processes such as critical thinking, evaluating evidence, and negotiating multiple texts.

Self-Regulation

"Self-regulated learning (SRL) is a process that assists students in managing their thoughts, behaviors, and emotions in order to successfully navigate their learning experiences" (Zumbrunn et al., 2011, p. 4). Zumbrunn et al. (2011) noted that self-regulation is the purposeful direction of one's actions toward the acquisition of information or skills. Models of SRL are separated into phases: forethought and planning (e.g., breaking the task down into manageable parts and setting goals for one's actions), performance monitoring (e.g., implementing learning strategies and monitoring one's progress), and reflections on performance (e.g., evaluating their performance in conjunction with the strategy they employed) (Pintrich & Zusho, 2002; Zimmerman, 2000; Zumbrunn et al., 2011). Self-reflections are important because they

influence whether students choose to plan, goal set, and monitor future behaviors (Zumbrunn et al., 2011).

Planning, monitoring, reflection, and engagement are characteristics of self-regulated learners that help to distinguish them from their peers (Schunk & Zimmerman, 2007; Zumbrunn et al., 2011). As noted by Zumbrunn et al. (2011), self-regulated learners have been known to exhibit the following the behaviors: seating themselves close to the front of the classroom (Labuhn, Zimmerman, & Hasselhorn, 2010), actively participating during lessons (Elstad & Turmo, 2010), and seeking help through their own volition (Clarebout, Horz, & Schnotz, 2010). Self-regulated learners also are effective at manipulating their learning environments to meet their needs (Kolovelonis, Goudas, & Dermitzaki, 2011; Zumbrunn et al., 2011). These learners take charge of their learning by seeking advice and information to support their learning goals (Clarebout et al., 2010; de Bruin, Thiede, & Camp, 2001), as well as pursuing and adapting their learning environments to promote positive learning outcomes (Labuhn et al., 2010).

Writing self-regulation. Flower and Hayes' (1981) cognitive processes model of writing has been used by many researchers to investigate writing self-regulation. They reported that skillful writers are able to direct and monitor their writing progress. However, a broader view of self-regulatory writing has emerged. For instance, Zimmerman and Risemberg (1997) described self-regulation of writing as "self-initiated thoughts, feelings, and actions that writers use to attain various literacy goals" (p. 76). Graham & Harris (2000) used Zimmerman and Risemberg's (1997) definition to outline multiple self-regulatory processes that are assumed to be vital mechanisms within the writing process, such as: setting and modifying writing goals, reviewing notes, assessing text quality, revising text, managing time, and finding good working environments. Graham and Harris (2000) went on to describe writing self-regulation as

including the following processes: planning, monitoring, evaluating, and revising written work (Graham & Harris, 2000). Self-regulation in writing refers to the ability to write effectively and use writing instructional tools without regular direction and/or prompting (Schunk & Zimmerman, 2007). Self-regulated writers are often able to set and attain writing goals and monitor their own progress throughout the writing process.

Multiple studies (e.g., Graham, Harris, & Larson, 2001; Santangelo, Harris, & Graham, 2008) have shown that the aforementioned mechanisms play an important role in the development of proficient writers. Consequently, because self-regulated writing has been shown to increase writing achievement, researchers have begun to develop strategies that teachers can use in the classroom to promote self-regulated writing (Graham & Harris, 2000; Zimmerman & Risemberg, 1997). In light of the positive outcomes of prior research studies on writing selfregulation with younger students, additional studies with older students, including those in college settings are needed, because the frequency with which older learners deploy specific selfregulatory strategies likely changes depending on skill level, task complexity, and personal writing goals (Graham & Harris, 2000). Noting the importance of self-regulation, one such study, Ekholm, Zumbrunn, and Conklin (2015), examined the relationships between writing selfefficacy, writing feedback perceptions, and writing self-efficacy in college students. They reported moderate correlations between writing feedback perceptions and writing self-efficacy to writing self-regulation, meaning the more efficacious college writers felt, the more likely they were to self-regulate their writing. The present study extends this research on writing selfregulation by examining the role of writing self-regulation and writing achievement goals in relation to college students' writing achievement.

Significance of the Study

The purpose of this study was to examine the relationship between college students' writing achievement goals, self-regulation, and grades, as no prior studies have investigated this triarchial relationship. While most studies of writing achievement goals and writing self-regulation have occurred within K-12 settings, this is one of the few studies examining college students' achievement goals and self-regulation within the domain of writing.

Three achievement goal orientations (mastery, performance-approach, and performanceavoidance) were tested in this study. Prior research has reported mixed results on the relationship between mastery goal orientation and achievement. For example, Barron and Harackiewicz (2003) found a strong positive relationship between mastery goal orientation and achievement, whereas Harackiewicz, Barron, Tauer, Carter, and Elliot (2000) found the variables to be unrelated. But, because most motivational studies on goal orientation have found positive support for mastery orientation, the researcher predicted that writing mastery goal orientation would positively relate to writing grades. The researcher anticipated the same for writing performance-approach orientation as most studies have found some positive correlation between performance-approach orientation and achievement (Cury, Elliot, Da Fonseca, & Moller, 2006; Harackiewicz et al., 2000). Unlike mastery and performance-approach orientations where mixed results have been reported, prior research has found no evidence to support the notion that performance-avoidance orientation leads to positive achievement outcomes (Barron & Harackiewicz, 2003; Elliot and Church, 1997); therefore, the researcher predicted writing performance-avoidance orientation would negatively correlate to writing grades.

This study also attempted to investigate the relationship between goal orientation and self-regulation. Similar to achievement outcomes, prior research has reported mastery and

performance-approach goal orientations to predict the use of self-regulation strategies, and performance-avoidance orientation to have a negative effect on self-regulation behaviors (Meece & Miller, 1999; Pintrch, 2000). The researcher expected similar findings in the current study.

Lastly, the researcher investigated the direct relationship between writing self-regulation and writing grades, as well as the mediational properties of writing self-regulation. Because prior research has reported evidence supporting the use of self-regulation strategies to increase achievement outcomes (Hammann, 2005), it was expected that college students' writing selfregulation would positively correlate to their writing grades, and partially mediate the relationship between their goal orientation and writing grades.

The current study contributes to the existing literature on achievement goal orientations and self-regulation by expanding the research into postsecondary classrooms in the continental United States. Prior to this study, a gap in the literature existed in the area of writing, especially in higher education. Presently, few studies have investigated motivational factors that may influence achievement in college writing classrooms (e.g., Elliot & Harackiewicz, 1996). Results from this study could provide insight into factors that facilitate or impede college students' writing success.

For the last three decades, researchers have gained a wealth of knowledge in the area of achievement goal orientations and self-regulation; however, most of those studies have been confined to PK-12 settings, and in domains other than writing (e.g., reading, mathematics, science, etc.). This study contributes to the literature by providing insight into how college students' writing goals influence their self-regulation behaviors and subsequently, their writing grades. Additional research on this topic is greatly needed, but this study provides an initial framework for future investigations.

Research Questions

The following research questions will be addressed in this study:

- 1. Do college students' writing achievement goals relate to their writing grades?
- 2. Do college students' writing achievement goals relate to their writing selfregulation behaviors?
- 3. Does writing self-regulation partially mediate the relationship between writing achievement goals and writing grades in college writing classrooms?

Design and Methods

This study used a quantitative, non-experimental design that included an analysis of college student survey data, as well as a review of writing samples to examine the relationships between college students' writing achievement goal orientations, writing self-regulation, and writing grades. Specifically, this study investigated whether college students' writing achievement goal orientations relate to their writing self-regulation behaviors and writing grades, and whether college students' writing self-regulation behaviors relate their writing grades and mediate the relationship between their writing achievement goal orientations and writing grades. This study used a 4-point Likert scale to measure the writing achievement goals and self-regulation behaviors of college students enrolled at a large, public research university in the mid-Atlantic.

The population and sample were from a single mid-Atlantic university. A convenience sample of undergraduate and graduate students enrolled in statistics courses at the university took part in the study. These students were chosen based on instructor availability and willingness to volunteer class time for survey and writing prompt administration. Undergraduate and graduate students were chosen in an effort to increase the study's sample size to the greatest

degree possible. All participants completed two questionnaires assessing their writing achievement goals (i.e., the Writing Achievement Goals Scale), and writing self-regulation (i.e., the Writing Self-Regulation Scale). Additionally, students completed a short writing prompt to better access their writing abilities (grades).

Analysis of student data consisted of a two-part process. First, a bivariate correlation was run to investigate the relationships between the variables, writing achievement goal orientations, self-regulation, and grades. Second, the researcher used structural equation techniques to test the relationships between the variables, and the effectiveness of the models used to describe the relationships between college students' writing achievement goals, self-regulation, and grades. This step involved the use of confirmatory factor analysis to establish measurement models for each achievement goal orientation. Once measurement models had been established, structural equation modeling was used to measure the structural relationships of each model.

Definition of Terms

Two terms are key to understanding the current study. These are: achievement goals and self-regulation.

- Mastery Goal Orientation An achievment goal orientation associated with intrinsic motivation and self-improvement (Pintrich, 2002).
- Performance-Approach Goal Orientation An achievement goal orientation associated with demonstrating competence and knowledge (Elliot & Church, 1997).
- Performance-Avoidance Goal Orientation An achievement goal orientation associated with avoidance behaviors for fear of failure (Pintrich, 2002).

 Self-Regulation – Schunk and Zimmerman (1994) defined self-regulation as "the process whereby students activate and sustain cognitions, behaviors, and affects, which are systematically oriented toward their goals" (p. 309).

Chapter Two: Review of the Literature

Method for Review of the Literature

The search strategy employed for this review of the literature involved a thorough electronic search of literature databases. This search was conducted to identify literature on college writing, writing achievement goals, and self-regulatory processes in writing. ERIC, PsycINFO, and ProQuest databases were searched electronically with the dates 1980-2016. The year 1980 was selected as a cutoff due to more recent developments in theoretical perspectives on writing. Combinations of relevant keywords were applied within each database. Exact terms were identified using the thesaurus unique to each database, which resulted in slightly different keywords for each database search. Specifically, the following terms were searched in ERIC, PsycINFO, and ProQuest – college writing, writing in higher education, challenges of college writers, achievement goals, goal theory, achievement goal theory, goal orientations, writing achievement goals, writing goal orientations, college students' writing achievement goals, college students' writing goal orientations, writing achievement goals and college, writing achievement goals and higher education, writing goal orientations and college, writing goal orientations and higher education, self-regulation, writing self-regulation, self-regulatory processes in writing, self-regulation in college, and writing self-regulation strategies.

This literature review begins with an overview of writing in college, and common challenges faced by college writers. This foundational information establishes the importance of the present study, and how the findings can contribute to the current knowledge base. Each motivational construct is presented along with its influence in the literature: a. writing

achievement goals and their influence on student writing achievement; b. writing achievement goals and their influence on self-regulation; c. writing self-regulation and its influence on writing achievement; and, d. the mediational impact of writing self-regulation on the relationship between writing achievement goals and writing achievement is discussed. This information provides foundation and context for how the focal constructs influence college students' writing outcomes.

Theoretical Framework

Goal Theory

Goal Theory, a framework first coined by Nichols (1984) and expanded on by Dweck (1986), is often used to explain student achievement patterns by exploring how and why students approach academic tasks. Following this framework, many researchers use the term 'goal orientation' to describe academic-related behaviors, such as how students approach, engage in and evaluate their achievement (Ames, 1992; Pintrich, 2000).

Early research on goal theory centered on two goal orientations: mastery goal orientation, where learning is the focus and desired outcome at hand, and performance orientation, where demonstration of one's ability outweighs learning new skills (Dweck, 1986; Elliot & Dweck, 1988; Nichols, 1984). Goal theory research has shown that being mastery oriented leads to better motivational and academic outcomes than does being performance oriented (Elliot & Dweck, 1988; Kaplan & Midgley, 1997). As Koballa and Glynn (2007) noted, mastery oriented students are not preoccupied with making mistakes. They view mistakes as part of the learning process and an important part of their academic growth. Conversely, performance oriented students view mistakes unfavorably (Meece, Glienke, & Burg, 2006).

They are less concerned with their personal growth, turning their attention to acknowledgement and recognition from others.

In addition to performance outcomes, goal orientation has been shown to influence other motivation constructs such as views of intelligence. This line of research has investigated knowledge acquisition and beliefs about learning. Dweck (1986) distinguished between two fundamental views of intelligence, entity and incremental. She wrote that learners with an entity view of intelligence believe intelligence is fixed, determined at birth, and does not change over time, regardless of one's learning experiences. Conversely, learners with an incremental view believe intelligence is acquired through learning experiences and accumulated over time. These learners believe that studying and hard work are key to transforming one's intelligence. According to Elliot and Dweck (1998), the view of intelligence one holds can greatly impact their academic behavior and success.

Elliot and Dweck (1988) believed students' perceptions of their abilities related to their goal orientations. Students believing hard work leads to improved performance outcomes assumed mastery orientations, while students believing abilities are predetermined and unaffected by increased effort held performance orientations. Those with mastery orientations believed effort was the key to positive outcomes and strengthening their abilities helped overcome weaknesses. On the other hand, performance oriented individuals did not look favorably on effort. They believed those who had to try hard and expend lots of effort to succeed at a task are demonstrating low ability (Elliot & Dweck, 1988).

Strage (1998) provided empirical support for Elliot and Dweck's (1998) theory when she found a positive correlation between college students' goal orientation and views of intelligence. She reported that those holding incremental views of intelligence showed mastery-oriented

attitudes and behaviors, while those who held entity views of intelligence showed learnedhelpless attitudes and behaviors. In addition to beliefs about ability, the ways in which college students approached tasks also differed between the two patterns of behavior (Strage, 1998). College students who were more mastery orientated relished a challenge, and looked forward to trying new tasks. These students viewed challenges as opportunities to learn something new. In Strage's (1998) study, college students with performance orientations viewed tasks as being an opportunity to out succeed others.

As Jagacinski (1998) posited, it was originally thought that mastery and performance orientations were opposite orientations and produced very different outcomes. Theories have evolved and many researchers now believe both orientations can lead to positive performance outcomes (Church et al., 2001). Studies at the college level have shown that both performance and mastery orientations can co-exist without negative consequences for students. At the college level, both goal orientations have been found to lead to positive outcomes (Midgley, Kaplan, & Middleton, 2001). While a mastery orientation better predicts interest in the subject matter (Jacobs & Newstead, 2000), a combination of the two orientations is a better predictor of high grades than mastery orientation alone (Ames & Archer, 1988). Some studies have shown that performance orientation alone can lead to self-handicapping (Martin, Marsh, Williamson, & Debus, 2003; Midgley, & Urdan, 2001), but these studies do show that positive outcomes can be produced when a performance and mastery orientation are paired.

Through continued research, debate arose over whether more achievement orientations should be defined. It was Elliot and Church (1997) who first argued that the performance orientation should be partitioned into two separate orientations: performance-approach and performance-avoidance. They believed performance orientations could produce very different

outcomes depending on the student's focus. Students with performance-approach goals are focused on proving themselves by outperforming others, whereas those with performanceavoidance goals are fearful of appearing unknowledgeable, therefore, they shy away from putting forth their best effort (Elliot & Church, 1997; Elliot & Harackiewicz, 1996). The Performanceapproach orientation has been shown to predict positive writing outcomes in some studies (e.g., Church et al., 2001; Wolters, 2004), and negative writing outcomes in others (e.g., Dupeyrat & Mariné, 2005; Phan, 2010). Because of this, researchers have disagreed on whether or not a performance-approach orientation to writing tasks, or tasks in any content for that matter, should be viewed favorably. Church et al. (2001) posited that achievement goals lay across a continuum and some students, especially older students in high school and college, may possess attributes of mastery and performance-approach goals simultaneously.

As noted above, empirical research supporting positive outcomes for students employing a performance-approach goal orientation does exist. In fact, in a comprehensive review of constructs affecting college students' academic achievement, Richardson, Abraham, and Bond (2012) reported that both mastery and performance-approach goal orientations have shown to be positively correlated with academic achievement. Cury et al. (2006) found performanceapproach goal orientation to more strongly predict academic achievement than mastery goal orientation, albeit with middle-school aged students. In an earlier study, Harackiewicz, et al. (2000) examined both the short and long-term academic outcomes of postsecondary students based on the achievement goal orientation they held. They reported that students with mastery orientations did not experience gains in achievement; however, students with a performanceapproach orientation did in fact show higher levels of achievement. This finding contradicts most empirical research on mastery orientation and its relation to academic outcomes. But, it

does support the notion that performance-approach orientation, in a postsecondary setting, can show positive relationships with academic outcomes. In a more recent study, Seaton, Parker, Marsh, Crave, and Yeung (2014) investigated academic outcomes in mathematics for high school students who held various achievement goal orientations. They also found performanceapproach goal orientations to predict positive academic success. Interestingly, they also reported that mastery orientation failed to predict positive academic success in mathematics. These mixed findings highlight the uncertainty surrounding the achievement goal literature as it pertains to academic outcomes. The present study intends to shed light on this uncertainty by investigating the orientations postsecondary students hold, and the relationship between orientation and behavior, to contribute more insight into what is currently known about goal orientations and academic success.

In the present study, it was expected that high scores in writing would relate to both mastery and performance-approach orientations. To better explain the contradictory results of performance goals, researchers proposed alternative modes of goal orientations, to include a trichotomous model and a 2 x 2 model. The dichotomous framework reflects the definition dimension of competence (mastery-performance distinction), whereas the trichotomous conceptualization stems from the incorporation of the valence dimension (approach-avoidance distinction) into performance goals. The 2 x 2 matrix of four distinct factors "represents a further revision of the mastery-performance dichotomy and an extension of the trichotomous framework" (Elliot & McGregor, 2001, p. 501). These three models, the dichotomous, trichotomous, and 2 x 2 model of achievement goals, are the primary models used to explain interactions between learners and goals.

Dichotomous model of achievement goals. The mastery performance goal dichotomoy was first discussed by Dweck (1986; Finney & Davis, 2003). Early research on achievement goal orientation (e.g., Dweck & Leggett, 1988; Nicholls, 1984) identified the dichotomous model that limited achievement goals to either performance or mastery orientations. Within the dichotomous framework, mastery goals orient the student toward learning and understanding, the development of skills and competence, and self-improvement using either self-referenced and intrapersonal standards of competence or task-referenced and absolute standards of competence (Elliot, 1999; Elliot & Church, 1997; Elliot & Harackiewicz, 1996). Performance goals were viewed as the exact opposite of mastery goals. Performance oriented students were those that sought to be viewed favorably (high competence abilities) by teachers and peers, or avoid appearing unfavorably (low competence abilities). The student who is oriented toward mastery/learning strives to learn new skills or become the "master" of new learning (Ames & Archer, 1988; Dweck, 1986). The student wishing to achieve or maintain either positive judgments or avoid negative judgment of others is said to have a performance orientation (Ames & Archer, 1988; Dweck, 1986).

Empirical studies have provided evidence that both goal orientations can produce positive student outcomes (Ames & Archer, 1988; Elliot & Dweck, 1988). Meece, Blumenfield, and Hoyle (1988) examined middle school students' ability to employ cognitive learning strategies in a science context after their teachers had stressed mastery goal orientation through the curriculum. The students who were subjected to the lesson on the importance of mastery goals were better able to use cognitive learning strategies to improve their participation and engagement during science activities. Elliot and Dweck (1988) attempted to take this research to the next level by comparing students with mastery goals and students with performance goals.

The researchers manipulated 101 fifth-grade students' goals (mastery vs. performance) and perceived level of ability (high vs. low) by assigning them into groups where they were trained to either focus on learning or achieving high grades during classroom activities. Following classroom lessons and formative and summative assessments, the researchers concluded that student achievement goals were predictive of student behaviors. When performance goals were emphasized, students focused on demonstrating competence. In contrast, students with mastery goals sought to increase competence. Elliott and Dweck (1988) concluded that a link between achievement and specific goal orientation exists. But some studies have reported mixed findings when examining performance goals, specifically with regard to Grade Point Average (GPA; Elliot, 1999; Pintrich & Schunk, 2002). Following these studies, Elliot and Harackiewiez expanded their goal theory framework (Elliot, 1999; Elliot & Church, 1997; Elliot & Harackiewicz, 1996).

Trichotomous model of achievement goals. Despite its widespread acceptance, researchers identified a shortcoming of the performance-mastery goal dichotomy (Elliot & Church, 1997; Elliot & Harackiewicz, 1996). Specifically, dichotomous achievement goal conceptions ignore how achievement goals are specified, such that approaching success and avoiding failure are collapsed into a single category (Ames, 1992) or disregarded (Dweck, 1986; Nichols, 1984). Elliot and colleagues believed that performance goals should be partitioned to specify performance-approach and performance-avoidance orientations (Elliot & Church, 1997; Elliot & Harackiewicz, 1996). They asserted that individuals can be motivated to demonstrate their competence and outperform others, thus adopting a performance-approach goal orientation, or they can be motivated to avoid failure and appearing incompetent or unintelligent, thus adopting a performance-avoidance goal orientation. It should be noted that Elliot and Church's

(1997) perception of mastery goals aligns with the dichotomous model proposed by Dweck (1986).

Performance approach goals focus on doing better than others, demonstrating competence, and attaining favorable judgments from others. The most sought after academic outcome associated with this goal type are high grades (Elliot et al., 1999; Harackiewicz, Barron, & Elliot, 1998).

A number of studies have tested the trichotomous model (e.g., Elliot & Church, 1997; Elliot & Harackiewicz, 1994; Elliot & Harackiewicz, 1996). Elliot and Harackiewicz (1994) tested the premise of the trichotomous model by examining the interactive effects of achievement orientation and the evaluative focus of task-specific goals with 72 introductory psychology students. This was a seminal study within the achievement goal literature because it was the first study to provide evidence supporting the partitioning of the performance orientation. Participants were asked to listen to a tape that explained the goal (manipulated for mastery or performance goals) and then play a game of pin ball in a game room. When finished playing pin ball, participants recorded their own score and evaluated their performance. Researchers then left the participants unattended with no instruction. What happened next was encouraging. Participants in the mastery group spent this time practicing pinball, much more so than those in the performance-approach or performance-avoidance orientations. This behavior showed that students with mastery goals were not only concerned with their pinball scores, but improving their pin ball ability as well. Results also showed that performance-approach students lost interest in the game when they learned scores were not being kept. Students in the performance-avoidance condition put forth the least amount of effort, symbolic of the

performance-avoidance approach. This study provided additional evidence that students with mastery orientations embrace the learning process.

Elliot and Harackiewicz (1996) extended their 1994 study, conducting two experiments on the influence of the three achievement goal orientations on college students' intrinsic motivation to solve complex puzzles. The researchers manipulated the students by training them to adopt mastery, performance-approach, or performance-avoidance goals for solving the puzzles. Students who approached the task with performance-avoidance goals were concerned with appearing unintelligent as poor puzzle solvers and lacked the motivation needed to work through the difficult task. The more interesting finding of note was that students with performance-approach goals performed significantly better than performance-avoidance students, and in some cases as well as mastery oriented students. The results of this study provided further evidence for the partitioning of performance goals. Performance orientation was now seen as a dichotomy that could lead to either adaptive or maladaptive behaviors depending on the student's focus.

Following Elliot and Harackiewicz's research supporting the trichotomous model, Elliot and Church (1997) followed the aforementioned work by testing the existence of three achievement goal orientations in a sample of college students. To do so, researchers administered surveys investigating student achievement motivation, achievement goals, intrinsic motivation, competence perceptions, competence expectancy, and fear of failure. All students were subject to the same instruction and assignments; therefore, final grades for the course were used as a measure of performance attainment. Results showed that achievement motivation was strongly correlated to goal orientation. Researchers reported higher levels of motivation in mastery orientated students versus performance-avoidance oriented students who demonstrated

low levels of perceived competency. The researchers reported three significant outcomes. First, results from this study support the notion that mastery oriented students are as concerned with improving their learning as achieving at a high level. Second, this study supports the notion that performance-approach oriented students have a need to demonstrate their competence in comparison to others. These students are motivated to outperform their peers on tests and other assignments. Third, this study found support for the notion that performance-avoidance oriented students are driven by fear. These students often avoid putting forth their best effort or fully engaging in a task because they feel they are not intelligent enough to do well, a phenomenon referred to as self-handicapping. These students are often intimidated by academic work and are subject to sabotaging their own decision-making processes, resulting in decreased effort and learning (Elliot & Church, 1997).

More recent studies have also reported results that support the trichotomous model. Urdan (2004), in the first study to examine students' achievement goals across multiple academic years, used a longitudinal design to examine high school students' goal orientations in a writing context. Prior to the study, students were surveyed to find out how they approached writing tasks. Consequently, there was a disproportionate number of performance oriented students represented- few students held mastery goals for writing. This finding alone may be indicative of how high school students view writing. Although few mastery writing students were represented in the study, the sample was representative of the student body because few students in the school held mastery goals for writing tasks. However, one weakness of the study was that multiple teachers were used. Even though the teachers used the same curriculum, the study was unable to account for various teaching styles that could have played a role on student achievement outcomes. Like Elliot and Church's (1997) research, performance-avoidance

orientation was positively correlated with self-handicapping, meaning as students' fear of failure increased, their engagement and investment declined. Conversely, mastery and performanceapproach goals showed no correlation to self-handicapping. However, that does not tell the entire story. Urdan's (2004) results provided further evidence that performance-approach goals can lead to positive academic outcomes, but the study failed to investigate how mastery versus performance-approach students' engagement and motivation changed over time. Although performance-approach students may demonstrate positive writing outcomes when incentives are readily available, they may not be able to sustain their effort for increased periods of time, especially once failure is encountered.

Despite empirical results supporting the trichotomous model, the debate surrounding the effects of performance-approach goals remains unresolved (Urdan, 2004). For example, Barron and Harackiewicz (2003) attempted to examine college students' achievement goals through their ability to think critically, write, and engage in challenging tasks. Survey findings showed that students with performance-approach goals were more likely to earn higher grades, yet their interest in doing so declined over time; however, those students adopting mastery goals demonstrated sustained interest throughout the class (Barron & Harackiewicz, 2003). This could mean that performance-approach students are likely to demonstrate high achievement in order to maintain indicators of academic worth (i.e., GPA); however, if those same students experience failure or have to maintain engagement for long periods of time without immediate opportunities for demonstration of intelligence (i.e., tests, papers, etc.), their interest in content may decrease, adversely impacting their long-term academic success. As research has shown, mastery oriented students are able to sustain interest and engagement for long periods of time (Barron &
Harackiewicz, 2003). Research has yet to find similar results for performance-approach students.

Research has indicated that performance-approach students lose interest and motivation once incentives are no longer available (Elliot, Shell, Bouas Henry, & Maier, 2005). Through an investigation of the effects of performance-approach, performance-avoidance, and mastery goal orientations on high school and college students' learning and achievement across various learning conditions, the researchers found that performance-approach students achieved higher than mastery students when performance-incentive rewards were provided. However, once those incentives were no longer available, those same high achieving students lost interest and their performance decreased considerably. When these students were motivated to increase their GPA they outperformed all others, yet they lacked engagement and effort when grades were not contingent upon performance. On a positive note, this could mean that as long as performanceapproach students are working toward improving their academic self-image (i.e., GPA or individual test grades) they will work hard and put forth their best effort. The downside to this occurs when students are presented with classroom activities that do not result in immediate reward or gratification. Under such circumstance, these students could lose interest, thereby failing to retain long-term important information. Researchers have expressed similar concerns. For instance, Midgley, Kaplan, & Middleton (2001) and Urdan (2004) posited that performanceapproach goals could negatively impact student efficacy. For example, performance-approach oriented students who experience failure could adopt an avoidance orientation on similar tasks in the future. Unfortunately, gaps in the literature exist and additional goal orientation research in academic contexts is greatly needed.

2 x 2 model of achievement goals. The last decade has seen a new achievement goal model proposed, one that adds valence to the mastery orientation to include approach and avoidance goals (Elliot & McGregor, 2001). The notion of a mastery-avoidance orientation, or trying not to appear "absolutely incompetent," led to additional studies in the literature (Barron, Finney, Davis & Owens, 2003; Cury et al., 2006). These studies found additional support for the notion that high competence expectancy and academic efficacy predict mastery and performance-approach orientations, while low competence expectancy and academic efficacy predict performance-avoidance orientation. Additionally, support for the notion that performance-approach goals can lead to positive academic outcomes was reported. However, these studies were unable to find support for a mastery-avoidance orientation, creating further dissent among researchers.

In one such study, Cury et al. (2006) conducted a field study that focused on math performance in a middle school setting. The study included 463 participants (245 male, 218 female), aged 12 to 14, from a school district in Marseille, France. Participants completed a variety of questionnaires, including Elliot and McGregor's (2001) Achievement Goals Questionnaire, during the second term of the school year. Regression analyses found perceived competence to be a significant predictor of mastery-approach, performance-approach, performance-avoidance goal orientations, and math performance. However, the study provided little support for a relationship between perceived competence and mastery-avoidance orientation.

In a second study conducted in a laboratory setting using 96 (48 male, 48 female) young adolescents from the same school district in Marseille, France, Cury et al. (2006) blocked participants by gender and randomly assigned them to one of four experimental conditions in a 2

(implicit theory: entity vs. incremental) x 2 (initial feedback: positive vs. negative) matrix. Surveys assessed participants' perceived competence, achievement goals, and intrinsic motivation. Participants holding performance-approach or performance-avoidance goals produced lower IQ test scores and intrinsic motivation to do well. However, mastery-approach and mastery-avoidance goals failed to produce clear results. In another 2 x 2 validation study, Barron et al. (2003) examined 1,213 undergraduates mathematics motivation. Questionnaires revealed that positive academic outcomes and mastery and performance-approach goals were linked; however, the researchers were unable to find sufficient evidence to support the notion of a mastery-avoidance orientation. These findings were in line with two additional studies (Elliot & Church, 1997; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000) reporting similar outcomes. Finally, in a study of the achievement goal orientations held by postsecondary pharmacy students, Hall, Hanna, Hanna, and Hall (2015) found a slight negative correlation between mastery avoidance and academic performance, but reported no relationships among any other orientations. Due to the uncertainty surrounding the identification of a mastery-avoidance orientation, this study used the trichotomous model of achievement goals to investigate college students' writing achievement goals.

Writing achievement goals relate to writing achievement. Few studies have attempted to establish relationships between writing achievement goals and writing achievement. The majority of achievement goal studies in writing have focused on K-12 education and how curriculum and instruction may affect the goal orientations students adopt (Pintrich et al., 2001). A review of the literature shows limited research on writing achievement goals and writing achievement in higher education. Therefore, when anticipating writing achievement goal outcomes at the college level, one must look to writing studies in K-12 to predict whether similar

outcomes would occur in higher education. Previous K-12 research on writing achievement goals has shown stronger positive relationships between mastery writing goals and writing achievement than any other writing goal orientation (Barron & Harackiewicz, 2003). Research does exist supporting the notion that performance-approach writing goals can be positively related to writing achievement (Elliot & Harackiewicz, 1996). This indicates that much like other domains, such as mathematics (e.g., Elliot et al., 2005), that have been researched within the achievement goal literature (e.g., Midgley et al., 2001) similar results have been found within the domain of writing (e.g., Elliot & Church, 1997). This could indicate that like K-12 students, students at the college level will experience similar outcomes when they approach writing tasks with mastery, performance-approach, or performance-avoidance writing goals. Expanding this area of writing research in higher education may provide insight into how college students approach writing tasks, and whether their writing outcomes are a product of the approaches they take toward writing activities.

As previously mentioned, Meece and Miller (1999) conducted one of the first studies on achievement goals within the domain of writing. They used primary grade students to investigate whether an intervention framework could be used to alter the way young students approached writing tasks. Their findings revealed that third, fourth, and fifth grade students could be taught to approach writing tasks with mastery writing goals. The researchers reported that those students who did approach writing tasks with mastery goals earned higher writing grades than did students with performance writing goals across grade levels. Additionally, the researchers noted that students' writing mastery orientations appeared to decline over time. This could mean that elementary aged students can hold mastery goals for their writing; however, in order to sustain those mastery goals, teachers need to closely monitor their students, offering

encouragement and motivation. However, of notable limitation, Meece and Miller's (1999) study failed to distinguish approach and avoidance goal constructs. Consequently, the researchers were unable to determine the effect of performance-approach writing goals on elementary students' writing achievement.

Pajares et al. (2000) investigated achievement goals association with motivational constructs in middle school writing. Unlike Meece and Miller (1999), Pajares et al. (2000) differentiated between performance orientations and found positive (performance-approach goals) and negative (performance-avoidance goals) correlations to writing motivation and self-regulation. This was the first study to use the trichotomous model within the domain of writing, and significant in a sense that performance-approach writing goals, like mastery writing goals, led to positive writing outcomes. This could mean students are more likely to regulate their writing progress when they assume mastery or performance-approach goals in writing contexts. However, more research on performance-approach goals is needed before conclusions can be made regarding their long-term impact. In a follow-up study, Pajares and Valiante (2001) noted that writing mastery goals as well as performance-approach writing goals were positively related to writing achievement in middle school students. This could stand true for college students; however, further research with college populations is needed before such assumptions can be made.

Recently, Kaplan et al. (2009) used the 2 x 2 model to examine writing achievement goals using a large sample of high school students. This study investigated whether students' achievement goal orientations influenced their writing grades. Students were randomly assigned to an achievement orientation group and given direction as to how they should approach the writing task. In other words, they were manipulated into approaching the task with a specific

goal in mind. The researchers collected a writing sample from each student and used a standardized rubric to grade the samples for content, grammar, and thoroughness. Results indicated that mastery-approach goals were strongly related to writing achievement, more so than any other orientation. However, results were mixed for the other orientations. Mastery avoidance, performance-approach, and performance-avoidance orientations produced similar, non-significant results. This could be attributed to how the study was conducted. Manipulating students into approaching the task with a specific goal in mind would ensure adequate participation for each achievement goal group, but it could also negatively influence results. Allowing the students to approach the writing task without direction may produce more authentic results. This study attempted to do just that by investigating the writing achievement goals college students typically employ in their writing, and how those goals relate to their writing grades.

Self-Regulation

Prior research has shown that self-regulation is a key determinant of one's academic success (Graham et al., 2001; Santangelo et al., 2008). Students who earn positive academic outcomes are more likely to elicit behaviors associated with self-regulation (Graham & Harris, 2000). Research has also shown the connection between achievement goal orientation and academic outcomes (Barron & Harackiewicz, 2003; Elliot & Harackiewicz, 1996). Therefore, self-regulation could play a key role in bridging the relationship between achievement goal orientations and academic outcomes, such as grades.

"Self-regulation is an active, constructive process whereby learners set goals for their learning and attempt to monitor, regulate, and control their cognition, motivation, behavior, guided and constructed by their goals and contextual features in the environment" (Pintrich,

2000, p. 453). Central to Pintrich's definition on self-regulation is the notion of controlling one's behaviors in order to deal with their surroundings. Zimmerman (1989) described self-regulated learners as "those who can use metacognitive strategies to plan, organize, self-instruct, selfmonitor, and self-evaluate" (p. 4) while they are learning. Like Pintrich's definition, Zimmerman's definition of self-regulation focuses on one's ability to control and monitor. In awareness of their strengths and limitations, self-regulated learners seek learning opportunities aligned with personally set goals to further their individual growth (de Bruin et al., 2011). The ability to monitor their progress in reaching goals and reflect on the effectiveness of strategies employed sets these learners apart from their peers (LaBuhn et al., 2010). As Zimmerman (2002) posits, "self-regulated learning is not a single personal trait that individual students either possess or lack, but rather the selective use of specific processes or skills that must be personally adapted to each learning task" (p. 66). They have the confidence and willingness to perform a specific task, and they display behavioral characteristics such as environmental structuring, which is the ability to create and select appropriate learning environments (Zimmerman, 1989). Other self-regulated learning skills include: setting specific proximal goals, adopting learning strategies for attaining those goals, monitoring performance for signs of progress, evaluating the effectiveness of specific learning strategies, effective time management, and attributing causation to results (Schunk & Zimmerman, 1994).

The benefits of self-regulation to the learning process are widely documented (Jarvela & Jarvenoja, 2011; Zimmerman, 2008). For example, Wolters (2011) found a relationship between self-regulated learning and time spent studying. Other studies have reported relationships between self-regulated learning and improved student outcomes (Harris, Friedlander, Sadler, Frizzelle, & Graham, 2005), as well as increased monitoring (Harris et al., 2005), and evaluation

(de Bruin et al., 2011). Self-regulated learners are successful due to their resourcefulness and engagement (Zumbrunn et al., 2011) and their willingness to seek out help when confronted with challenging tasks (Schunk & Zimmerman 2007; Zimmerman, 2008). Of particular importance, is the notion that self-regulated learners can overcome the demands of challenging tasks by setting realistic goals and expectations in accordance with the task (Duru, Duru, & Balkis, 2014); learners who do not self-regulate have difficulty adjusting to challenging demands and often lose hope and interest in the task. Lee (2016) expanded upon this area by exploring the goals postsecondary students set for their learning in relation to their self-regulation habits. Results showed that students who set goals for their learning and place higher levels of importance on focal tasks tend to engage in self-regulation behaviors more often than their peers who do not place high levels of significance on focal tasks and do not set goals for their learning. These results not only highlight the importance of self-regulation to experiencing positive academic outcomes, but also emphasize the importance of context. It appears the focal task is critical to understanding student self-regulatory behaviors. In other words, students are more likely to selfregulate if they place high emphasis on the tasks with which they are engaging. Unfortunately, self-regulation is not a widely utilized academic process (Labuhn et al., 2010).

Labuhn et al. (2010) examined the self-regulative abilities of high school students and found few were familiar with or implemented self-regulated learning strategies. However, of notable importance, was the finding that those who did self-regulate were confident and efficacious learners. In a study of postsecondary students' self-regulation behaviors and academic achievement, Duru et al. (2014) found that students who self-regulate have higher levels of academic achievement and lower levels of burnout. Self-regulation may well be an

important gateway to academic success (Graham & Harris, 2000; Kistner, Rakoczy, & Otto, 2010; Zumbrunn et al., 2011).

Self-regulation research is grounded in two models, Zimmerman's model of selfregulation (1998, 2000, 2002) and Pintrich's model of self-regulation (2000). Only one model will be used for this study; however, due to their similarities, both models are discussed.

Zimmerman's model of self-regulation. Zimmerman's (1998, 2000, 2002) model of self-regulation involves three processes of self-regulation: personal, behavioral, and environmental. Personal self-regulation includes monitoring and adjusting cognitive and affective states. Behavioral self-regulation comprises self-observations and adjusting performance processes, and environmental self-regulation concerns observing and adjusting the environment to yield intended outcomes (Zimmerman, 1998). Zimmerman's model includes three cyclical phases: forethought, volitional or performance control, and self-reflection (see Figure 2.1). In this model, these phases are cyclical, meaning each affects the next stage by facilitating effective self-regulation.



Figure 2.1. Zimmerman's Self-Regulated Learning Cycle

Forethought. According to Zimmerman, forethought is the first stage of self-regulation. Forethought occurs before action is taken. When forethought is employed, the learner is able to set a goal and plan and strategize toward achieving that goal. For example, when writing a book report, a self-regulated student would set a goal of having the book read within a week, and then have one or more pages written each subsequent day. Learning goals are a necessary means for one to self-regulate; without a goal for the task, self-regulation cannot take place (Zimmerman, 1998). Zimmerman (2000) posited that the goals a learner sets for their learning are influenced by their domain specific self-efficacy and outcome expectations.

Volitional or performance control. Following the forethought stage, after a goal and plans for achieving that goal have been determined, learners move to the volitional or performance control stage where actual learning occurs. This is where learners begin to regulate their behavior in order to reach previously set goals (Zimmerman, 2000). During this phase, strategies are tested and monitored in an effort to progress toward one's desired outcome. For

instance, referencing the book report example, during this stage the self-regulated student may highlight important information from the book as they read so they can refer back to that material during the writing process, all the while monitoring how well that strategy helps them keep track of necessary information needed to write the report.

Self-reflection. Self-reflection, the next stage of self-regulation, occurs after learners engage in learning activities. During this stage, learners compare their performances against the goal they set for themselves. The self-reflection stage is important for self-regulated learning because it helps learners maintain motivation for learning by reflecting on their goal orientation and strategy use (Zimmerman, 2000). "Students evaluate their performance on the learning task with respect to the effectiveness of the strategies they chose, all the while managing their emotions about the outcomes of the learning experience" (Zumbrunn et al., 2011, p. 5). For example, if the self-regulated student from the earlier example were to get a good grade for their work, he/she might attribute their success to the use of good learning strategies and overall effort. On the other hand, if they were to receive a poor grade, they might reevaluate the strategies they chose to use and how much time they spent on the task. The ability to self-reflect is critical to examining one's outcomes and reinitiating the cycle.

Pintrich's model of self-regulation. Pintrich's (2000) model describes learner and environment interactions through four phases: forethought, planning and activation, monitoring, control, and reaction and reflection (see Figure 2.2).



Figure 2.2. Pintrich's Model of Self-Regulation

Forethought, planning and activation. Much like Zimmerman's model, in the forethought or planning phase, learners set goals, plan strategy use, and activate prior knowledge relevant to the learning task. Pintrich and Zusho (2002) described planning (time and effort and learning behavior observation) as critical to the overall model and the most important phase during self-regulated learning. Time and effort planning occur when learners plan learning activities to achieve the goals they set and when they consider how much time and energy to spend on various learning stages. Learning behavior observation planning concerns how learners control and regulate their learning behavior through strategy use. For example, when writing a book report, a self-regulated student would reflect on past learning strategies used for similar tasks, determine whether or not those strategies were beneficial, and decide whether those strategies could be used to complete the report.

Monitoring. In the second phase, learners monitor their motivation and behavior. Pintrich believed learners not only investigate and confirm their progress, but make modifications as well (Pintrich & Zusho, 2002). During this stage, the self-regulative student would monitor how well those strategies are helping him or her progress toward their learning goals. Self-regulated learners often use time management and climate modification (e.g., turning off the television or seeking a quite study space) during this stage to facilitate learning.

Control. During the control phase, learners control their learning in order to achieve successful learning outcomes. Learners use metacognitive skills to judge the effectiveness of previously employed strategies to determine the necessity of adjustments. Metacognition is a person's knowledge and awareness of the cognitive processes necessary for understanding and learning (Flavell, 1979). The more students are aware of their thinking processes as they learn, the more they can control their learning (Pintrich, 2000). Thus, in the control stage, learners make crucial decisions such as increasing their effort, or selecting and adapting strategies for learning.

Reaction and reflection. After learning activities have been completed in the control phase, self-regulated learners engage in reflection by evaluating their achievement and making positive or negative attributions. For instance, learners will first determine if they have achieved their desired outcome and then make judgments as to why they either did or did not meet their goals.

Comparing models of self-regulation. Zimmerman's model (1998, 2000, 2002) and Pintrich's model (2000, 2002) share a number of similarities, as both define self-regulation as a goal-oriented mechanism that initiates task engagement at the forethought phase, proceeds on to the monitoring phase, then on to the control phase, and finally arrives at the reflection and

reaction phase. Additionally, both models emphasize that motivation plays a significant role in regulating learning behavior so as to bring about academic achievement. The difference between the two models is that Zimmerman's model (1998, 2000, 2002) characterizes self-regulation as a distinct step-by-step process without overlap. Zimmerman believed self-regulation occurs in separate phases, whereby each phase precipitates the next. In other words, self-regulated learners complete the forethought and planning phase, prior to entering the performance monitoring phase and so on. Conversely, Pintrich's model (2000, 2002) includes four overlapping phases. Pintrich believed self-regulated learning is an ongoing cyclical process, whereby learners toggle between phases throughout the learning process. For instance, self-regulated learning strategies. Pintrich's model was used for this study because his model accounts for transference within the different stages of self-regulation; however, it is important to mention both models when discussing self-regulation because the two models grew out of one another and share many similarities.

Writing self-regulation relates to writing achievement. Winne, Jamieson-Noel, and Muis (2002) stated that self-regulation behaviors are context specific, meaning students may be more likely to self-regulate depending on the task at hand. This assumption has been supported by research showing that writing self-regulation is related to students' self-efficacy to perform writing tasks (Zumbrunn, Marrs, & Mewborn, 2016). This is important because the current study is focusing on the context of writing. Prior research has investigated self-regulation behaviors as they relate to writing tasks, but the literature is limited and gaps exist in the postsecondary setting.

In the context of writing, self-regulated learning has been described as including processes such as planning, monitoring, evaluating, and revising written work (Graham & Harris, 2000). Writing self-regulation refers to the ability to write effectively and use writing instructional tools without regular direction and/or prompting (Schunk & Zimmerman, 2007). Zimmerman and Risemberg (1997) developed a model of self-regulated writing that includes three categories of processes: environmental (i.e., classroom and social contexts of writing), behavioral (i.e., setting goals and adapting strategies to meet those goals), and personal processes (i.e., use of writing strategies). Researchers have noted a number of self-regulatory processes that could be linked with each of the three categories including: setting and modifying writing goals, reviewing notes, assessing text quality, revising text, managing time, finding a good working environment, verbalizing goals, and selecting a model writer (Graham & Harris, 2000; Schunk & Zimmerman, 2007; Zimmerman & Risemberg, 1997). These types of strategies are essential to the writing process, as it is generally viewed as a self-planned, individual activity (Zimmerman & Risemberg, 1997).

For example, Hull (1981) investigated college students' goal setting by asking them to set a specific goal and record the number of words they wrote in their journals each day. Each student completed a baseline assessment to assess the length of their daily journal entries. Students were then divided into two groups, with one group setting their own goals, while the other had their goals set by their instructor. Results showed that the two groups did not differ significantly, but both groups did write longer journals after setting goals. Although a relationship between goal setting and writing quantity was established, the study missed an opportunity to examine whether goal setting led to improvements in college students' writing quality, which would have been much more meaningful than simply researching college

students' ability to put more words on paper. In a similar study, Zimmerman and Bandura (1994) examined college students' goal setting and self-evaluation during their writing classes. Unlike Hull (1981), Zimmerman and Bandura (1994) did attempt to establish a relationship between goal setting and writing achievement. Results indicated that students who set goals for their writing and evaluated their writing progress earned higher writing grades.

In a study of female students from a junior college, Ferrari, Bouffard, and Rainville (1998) investigated whether planning could improve writing achievement. To do so, students were divided into two writing groups, high and low ability writers. The researchers found that good writers spent more time writing and revising their work. More importantly, the researchers found that students who strategically planned their writing earned higher writing grades. Similarly, Kennedy (1985) found high-ability college students spent more time planning than did lower ability students after acquiring information to use in writing an essay. Thus, in comparison to low ability writers, high-ability college writers planned and managed their writing time more effectively, thereby resulting in increased writing achievement.

Pianko (1979) examined the process of time management during the writing process. Comparing regular and remedial college writers, regular college writers were more proficient planners than remedial students. Consequently, regular college writers were able to spend more time writing than were remedial college writers. More recent studies have reported similar findings, noting that self-regulated writers are extensive planners, and their planning is correlated with higher writing grades. For instance, Harris, Graham, and Mason (2006) taught a group of second graders to plan their writing using self-regulated strategy development (SRSD) instruction. Students who received SRSD instruction improved not only their expository but their persuasive writing as well. In another study, Englert (2009) produced similar results

showing the use of Cognitive Strategy Instruction could improve the writing proficiency of students with learning disabilities. Results indicated that students who planned and monitored their writing were able to significantly improve their written products. These three studies provide strong support for the notion that planning, a self-regulation strategy, can lead to positive writing outcomes, with results showing that strong planners are able to spend more time on their writing assignments and produce higher quality written products.

Self-control is another self-regulated strategy that has received attention in the college writing motivation literature. Kellogg (1988) examined the relationship between writing self-control and writing achievement by investigating whether self-controlling attention during the writing process could improve college students' quality of writing. Students were divided into two groups. Those in the experimental group received self-control training by learning how to write outlines for business letters. Compared to students in the control group, trained students earned higher writing grades by displaying better idea development, effectiveness, and language use.

Lastly, in a study of help-seeking during the writing process, Risemberg (1993) assigned college undergraduates the task of writing a comparative expository essay on a particular topic. Students were given the option of accessing three documents on a personal computer: two model essays using a comparative format and a guideline for writing essays. Unsurprisingly, students who used the documents composed better essays than students who wrote without such assistance.

Additional studies have found support for the notion that self-regulation can facilitate writing achievement, while fostering student motivation to write (e.g., Graham, Harris, & Mason, 2005; Hammann, 2005; Santangelo, Harris, & Graham, 2008). In one of these studies,

Hammann (2005) investigated the self-regulated writing behaviors of 69 pre-service teachers. Students completed a questionnaire and submitted several writing samples from one of their preservice teaching courses. Results showed that students who scored higher on the self-regulated writing questionnaire earned higher writing grades. In another study, Graham et al. (2005) taught 66 second grade students how to self-regulate their writing over a two week period in their regular education classrooms. Then, they completed a writing prompt that was collected and scored by the researchers. Students who practiced self-regulated writing strategies experienced significant positive gains in their writing grades. Santangelo et al. (2008) described, in a series of examples, how fifth grade students' grammar could be improved through self-regulated writing strategies. Not only did students improve their grammar and overall grades, but they were also observed by their teachers using self-regulated writing strategies independently in the writing classroom following self-regulated strategy instruction.

Although a growing body of evidence continues to illustrate the positive influence of self-regulation to improve writing proficiency, Graham and Harris (2000) posit that further replication and more extensive investigation of self-regulation in writing is needed. As Graham and Harris (2000) note, the frequency with which learners deploy self-regulatory strategies will likely change depending on skill level, task complexity, and personal writing goals. Therefore, the ways in which college students approach writing tasks may vary and may be considerably different from students in K-12 settings. These studies provide evidence for the notion that self-regulated writing can improve the writing achievement. This study will advance the current body of literature in the college classroom by examining college students' use of writing self-regulation and the influence of writing self-regulation on writing grades.

The Relationship between Achievement Goals and Self-Regulation

Research on the types of achievement goal orientations that exist and how they impact student learning and motivation continues to expand, offering additional insight into these interactions between achievement goals and self-regulation. For instance, Malpass, O'Neil, and Hocevar (1996) investigated the relationship between self-regulation, self-efficacy, goal orientation, and worry on high school students' math achievement. This study employed structural equation modeling techniques and found learning goal orientation, commonly referred to as mastery goal orientation, to be positively related to students' self-regulation behaviors. Unfortunately, this study did not investigate performance goal orientation.

Kozlowski and Bell (2006) used a large sample of college students to examine the relationships between goal orientation and self-regulation. The researchers found learning goals or mastery goals and performance goals to positively relate to cognitive self-regulatory activity, with learning goals relating to significantly higher self-regulatory activity. For this study, Kozlowski and Bell framed participants' goal orientation. The present study hoped to capture participants' authentic or true achievement orientations for writing. Nevertheless, the study did provide further evidence for the interaction between goal orientation and self-regulation. In a more recent study, Bernacki, Byrnes, and Cromley (2012) examined college students' goal orientations and self-regulation behaviors through the use of technology designed to enhance reading comprehension. This study also employed structural equation modeling. Findings showed that participants with mastery goals were more inclined to seek information, take notes, and monitor their learning. Performance-approach orientation failed to predict the occurrence of self-regulation behaviors, and performance-avoidance orientation negatively predicted note taking and information seeking. These studies provide useful context for the investigation of the

goal orientation and self-regulation relationship, but because the present study explored the constructs in the area of writing, it's important to discuss how writing goal orientations relate to writing self-regulation.

Writing Achievement Goals Relate to Writing Self-Regulation

Few studies on the relationship between writing achievement goals and writing selfregulation exist, yet with what we know about achievement goal orientation, it is plausible that goal orientation can affect students' use of self-regulation strategies (Farsani, Beikmohammadi, & Mohebbi, 2014). Pajares et al. (2000) did in fact investigate this relationship and found significant positive relationships between mastery goals for writing and one's ability to selfregulate during writing tasks. Furthermore, these students showed low levels of writing apprehension and high levels of writing achievement. Performance-approach goals were also found to have positive relationships with writing self-concept and achievement, while performance-avoidance goals had a negative relationship to each (M.A. Farsani, personal communication, August 10, 2016).

In another study, Pajares and Cheong (2003) investigated K12 students' achievement goals and writing self-efficacy, reporting positive relationships between mastery goals and students' self-efficacy for self-regulation. One limitation of Pajares and colleagues' research on achievement goals and writing is that the researchers failed to tailor their self-regulation scales to a writing-specific context. Instead, students reported their confidence to engage in general selfregulated learning, which made it difficult to interpret whether or not the strategies were used for writing. Moreover, Pajares and Cheong's (2003) study focused on gender differences in goal adoption instead of academic outcomes within each type.

Meece and Miller (1999) examined 431 elementary students' writing goal orientations through the use of a classroom intervention project. They reported correlations between goal orientations and the use of writing self-regulation strategies positively correlated to writing mastery goals and negatively correlated to writing performance-avoidance goals. Additional studies have reported conflicting results. Some studies (e.g., Bouffard, Boisvert, Vezeau, & Larouche, 1995; Pintrich, 2000; Wolters, 1996), have reported strong positive relationships, more so than mastery goals, between performance-approach goals and self-regulation, while others (e.g., Kaplan & Midgley, 1997) have failed to find any relationship between performanceapproach goals and self-regulation.

As Kaplan et al. (2009) noted most research describes achievement goals and selfregulation as distinct, albeit related, constructs. Kaplan et al. (2009) explored the relationship between ninth-grade students' writing goal orientations, use of self-regulatory writing strategies, and their writing achievement. Two-hundred eleven students completed surveys assessing their writing goal orientations and writing self-regulation strategy use. In addition to the surveys, researchers examined students' writing achievement by collecting in-class writing assignments. Results indicated writing self-regulation strategy use varied based upon students' writing goal orientations, and writing achievement varied based upon students' use of writing self-regulation strategies. Kaplan et al. (2009) found the goals students set for their learning play an invaluable role in their ability to develop into self-regulated learners. Specifically, mastery oriented students were more apt to regulate their attention and edit their writing, whereas performanceapproach and avoidance oriented students were more aware of their audience and self-evaluated their progress.

Kaplan et al.'s (2009) study was conducted with middle school students. Research on writing and achievement goals is also needed in higher education, where academic writing involves higher order processes such as critical thinking, evaluating evidence, and negotiating multiple texts. This study will fill a needed gap in the literature by investigating whether writing achievement goal orientations and writing self-regulation relate to college students' writing achievement in a meditational context.

In a fourth, and more recent study, Farsani et al. (2014) investigated the achievement goal orientations, self-regulation behaviors, and writing outcomes of a small sample of undergraduate English majors. This is an important study because its focus parallels the current study. The researchers reported no significant, positive relationship between the use of self-regulated learning strategies and writing performance, and no significant relationship between achievement goal orientation and writing performance. However, they did report a significant relationship between achievement goal orientation and the use of self-regulated learning strategies. Specifically, they found significant relationships between the use of self-regulated learning strategies and mastery and performance-approach goal orientations. This study provides additional support for the notion that performance-approach goal orientation can lead to positive academic outcomes. However, the Farsani et al. (2014) study was conducted abroad in Iran. The present study targeted college students enrolled at a university located in the United States, in hopes of providing results generalizable to United States institutions of higher education. Despite the Kaplan et al. (2009) and Farsani et al. (2014) studies, which found relationships between achievement goal orientations and the occurrence of self-regulation behaviors, the need for more investigations of writing achievement goals and their relation to writing self-regulation is warranted, and this study intends to explore that dynamic.

This study differs from Kaplan's et al. (2009) study in two ways. First, Kaplan et al. (2009) assigned students to groups where they were given instructions on how to approach the writing task. In other words, students' achievement goals were manipulated prior to data collection. Students' achievement goals were not manipulated in this study. This study sought to determine the types of writing achievement goals college students hold, and how those goals influence their writing behaviors and outcomes. Doing so provides insight into the goals college students' set for their writing assignments. Second, Kaplan et al. (2009) provided students with self-regulated writing instruction. This study investigated the self-regulated writing strategies college students' use, absent of researcher interference. Once students reach college, it is rare they receive instruction on self-regulated learning strategies (Hammann, 2005). College students are expected to have this ability in their repertoire; whether they choose to self-regulate or not is up to them. This study explored whether college students chose to self-regulate their writing, and whether those behaviors are influenced by their writing achievement goals.

Additionally, this study differs from the Farsani et al. (2014) study in two ways. Although the Farsani et al. (2014) study examined these relationships in a postsecondary setting, their sample was very small, 48 participants, and their study was conducted in Iranian classrooms. Unfortunately, to date, no prior studies have investigated the role of writing goal orientations and writing self-regulation on writing achievement in postsecondary settings in the continental United States. This study investigated these relationships in U.S. college classrooms. Additionally, the Farsani et al. (2014) study did report positive relationships between mastery and performance-approach orientations and self-regulation behaviors, but not in a mediation context. This study expanded the existing literature by exploring the differences in writing achievement goals and self-regulation at higher levels of academic writing. Lastly, Farsani et al.

(2014) used general motivation items to measure participants' writing motivation. This study used scales specially designed to measure writing motivation, which should provide more reliable estimates of college students' writing motivations. For example, the following items were used in the current study, "When I am writing, I'm trying to be a better writer than my classmates," and "I ask for help if I have trouble writing." Whereas, Farsani et al. (2014) used the following, "Even when I do poorly on a test, I try to learn from my mistakes," and "I ask myself questions to make sure I know the material I have been studying."

The Current Study

The current study examined the effects of writing achievement goals and writing selfregulation behaviors on college students' writing grades. Writing achievement goals and selfregulation behaviors were measured using the Writing Achievement Goals Scale (WAGS) and the Writing Self-Regulation Scale (Tadlock & Zumbrunn, 2012) from the Writing Perceptions, Motivation, and Self-Regulation Inventory (WPMSRI). A convenience sample was used in recruiting participants. Approximately 107 undergraduate and graduate students enrolled at a large mid-Atlantic university chose to participate. Demographic information, including age, ethnic background, gender, and class standing was collected.

Research Hypotheses

This study tested three models depicting the relationships between writing achievement goals, writing self-regulation, and writing grades. Three separate models were proposed to gauge the mediational ability of writing self-regulation across three separate independent variables, mastery, performance-approach, and performance-avoidance orientations. Previous studies have shown that writing achievement goals (Pintrich et al., 2001) and self-regulation (Cleary & Zimmerman, 2004) improve student writing performance. Similar effects were

expected in the current study. Specifically, it was hypothesized that mastery and performanceapproach writing goals would positively relate to participants' writing grades, with mastery writing goals more strongly relating to positive writing outcomes. Performance-avoidance writing goals were anticipated to be associated with decreases in writing grades.

Additionally, writing self-regulation was expected to positively relate to participants' writing grades, while partially mediating the relationship between writing achievement goals and writing grades. Lastly, mastery and performance-approach writing goals were expected to positively relate to participants' writing self-regulation behaviors; performance-avoidance writing goals were expected to be associated with the absence of writing self-regulation behaviors. Proposed relationships between variables can be found in Figures 2.3, 2.4, and 2.5. Solid bold lines represent positive paths, and solid dashed lines represent negative paths.



Figure 2.3. Proposed model of relationships between college students' writing mastery goal orientation, writing self-regulation, and writing grades.



Figure 2.4. Proposed model of relationships between college students' writing performanceapproach goal orientation, writing self-regulation, and writing grades



Figure 2.5. Proposed model of relationships between college students' writing performanceavoidance orientation, writing self-regulation, and writing grades.

Summary

There is an abundance of research on achievement goals and self-regulation in-relation to student outcomes; however, few studies have explored these constructs in the area of writing. Furthermore, even fewer studies have examined these constructs in college writing classrooms. All students in higher education, whether at two- or four-year institutions, are required to produce written documents of some type. Yet, very few studies have attempted to examine the motivational constructs within the domain of writing that may influence students' abilities to achieve positive writing outcomes. This study investigated whether models of college students' writing motivation and self-regulation could explain college students' writing outcomes. Results provided insight into factors influencing college student writing success.

Chapter Three: Methodology

Method

This study used quantitative methods to gather data on the goals college students' set for their writing, the writing behaviors with which they engage, and their writing grades. A questionnaire was used to gather feedback on goal orientations and self-regulation, and a short writing prompt was used to gauge students' writing grades. The following sections outline the research questions, a description of participants, the measures used to gather the data, procedures, and the models used to test the data.

The purpose of this study was to investigate the role of writing goal orientations, writing self-regulation, and writing grades in the college classroom using structural equation modeling techniques. Specifically, this study used a non-experimental quantitative research design to test the relationships and mediational roles of writing goal orientation and writing self-regulation on college students' writing achievement. Little to no work has been published on college students' writing achievement, and writing self-regulation, and writing grades.

Research Questions

This study aimed to address the following research questions:

- 1. Do college students' writing achievement goals relate to their writing grades?
- 2. Do college students' writing achievement goals relate to their writing selfregulation behaviors?
- 3. Does writing self-regulation partially mediate the relationship between writing achievement goals and writing grades in college writing classrooms?

The researcher hypothesized the following:

- For research question one, the researcher expected writing mastery and performance-approach goal orientations to be positively correlated with writing grades, with mastery orientation demonstrating the strongest correlation. Writing performance-avoidance orientation was expected to be negatively correlated with writing grades.
- For research question two, the researcher expected mastery and performanceapproach orientations to relate to writing self-regulation, with mastery orientation demonstrating the strongest correlation. The researcher expected writing performance-avoidance orientation to negatively relate to writing self-regulation.
- Lastly, for research question three, the researcher expected writing self-regulation behaviors to partially mediate the relationships between participants' writing goal orientations and writing grades.

Design

To answer the aforementioned research questions, an analysis of survey and writing sample data was conducted for a sample of college students enrolled at a large mid-Atlantic university. The researcher used a quantitative, non-experimental design to investigate the relationships among variables. Survey data was used to explore participants' writing achievement goal orientations and writing self-regulation behaviors, and their writing samples were used to gauge their writing grades. Participant survey data was compared to their writing samples to investigate the relationships between their writing achievement goal orientations, selfregulation, and grades.

Sample

Determining necessary sample size is an important issue in structural equation modeling. Kline (1998) provided a rule of thumb where sample sizes less than 100 would be considered small, between 100 and 200 medium, and 200 or more cases large. However, he noted that minimum sample size greatly depends on the model's complexity. Kline (1998) stated that the ratio of sample size to number of free parameters should be at least 5:1. This study had seven free parameters; as such, 80 participants would provide a sufficient sample. A sample of this size should yield a Cohen's d of at least 0.3. To guarantee sufficient sample size, approximately 150 participants were recruited from statistics courses at a large mid Atlantic university. These courses were chosen based upon instructor availability and willingness to volunteer course time for survey administration. These students were predominantly science majors (e.g., biology, chemistry, etc.), with the majority of the coursework in non-writing intensive courses. Of the approximately 150 participants recruited, 107 (male = 52, female = 55) completed both thesurvey and writing components of the study. The average age of participants was 21.88 (range = 18-45). Participants were asked to report the number of college-level English/writing composition courses they have taken to date. Table 3.1 provides demographic characteristics for the sample. This information included age, ethnic background, gender, and class standing.

Table 3.1.

Demographi	c Cl	haracteristics	of Participants	(n =	107)
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	n (%)	Range	Mean ± SD
Academic Standing			
Freshman	3 (2.8)		
Sophomore	23 (21.5)		
Junior	35 (32.7)		
Senior	44 (41.1)		
Graduate Student	2 (1.9)		
Ethnicity			
African American	23 (21.5)		
Asian/Pacific Islander	23 (21.5)		
Caucasian	48 (44.9)		
Latina/Latino	6 (5.6)		
Native American	0		
Other	7 (6.5)		
Composition Courses Taken		4	3.45 ± 0.89
0	0		
1	10 (9.3)		
2	55 (51.4)		
3	29 (27.1)		
4	10 (9.3)		
5 or more	3 (2.8)		

Materials and Measures

The Writing Achievement Goals Scale (WAGS) and the Writing Self-Regulation Scale (WSRS) from the Writing Perceptions, Motivation, and Self-Regulation Inventory (WPMSRI) (Tadlock & Zumbrunn, 2012) was used to measure participants' writing goal orientations and writing self-regulation. Scale instructions and items are available in Appendix A.

Writing achievement goals scale. The Writing Achievement Goals Scale (WAGS) consists of 12 items, four items for each orientation, that ask students to rate on a scale from 1 (Almost never) to 4 (Almost always) the writing goals they set for themselves during writing tasks. The full scale was as follows: 1 (Almost Never), 2 (Sometimes), 3 (Often), and 4 (Almost Always). Items were developed to target three goal orientations, mastery, performance-

approach, and performance-avoidance. Items were worded in a way to assess participants' approach to writing tasks in general. Items from the Kauffman, Zhao, Dempsey, Zeleny, Wang, and Bruning (2010) achievement goals for writing scale were consulted for use and adaptation. The Kauffman et al. (2010) achievement goals for writing scale consist of 12 items, four items per orientation (mastery, performance-approach, and performance-avoidance). Cronbach alpha values for the Kauffman et al. (2010) scale were adequate to high (Mastery = 0.57; Performance-Approach = 0.72; Performance-Avoidance = 0.79). The researcher used six items from the Kauffman et al. (2010) study, two from each orientation, and developed six additional items, two for each orientation, for this study. Items from the Writing Achievement Goals (WAG) Scale were first used by Tadlock and Zumbrunn (2012). In that 2012 study, the overall WAG scale showed a reliability estimate of 0.77, with the writing mastery goal subscale at 0.82, the writing performance-approach subscale at 0.79, and the writing performance-avoidance goal subscale at 0.81, so the scale's overall estimate and each of the subscale estimates fell within acceptable range. Sample items from this scale are: "When I am writing, I am trying to become a better writer," "When I am writing, I am trying to be a better writer than my classmates," and "When I am writing, I am trying to not fail this class." Items were categorized into three subscales: mastery (four items), performance-approach (four items), and performance avoidance (four items). For analysis procedures, performance avoidance items were reverse coded.

Writing self-regulation scale. The Writing Self-Regulation Scale (WSRS) consists of 11 items asking students to rate their perceived self-regulative behaviors on a scale from 1 (Almost never) to 4 (Almost always). The full scale was as follows: 1 (Almost Never), 2 (Sometimes), 3 (Often), and 4 (Almost Always). These items were designed to assess participants' behaviors during writing tasks. In a previous study, Tadlock and Zumbrunn (2012) reported the

Cronbach's alpha of the Writing Self-Regulation (WSR) Scale to be 0.87. Sample items from this scale are: "I think about the writing assignment before I begin to write" and "I brainstorm ideas to use before I start writing."

Writing grades. Participants were asked to complete a short writing prompt (Appendix B). The writing prompt was worded as follows, "In this step, think about a time in your daily life when you were dissatisfied with a policy, product, problem, or incident that affected you. Write one or two paragraphs describing the problem and explain why the issue is important and what should be done to resolve it. Feel free to use the extra blank sheet of paper to map out your ideas. Please return this sheet along with your idea sheet when finished. Please do not write your name on your essay. Thank you for your time!" Participants' writing prompts were scored using a rubric developed by MacArthur and Philippakos (2013; Appendix C) to measure and differentiate quality of student writing. The rubric scores writing samples based on ideas, organization, word choice, word usage, sentence fluency, and conventions. Spelling and punctuation errors will be corrected for prior to scoring- they will not be considered in the scoring process. This was done because participants completed the writing prompts using paper and pencil, without dictionaries/spell check options.

Two undergraduate students, preservice teachers, were recruited to score the writing samples. The scorers did not have access to personally identifiable information. Prior to scoring, the researcher coded the writing samples so they could be matched back to the correct survey responses upon completion. To ensure the reliability of the scores obtained, inter-rater reliability was examined. The researcher first met with the scorers to discuss the prompt, scoring expectations, and the types of responses that would constitute each score (anchor papers). The researcher identified anchor papers (student writing samples that represent each level of the

scoring scale) and used those papers to help prepare the scorers to reliably score all of the writing samples. These anchor papers were short, one to two paragraph persuasive writing samples written using a prompt other than the one used for the focus study. The anchor papers were scored independently, and inter-rater reliability was assessed to calibrate scoring. Scores of 1 (low) to 4 (high) were assigned to each paper. Scorers reached an agreement level of at least 0.80 prior to independent scoring.

Following calibration, each scorer independently scored all 107 writing samples. Following the independent scoring process, the researcher collected the samples and reviewed each for score discrepancies. If one or more discrepancies were found, the two scorers were required to meet, discuss their decision and reach consensus on a final score. Of the 107 samples scored, four required additional review.

Data Collection

This study used survey and writing sample data gathered from undergraduate and graduate students enrolled in statistics courses at a large mid-Atlantic university. Following approval by the institutional review board (IRB), the researcher recruited instructors who were willing to offer class time for survey administration. Two instructors offered for the researcher to administrator the survey and writing sample to their students. The researcher scheduled days and times for survey administration with each instructor.

The sample consisted of students that were currently enrolled at the university. Participants were asked to participate in the research project by the researcher through their class enrollment. Consent was obtained prior to collecting data. Once potential courses were identified, the researcher contacted instructors in each course to inquire about offering the survey and prompt. Prior to completing the survey and prompt, participants were presented with a

general overview, explaining its purpose and confidentiality. Participants were informed that non-participation would not carry any consequences. When the researcher met participants in their classrooms, consent forms were provided and thoroughly discussed. Participants were told what demographic information would be requested and that the survey concerns their writing achievement and the factors they feel impact their writing performance. Participation in the study was strictly voluntary; participants could quit the survey at any time without penalty. The survey and prompt took no longer than 20 to 30 minutes to complete. It was stated that there were no direct benefits to participating, but that the information provided could contribute to current literature and research within the area of writing motivation.

Participants completed the survey and prompt during their regularly scheduled class times. The survey and prompt was presented in paper/pencil format. Survey and prompt instructions were presented in a script, developed by the researcher, and attached to the documents. All responses were kept confidential. The researcher manually entered the survey responses and the writing prompt scores into a Microsoft Excel file. The scores were spot checked for accuracy. The data was exported into IBM SPSS Statistics Version-23 and RStudio (Version 3.1.2; Fox, 2006) and the lavaan package (Rosseel, 2012) for analysis. The scales were assessed for reliability, correlation analyses were performed to assess relationships between constructs, and structural equation modeling techniques were performed to assess the proposed models.

Data Analysis

Survey and writing prompt data were examined to investigate participants' writing achievement goal orientations and writing self-regulation in relation to their writing grades. Research questions one and two examined participants' writing achievement goal orientations

and self-regulation behaviors in relation to their writing grades. Finally, question three investigated whether participants' writing self-regulation partially mediates the relationship between their writing achievement goal orientations and writing grades. Data analyses for the study were two-fold and involved the use of bivariate correlation analysis and structural question techniques (confirmatory factor analysis and structural equation modeling). Confirmatory factor analysis was used to establish measurement models for each achievement goal orientation and to examine each model's underlying factor structure relative to the scales used. Following factor analysis, structural equation modeling was used to investigate each model's structure to answer research questions one through three. Descriptive statistics were provided for the overall sample. All data were analyzed using IBM SPSS Statistics Version-23 and Rstudio (Version 3.1.2).

Delimitations

Although it is the hope of the researcher that this study will result in data of importance to motivation researchers and writing instructors in higher education, it is important to delimit the results to the population that will be included in the investigation. These data were representative of only one large mid-Atlantic university. The data included only a small number of students enrolled in a small number of select courses.

Also, one critical element of this research study design, the sample, may limit study findings. First, this study was limited to a convenience sample of undergraduate and graduate students. The relatively small sample limits the generalizability of the study. Second, the nature of the dependent variable, participants' self-reported writing grades, limits the interpretability of participants' writing grades. Lastly, the scales used are relatively new, with only one prior testing, and may need further refinement. All of which may impact results and interpretability.
Institutional Review Board

Approval to conduct the proposed research study with human subjects was obtained from the university's Institutional Review Board prior to data collection. The study met the requirements for an expedited review and was approved (IRB #HM15260; see Appendix D). Participants received written information about the study prior to beginning the survey (see recruitment script in Appendix D). No incentives were provided for participation. No personally identifiable information was collected from participants. All students enrolled in the targeted courses who met the aforementioned requirements were asked to participate in the study.

Chapter Four: Results

This study was designed to examine the role of writing achievement goals and writing self-regulation on writing grades at the college level. The researcher aimed to answer the following questions:

- 1. Do college students' writing achievement goals relate to their writing grades?
- 2. Do college students' writing achievement goals relate to their writing selfregulation behaviors?
- 3. Does writing self-regulation partially mediate the relationship between writing achievement goals and writing grades in college writing classrooms?

It was expected that writing mastery and writing performance-approach orientations would relate to high writing grades, with writing mastery goals relating the strongest, and writing performance-avoidance orientation relating to low writing achievement among college students. It was also expected that writing mastery goals and writing performance-approach orientations would relate to writing self-regulation behaviors, with writing mastery orientation showing the strongest relationship, and writing achievement-avoidance orientation relating to the absence of writing self-regulation behaviors among college students. Lastly, it was expected that writing self-regulation would partially mediate the effects of college students' writing achievement goal orientations on their writing grades. Prior to answering the focal questions, the scales were examined and correlational analyses were conducted. Results are presented below.

Data Cleaning

Before computing descriptive statistics, participant responses were evaluated for missing data. All survey responses were retained; however, if a participant failed to complete the writing section of survey, the data were discarded. The dataset contained no missing data. Additionally, the data was assessed for multivariate normality (outliers, multicollinearity, and homoscedasticity).

Preliminary Statistical Analysis

Using SPSS, descriptive statistics were computed for all of the variables. Reliability estimates (Cronbach's alpha) were computed for the scales used in the survey, as well as Pearson product moment correlations (inter-correlations) between the variables used in the survey. Table 4.1 presents the means and standard deviations of the scores and the measures, together with Cronbach's alpha values, used in this study.

Table 4.1.

Means and Standard Deviations of Writing Achievement Goals, Writing Self-Regulation, and

Writing Grades

	М	SD	Number of	Cronbach's α
			Items	
MG	3.24	0.41	4	0.56
PAPG	3.00	0.72	4	0.87
PAVG	2.29	0.85	4	0.84
WSR	2.45	0.53	11	0.85
WG	2.91	0.59		0.80*

Note. WAG = Writing Achievement Goals Scale, MG = Writing Mastery Goals Subscale, PAPG = Writing Performance-Approach Goals Subscale, PAVG = Writing Performance-Avoidance Goals Subscale, SR = Writing Self-Regulation Scale, WG = Writing Grades; *Inter-rater reliability.

Relationships among Writing Achievement Goals, Writing Self-Regulation, and Writing Grades

Pearson Product Moment Correlations were used to assess relationships across all three goal orientations. Pearson Product Moment Correlations are displayed in Table 4.2. The results of these analyses showed that writing mastery goal orientation was positively correlated with writing performance-approach goal orientation, r = 0.37, p < 0.01, writing self-regulation, r = 0.45, p < 0.01, and writing grades, r = 0.36, p < 0.01. Writing mastery goal orientation was not correlated with writing performance-avoidance goal orientation.

Table 4.2.

Matrix of Correlation among College Students' Writing Goal Orientations, Writing, Self-

Regulation,	and	Writing	Grades
-------------	-----	---------	--------

	MG	PAPG	PAVG	SR	
MG					
PAPG	0.372**				
PAVG	-0.031	-0.367**			
SR	0.451**	0.377**	-0.325**		
WG	0.362**	0.514**	-0.198*	0.426**	

Note. MG = Writing Mastery Goals, PAPG = Writing Performance-Approach Goals, PAVG = Writing Performance-Avoidance Goals, SR = Writing Self-Regulation, WG = Writing Grades; **p < 0.01, *p < 0.05.

Writing performance-approach goal orientation was negatively correlated with writing performance-avoidance goal orientation, r = -0.37, p < 0.01, and positively correlated with writing self-regulation, r = 0.38, p < 0.01, and writing grades, r = 0.51, p < 0.01.

Lastly, writing performance-avoidance orientation was negatively correlated with writing self-regulation, r = -0.33, p < 0.01, and writing grades, r = -0.20, p < 0.01, while writing self-regulation was positively correlated with writing grades, r = 0.43, p < 0.01. Although statistically significant, all correlations reported were moderate to weak in strength.

Structural Equation Modeling

To answer the three focal research questions, structural equation modeling was used to investigate the relationships and mediational values of the constructs. One model was developed for each goal orientation, three models in all. For example, the first model investigated the relationships between writing mastery goal orientation and the mediational ability of writing selfregulation. The second model did the same for performance-approach goal orientation and so forth. The models were examined using the statistical application Rstudio (lavann). None of the data were missing and assumptions of multivariate normality were met.

The paths from the three writing goal orientations (mastery, performance-approach, and performance-avoidance) were examined for their influence on writing self-regulation, as well as their direct influence on writing grades. The path of primary interest is the direct influence of writing self-regulation on writing grades. Writing self-regulation would be shown to be a partial mediator of writing goal orientations if the direct paths from writing self-regulation to writing grades and each writing goal orientation to writing grades were all statistically significant.

It was expected, based on prior literature, that the relationships between each writing goal orientation and writing grades would be partially mediated by writing self-regulation. Again, a partially mediated model would assume a direct effect of each writing goal orientation on writing grades, and indirect effects of each writing goal orientation on writing grades as mediated by writing self-regulation. The models would provide a good fit to the data if each writing goal orientation was significantly related, both directly and indirectly, to writing grades.

Testing the Models

SEM is a statistical method used to assist in confirming and disconfirming models using measurement instruments because it accounts for measurement error (Schumacker & Lomax,

1996). SEM was chosen for this study because it allows for the simultaneous examination of multiple independent variables. When conducting SEM, it is necessary to first test the measurement model to determine if the fit indices are acceptable. According to Hu and Bentler (1999), the following are the acceptable levels for each fit criterion: Normal Theory Weighted Least Squares Chi-Square (χ 2) p-value \geq 0.05, χ 2/df, Root Mean Square Error of Approximation (RMSEA) \leq 0.06, Standard Root Mean Square Residual (SRMR) \leq 0.08, Comparative Fit Index (CFI) \geq 0.90, and Tucker-Lewis Index (TLI) \geq 0.90.

Measurement Models

Because the researcher could not measure the mediation effects of one mediator variable (writing self-regulation) across three separate independent variables (writing mastery, performance-approach, and performance-avoidance orientations) simultaneously, three separate models were established (one for each writing goal orientation). To establish the measurement models, confirmatory factor analysis (CFA) was used to confirm that the observed data confirmed the hypothesized models. The hypothesized measurement models can be found in Figures 4.1, 4.2, and 4.3 respectively. To test the proposed models, the following latent variables were identified: writing achievement goal orientations (mastery, performance-approach, and performance-avoidance) and writing self-regulation. Writing grades was defined as a manifest variable, measured directly through student writing samples. Each of these variables were used to form a measurement model that was tested for goodness-of-fit by examining the following fit indices (Fox, 2006): Normal Theory Weighted Least Squares Chi-Square (χ 2) and p-value, Root Mean Square Error of Approximation (RMSEA), Standard Root Mean Squared Residual (SRMR), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI). Indices are suggested to

have met fit standards with the following values: χ^2 p-value ≥ 0.05 , $\chi^2/df \leq 3$, RMSEA ≤ 0.06 , SRMR ≤ 0.08 , CFI ≥ 0.90 , and TLI ≥ 0.90 .

The chi-square fit index indicates whether or not a given model's covariance structure differs significantly from the observed covariance matrix. A significant chi-square value indicates poor fit. The CFI represents the improvement of the hypothesized model over a null model which assumes the variables are uncorrelated. The TLI compares the lack of fit in the hypothesized model with the lack of fit in an uncorrelated baseline model. The RMSEA indicates the extent to which the lack of model fit is due to misspecification of the tested model, as opposed to sampling error. It is expressed per degree of freedom and is sensitive to the number of parameters estimated in the model. The SRMR statistic represents the difference between the observed correlation and the predicted correlation as a measure of model fit or goodness.



Figure 4.1. Hypothesized measurement model of writing mastery goals and writing self-regulation. The ovals represent latent constructs and the rectangles represent individual survey items.



Figure 4.2. Hypothesized measurement model of writing performance approach goals and writing self-regulation. The ovals represent latent constructs and the rectangles represent individual survey items.



Figure 4.3. Hypothesized measurement model of writing performance avoidance goals and writing self-regulation. The ovals represent latent constructs and the rectangles represent individual survey items.

Structural Models

SEM was used to measure the structural models. SEM was chosen for this study because it can measure the relationships between both observed and unobserved variables, and it can measure both direct and indirect effects of exogenous and endogenous variables simultaneously. The goal of this study was to measure the direct and indirect effects of writing goal orientations and the mediation effects of writing self-regulation on writing grades; therefore, SEM was chosen to reach this goal. The hypothesized structural models can be found in Figures 4.4, 4.5, and 4.6 respectively.



Figure 4.4. Hypothesized structural model of writing mastery goal orientation, writing self-regulation, and writing grades. The ovals represent latent constructs and the rectangle represents a measured variable. Bold lines represent significant positive relationships.



Figure 4.5. Hypothesized structural model of writing performance approach goal orientation, writing self-regulation, and writing grades. The ovals represent latent constructs and the rectangle represents a measured variable. Bold lines represent significant positive relationships.



Figure 4.6. Hypothesized structural model of writing performance avoidance goal orientation, writing self-regulation, and writing grades. The ovals represent latent constructs and the rectangle represents a measured variable. The bold dashed lines represent significant negative relationships and bold solid like represents a positive relationship.

Writing Mastery Goals, Writing Self-Regulation, and Writing Grades

The first measurement model tested was writing mastery goal orientation and writing self-regulation. This model examined whether writing mastery goal orientation relates to writing grades and writing self-regulation behaviors, and whether writing self-regulation mediates the

relationship between writing mastery goal orientation and writing grades. Specifically, this model attempted to answer three questions:

- 1. Does writing mastery goal orientation relate to writing grades?
- 2. Does writing mastery goal orientation relate to writing self-regulation?
- 3. Does writing self-regulation partially mediate the relationship between writing mastery goal orientation and writing grades?

The measurement model ran in 31 iterations. The results showed that the measured variables were not reliable indicators of the latent factors, and the overall model demonstrated poor fit. Therefore, the researcher investigated parameter estimates and the model's modification indices to examine item quality and potential relationships among items. Items one (0.321), nine (0.261), and 10 (0.319) of the writing mastery goal orientation subscale showed poor fit and were subsequently eliminated. In other words, these items were not good measures of mastery goal orientation. In essence, the writing mastery goal subscale showed poor internal consistency and, and three of the four subscale items did not perform well in the present study. Additionally, items 18 (0.215), 19 (0.314), 20 (0.345), and 22 (0.235) of the Writing Self-Regulation Scale (WSRS) also showed poor fit and were eliminated from further analyses. Modification indices indicated significant correlations among items 16 and 21, 14 and 15, 13 and 16, and 17 and 23. The resulting model ran in 28 iterations and showed good fit (five of six fit indices were in acceptable range). The resulting measurement model can be found in Figure 4.7 and the structural model in Figure 4.8. The fit indices for both models can be found in Table 4.3.



Figure 4.7. Measurement model of writing mastery goals and writing self-regulation. The ovals represent latent constructs, the rectangles represent individual survey items, and the circles represent residual variances.

The structural model ran in 32 iterations, and results indicated that the overall structural model had acceptable fit and the null hypothesis was accepted. However, it was hypothesized that writing self-regulation would partially mediate the relationship between writing mastery goal orientation and writing grades, when in fact the structural model showed full mediation. The direct path from writing mastery goal orientation to writing grades was not significant. The model showed that the key to increased writing grades was writing self-regulation. Writing

mastery goal orientation alone was not significantly related to writing grades; yet, mastery goal orientation was positively related to writing self-regulation, and writing self-regulation in turn was positively related to writing grades.





Table 4.3.

Fit Indices for the Measurement and Structural Models of Writing Mastery Goals, Writing Self-

Fit Index	Measurement Statistic	Structural Statistic
Chi-square	0.05	0.05
χ2/df	1.65	1.55
Comparative Fit Index (CFI)	0.97	0.97
Tucker-Lewis Index (TLI)	0.95	0.94
RMSEA	0.08	0.07
SRMR	0.05	0.05

Writing Performance-Approach Goals, Writing Self-Regulation, and Writing Grades

The second measurement model tested was writing performance-approach goal orientation and writing self-regulation. This model examined whether writing performanceapproach orientation relates to writing grades and writing self-regulation behaviors, and whether writing self-regulation mediates the relationship between writing performance-approach orientation and writing grades. Specifically, this model attempted to answer the following questions:

- 1. Does writing performance-approach orientation relate to writing grades?
- 2. Does writing performance-approach orientation relate to writing self-regulation?
- 3. Does writing self-regulation partially mediate the relationship between writing performance-approach orientation and writing grades?

The model ran in 31 iterations. Results showed that the measured variables were not reliable indicators of the latent factors, and the overall model demonstrated poor fit. Again, as with the previous model, the researcher investigated parameter estimates and the model's modification indices to investigate item quality and item relationships. All parameters were significant; however, modification indices indicated significant correlations among items four and eight, four and 12, 12 and 21, 13 and 16, 14 and 15, 15 and 16, 16 and 17, 16 and 21, and 21 and 23. The resulting model ran in 45 iterations and showed good fit. The resulting measurement model can be found in Figure 4.9 and the structural model in Figure 4.10. The fit indices for both models can be found in Table 4.4.



Figure 4.9. Measurement model of writing performance approach goal orientation and writing self-regulation. The ovals represent latent constructs, the rectangle represents individual survey items, and the circles represent residual variances.

The structural model ran in 48 iterations, and results indicated that the overall structural model had good fit and the null hypothesis was accepted. Results indicated significant

relationships across all paths, except the one of most importance, writing self-regulation to writing grades. Writing performance-approach orientation showed a direct significant relationship to writing grades, but it was not indirectly related to writing grades, meaning, as expected, writing self-regulation did not mediate the relationship between writing performance-approach orientation and writing grades.



Figure 4.10. Structural model of writing performance approach goal orientation, writing self-regulation, and writing grades. The ovals represent latent constructs and the rectangle represents a measured variable. Bold lines represent significant relationships.

Table 4.4.

Fit Indices for the Measurement and Structural Models of Writing Performance-Approach

Goals, Writing Self-Regulation, and Writing Grades

Fit Index	Measurement Statistic	Structural Statistic
Chi-square	0.00	0.01
χ2/df	1.77	1.53
Comparative Fit Index (CFI)	0.95	0.96
Tucker-Lewis Index (TLI)	0.92	0.94
RMSEA	0.09	0.07
SRMR	0.06	0.06

Writing Performance-Avoidance Goals, Writing Self-Regulation, and Writing Grades

The third measurement model tested writing performance-avoidance goal orientation and writing self-regulation. This model examined whether writing performance-avoidance orientation relates to writing grades and writing self-regulation, and whether writing self-regulation mediates the relationship between writing performance-avoidance orientation and writing grades. The third and final model attempted to answer the following questions:

- 1. Does writing performance-avoidance goal orientation relate to writing grades?
- 2. Does writing performance-avoidance goal orientation relate to writing selfregulation?
- 3. Does writing self-regulation mediate the relationship between writing performance-avoidance goal orientation and writing grades?

The model ran in 30 iterations. The results showed that the measured variables were not reliable indicators of the latent factors, and the overall model demonstrated poor fit. As with the two previous models, the researcher investigated parameter estimates and the model's modification indices to investigate item quality and relationships. All parameters were significant, but modification indices did in fact indicate significant correlations among items six and seven, 13 and 16, 14 and 15, 15 and 16, 16 and 17, 16 and 21, and 21 and 23. The resulting model ran in 37 iterations and showed good fit (four of six fit indices were in acceptable range). The resulting measurement model can be found in Figure 4.11 and the structural model in Figure 4.12. The fit indices for both models can be found in Table 4.5.



Figure 4.11. Measurement model of writing performance-avoidance goal orientation and writing self-regulation. The ovals represent latent constructs, the rectangles represent individual survey items, and the circles represent residual variances.

The structural model ran in 43 iterations, and results indicated that the overall structural model had good fit and the null hypothesis was accepted. It was predicted that writing

performance-avoidance goal orientation would have direct negative relationships with both writing self-regulation and writing grades. The structural model did indicate a significant negative relationship between writing performance-avoidance orientation and writing selfregulation, but writing performance-avoidance orientation did not directly relate to writing grades. Writing self-regulation did mediate the relationship between writing performanceavoidance goal orientation and writing grades, but the model showed full mediation, not partial mediation as predicted.



Figure 4.12. Structural model of writing performance avoidance goal orientation, writing self-regulation, and writing grades. The ovals represent latent constructs and the rectangle represents a measured variable.

Table 4.5.

Fit Indices for the Measurement and Structural Models of Writing Performance-Avoidance

Goals, Writing Self-Regulation, and Writing Grades

Fit Index	Measurement Statistic	Structural Statistic
Chi-square	0.03	0.04
χ2/df	1.63	1.40
Comparative Fit Index (CFI)	0.97	0.97
Tucker-Lewis Index (TLI)	0.95	0.95
RMSEA	0.07	0.06
SRMR	0.05	0.06

Chapter 5: Discussion

This study examined the relationships between college students' writing goal orientations, writing self-regulation, and writing grades. Three research questions pertaining to writing goal orientations, writing self-regulation, and writing grades were addressed in this study:

- 1. Do college students' writing achievement goals relate to their writing grades?
- 2. Do college students' writing achievement goals relate to their writing selfregulation behaviors?
- 3. Does writing self-regulation partially mediate the relationship between writing achievement goals and writing grades in college writing classrooms?

Each research question was addressed for each mediational model, three models in all. To answer these research questions, scale reliability and correlations among variables were first examined, followed by structural equation modeling techniques to investigate the proposed mediational models. The following sections summarize the findings presented in Chapter 4 in relation to the literature. Section one addresses internal consistency of each scale administered; section two addresses the relationships between the variables studied by discussing Cronbach alpha values; and lastly, section three discusses the mediational models investigated and addresses the three aforementioned research questions for each model. The mastery goal orientation model is first discussed, followed by the performance-approach orientation model, and finally the performance-avoidance orientation model. Limitations and implications for future research are discussed.

Scale Reliability

Adjustments were made to the WAG and WSR scales used in Tadlock and Zumbrunn (2012) to better frame the items. Specifically, three items of the original 15 items for the WAG scale were removed because they were not applicable to the current framework. In addition, eight of the 20 items for the WSR scale were removed in an effort to refine the scale's structure. Additionally, instead of the abbreviated five point scale used in the 2012 study, the researcher chose a four point scale for the current study because the writing rubric used to measure participants' written responses was on a four point scale. Having both the survey measures and the written responses scored on the same interval allowed for measurement comparability.

The WSR scale demonstrated good reliability with a Cronbach's alpha of 0.85. Unfortunately, the reliability estimates for the WAG scale and the writing mastery goal subscale reported in the current study, see Table 4.1, fell below the desired threshold. The reason for the WAG scale having such a low Cronbach's alpha was due to the poor reliability of the MG subscale, 0.56 respectively. The PAPG and PAVG subscales demonstrated good reliability estimates, but due to the MG subscale's low Cronbach's alpha, the reliability of the WAG scale as a whole was low. Because of this finding, additional investigations of the items administered in the current study, specifically those within the MG subscale, are warranted.

Relationships between Writing Achievement Goal Orientations, Writing Self-Regulation and Writing Grades

Pearson Product Moment Correlations were used to investigate correlations among the three goal orientations, writing self-regulation, and writing grades. First, correlations among the achievement goal orientations were examined. As expected mastery goal orientation was positively correlated with performance-approach goal orientation, but surprisingly, mastery

orientation showed no correlation to performance-avoidance orientation. Performance-approach orientation was in fact negatively correlated to performance-avoidance orientation. It was expected that both mastery and performance-approach orientation would be negatively correlated with performance-avoidance orientation, because students who hold performance-avoidance orientations tend to display maladaptive behaviors, such as withdrawal, when faced with challenging tasks. Previous studies on achievement goal orientations have supported this assumption, noting that mastery orientation, and in many cases performance-approach orientation is almost always associated with maladaptive academic behaviors (Barron & Harackiewicz, 2003; Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Urdan, 2004)

Second, correlations between achievement goal orientations and writing grades were explored. Writing mastery orientation did show a positive correlation with writing grades, as did writing performance-approach orientation. This finding was expected. Students who approach tasks from mastery and even performance-approach orientations have shown greater probability of producing positive academic outcomes when compared to students who assume performanceavoidance orientation (Richardson et al., 2012). As anticipated, writing performance-avoidance orientation was negatively correlated with writing grades.

Lastly, the relationship between achievement goal orientations and writing self-regulation were investigated. Both mastery and performance-approach orientations were positively correlated with writing self-regulation, while performance-avoidance orientation showed a negative relationship with writing self-regulation. It was no surprise that writing mastery and performance-approach orientations were associated with positive academic behaviors like selfregulation or positive academic outcomes, as most studies have found those goal orientations to

be closely aligned with academic success (Urdan, 2004). This result suggests that behaviors associated with mastery orientation are closely associated with performance-approach behaviors, and students who elicit behaviors associated with mastery orientation are likely to use self-regulation strategies during writing tasks. As previously mentioned, performance-avoidance orientation was negatively correlated with writing self-regulation. This finding supports prior achievement goal research that has found performance-avoidance orientation to relate to negative academic outcomes (Elliot & Church, 1997). With fear of failure being the strongest emotion associated with performance-avoidance orientation (Elliot & Church, 1997). Harackiewicz, 1996), it is highly unlikely that one with that approach would self-regulate their writing, much less experience positing writing outcomes.

It should be mentioned that writing self-regulation and writing grades were positively related. The researcher did expect writing self-regulation to correlate to writing grades, as prior self-regulation research in all contexts have found self-regulation to be correlated with positive academic outcomes (Harris et al., 2005; Lee, 2016). For the most part, these results were not surprising, and were in line with prior research. Prior research has shown mastery goal orientation to be related to positive academic outcomes (Barron & Harackiewicz, 2003), even within the context of writing. However, some studies have shown mastery goal orientation in contexts other than writing to not correlate with positive academic outcomes (e.g., Harackiewicz et al., 2000). For instance, in a recent study of writing motivation, Farsani et al. (2014) found no relationship between achievement goal orientations and writing achievement. Farsani et al. (2014) also failed to find a relationship between writing self-regulation and writing achievement, but did report a significant relationship between mastery and performance-approach goal orientations and writing self-regulation (see Appendix E). The present study found the same

result, with both mastery and performance-approach orientations relating to writing selfregulation.

Mediational Models of Writing Achievement Goal Orientations, Writing Self-Regulation and Writing Grades

To answer the research questions, separate models were tested for each goal orientation. The first step in conducting mediation was to establish a measurement model. This was done through confirmatory factor analysis. Because it was necessary to regress the mediating variable (writing self-regulation) onto three separate independent/latent variables (writing mastery, performance-approach, and performance-avoidance orientations) simultaneously, three separate measurement models were created. Doing so provided an accurate estimate of the mediational strength of writing self-regulation.

Writing Mastery Goal Orientation, Writing Self-Regulation and Writing Grades

This model attempted to answer the three questions for mastery goals:

- 1. Does writing mastery goal orientation relate to writing grades?
- 2. Does writing mastery goal orientation relate to writing self-regulation?
- 3. Does writing self-regulation partially mediate the relationship between writing mastery goal orientation and writing grades?

With the revised scales, the structural model showed acceptable fit. Unexpectedly, the model showed full, not partial, mediation. This was an important finding because it held implications for all three research questions. To answer research question one, the researcher examined the path from writing mastery goal orientation to writing grades. This path was not significant. This result indicated that in the current study, mastery goal orientation did not relate to writing grades. To answer question two, the researcher investigated the path from writing

goal orientation to writing self-regulation. This path was in fact significant and showed that writing goal orientation did relate to the occurrence of writing self-regulation. Lastly, to answer research question three, the researcher investigated the path from writing self-regulation to writing grades. This path was also significant. Because the paths from mastery goal orientation to self-regulation and self-regulation to writing grades were significant and the path from mastery goal orientation to writing grades was not, the model showed full mediation. In other words, mastery orientation was not directly related to writing grades; however, with self-regulation as a mediator, mastery orientation did indirectly predict writing grades.

This model showed that college students with mastery goal orientation are likely to selfregulate their writing behaviors, which in turn predicts increased writing grades. The model also showed that writing mastery orientation in absence of self-regulation does not predict high writing grades. It was of no surprise that writing self-regulation played a key role in this model. Prior research has shown self-regulation to be instrumental in producing positive academic outcomes (Zimmerman, 2008).

The researcher was surprised to not find a direct path between writing mastery orientation and writing grades, as these two variables have been shown to be highly correlated (Kaplan et al., 2009). But, as previously mentioned, some studies have found no relationship between mastery goal orientation and achievement (Harackiewicz et al., 2000; Seaton et al., 2014), so this result isn't entirely unsupported. However, in one of the first studies to examine the relationships between writing achievement goals, writing self-regulation, and writing achievement, Kaplan et al. (2009) found a very different result. In fact, in Kaplan et al.'s (2009) study, mastery goal orientation outperformed all other goal orientations, and was the only goal orientation to positively predict writing achievement and writing self-regulation. The researcher

expected a similar outcome, and was surprised to find that writing mastery goal orientation was not directly related to writing grades. With that said, due to the poor reliability and factor structure of the MG subscale, results from this model should be replicated to further investigate the relationships among variables.

Expanding on the poor internal consistency of the MG subscale, it's important to note that three of the four items on the MG subscale had to be removed due to poor consistency values. Because of this, the resulting mediational analysis consisted of a one-item latent variable representing mastery goal orientation. If the consistency values for the deleted items had been stronger, and the full four-item subscale had been examined, structural equation modeling results from the mastery goal orientation mediational model could have been different; and, it's possible all three paths examined would have been significant. Future research should attempt to further investigate the paths examined in the mastery goal orientation model.

Writing Performance-Approach Orientation, Writing Self-Regulation and Writing Grades

This model attempted to answer the three questions for performance-approach goals:

- 1. Does writing performance-approach orientation relate to writing grades?
- 2. Does writing performance-approach orientation relate to writing self-regulation?
- 3. Does writing self-regulation partially mediate the relationship between writing performance-approach orientation and writing grades?

The researcher first established a measurement model. To align with the previous model, and knowing that items 18, 19, 20, and 22 from the self-regulation scale performed poorly during the mastery goal orientation measurement model, these items were discarded prior to analysis. Following the initial analysis, adjustments were made by the researcher to account for correlations among items on the PAPG subscale and SR scale. To answer research question one, the researcher examined the path from performanceapproach orientation to writing grades. This particular path was significant, indicating that performance-approach orientation was related to writing grades. To answer question two, the researcher investigated the path from performance-approach orientation to writing selfregulation. This path was also significant and indicated that performance-approach orientation also predicted writing self-regulation. To this point, the model had produced expected results. However, the path from writing self-regulation to writing grades was not significant, research question three, meaning the model showed no mediation. If the path from writing self-regulation to writing grades had been significant the model would have shown partial mediation as expected.

Results from this model were perplexing. The researcher expected to find direct relationships between writing performance-approach goal orientation, writing self-regulation and writing grades, as prior research in contexts other than writing have found performance-approach orientation to be strongly correlated to positive academic outcomes, in some instances more so than mastery orientation (Cury et al., 2006; Harackiewicz et al., 2000; Seaton et al., 2014). Results from this study show that performance-approach orientation predicts writing grades and self-regulation in a postsecondary setting. Because performance-approach students are driven by demonstrating competence, it was expected that they would experience positive writing outcomes, to a degree, and would engage in self-regulation behaviors to earn their desired results. However, results from the performance-approach model showed that participants with writing performance-approach orientation were likely to self-regulate their writing, and they were likely to have positive writing outcomes, yet those outcomes were not enhanced through the use of self-regulation strategies. In other words, their use of writing self-regulation strategies.

did not increase their writing grades. This result was surprising considering what prior research has shown about self-regulation and achievement (Labuhn et al., 2010; Wolters, 2011).

Writing Performance-Avoidance Orientation, Writing Self-Regulation and Writing Grades

The third and final model attempted to answer the following questions:

- 1. Does writing performance-avoidance goal orientation relate to writing grades?
- 2. Does writing performance-avoidance goal orientation relate to writing selfregulation?
- 3. Does writing self-regulation mediate the relationship between writing performance-avoidance goal orientation and writing grades?

Again, as with the two previous models, a measurement model was established, and items 18, 19, 20, and 22 from the self-regulation scale were discarded prior to analysis. Following initial analysis, adjustments were made to accounts for correlations among items on the PAVG and subscale and the SR scale. All items on the PAVG subscale performed as expected.

The researcher anticipated finding significant negative relationships between the performance-avoidance orientation, self-regulation, and writing grades. For research question one, the path from performance-avoidance orientation to writing grades was examined. No relationship was found between these two variables. Although the researcher anticipated finding a significant negative relationship between performance-avoidance orientation and writing grades, the finding was not surprising. The path between the two variables was in fact negative, just not enough to be considered significant.

For research question two, the researcher investigated the path from performanceavoidance orientation to writing self-regulation. This path was significant at a negative level, meaning performance-avoidance orientation was related to the absence of writing self-regulation

behaviors in the current study. Lastly, for research question three, the researcher investigated the path from writing self-regulation to writing grades. This was path was also significant, meaning the model showed full mediation. Like the mastery orientation model, because the path from performance-avoidance orientation to writing grades was not significant, but all other paths were, the model demonstrated full mediation. Had the path from performance-avoidance orientation to writing grades been significant, the model would have shown partial mediation as anticipated.

As anticipated, results showed a negative relationship between writing performanceavoidance goal orientation and writing self-regulation. In other words, writing self-regulation fully mediated the relationship between writing performance-avoidance orientation and writing grades, with a direct negative relationship between performance-avoidance orientation and selfregulation, and an indirect relationship between performance-avoidance orientation and writing grades. Prior research has shown that performance-avoidance goal orientation can have negative consequences for achievement (Urdan, 2004). Based on the existing literature, it is unlikely that students holding performance-avoidance orientations in any context will engage in selfregulation (Meece & Miller, 1999). This model showed that participants who fear writing tasks (writing performance-avoidance orientation), are less likely to use writing self-regulation strategies, and more likely to have lower writing grades. Due to the limited research on these variables in postsecondary settings, additional research across all three models is warranted.

Summary of Findings

In summary, three models were tested, one for each achievement goal orientation, and three research questions were established to address the paths established in each model. In other words, the three research questions were addressed and answered separately through each

mediational model. Research question one examined the relationships between each writing goal orientation and writing grades.

Results showed that writing performance-approach goal orientation was positively related to writing grades, as the structural path from writing performance-approach goal orientation to writing grades was found to be significant. On the contrary, the paths from writing mastery and performance-avoidance goal orientations to writing grades were not significant; therefore, no relationship between these variables was reported. Research question two investigated the relationships between writing goal orientations and writing self-regulation. All three of these paths were found to be significant, as each writing goal orientations showing positive relationships, and writing performance-avoidance showing a negative relationship. Finally, research question three addressed the mediational role of writing self-regulation. Results showed that writing self-regulation fully mediated the relationships between writing mastery and performance-avoidance showing a between writing mastery and performance-avoidance showing a negative relationship. Finally, research question three addressed the mediational role of writing self-regulation. Results showed that writing self-regulation fully mediated the relationships between writing mastery and performance-avoidance goal orientations and writing grades, but did not mediate the relationship between writing performance-approach goal orientation and writing grades. The following sections address these research questions across each model tested.

Mastery Goal Orientation Model

The first model tested the relationships between mastery goal orientation, writing selfregulation and writing grades. This model had to undergo modifications to increase the model's fit indices. Specifically, three items from the MG subscale had to be removed from the analysis due to poor fit. Additionally, several correlations were found among items on the SR scale and had to be accounted for in the model. Once these modifications were made, the resulting model showed acceptable fit.

Research question one looked at the path from mastery goal orientation to writing grades, examining whether mastery goal orientation would relate to writing grades. The researcher expected this path to be significant and for mastery goal orientation to positively relate to writing grades. Results did not confirm the researcher's expectations, as this path proved to be nonsignificant. Research question two looked at the path from mastery goal orientation to writing self-regulation, examining whether mastery goal orientation would relate to the occurrence of writing self-regulation. This path held true to the researcher's prediction, as this path showed mastery goal orientation related to the occurrence of writing self-regulation. Lastly, research question three examined the mediational role of writing self-regulation and whether writing selfregulation partially mediates the relationship between mastery goal orientation and writing grades. The researcher anticipated that writing self-regulation would partially mediate the relationship between mastery orientation and writing grades. In order for partial mediation to be achieved, each parameter or path in the model had to be significant. Unexpectedly, actual results showed full mediation. In other words, the direct path from mastery orientation to writing grades was not significant, but the paths from mastery orientation to writing self-regulation and writing self-regulation to writing grades were significant. In mediation models, this is referred to as the indirect path. The indirect path measures the mediational value of the mediation variable, in this case writing self-regulation. If the direct path from mastery orientation to writing grades had been significant, the model would have shown partial mediation, but since mastery orientation was not directly related to writing grades, writing self-regulation was shown to be a full mediator of the relationship between mastery orientation and writing grades.

Performance-Approach Goal Orientation Model

The second model tested the relationships between performance-approach orientation, writing self-regulation and writing grades. This model also required modifications due to poor fit. Unlike the mastery orientation model, item reduction was not necessary. However, several correlations among SR scale items were found and accounted for in the analysis. Research question one examined the path from performance-approach goal orientation to writing grades. This path was significant, showing performance-approach goal orientation to predict the occurrence of writing grades. Research question two examined the path from performanceapproach goal orientation to writing self-regulation. Results showed this path was significant as well. Research question three investigated the mediational role of writing self-regulation by examining the path from writing self-regulation to writing grades. Like the mastery goal orientation model, the researcher expected the performance-approach orientation model to also show partial mediation. Again, for partial mediation to occur, each path in the model would need to be significant. As previously noted, the resulting model showed a significant direct path from performance-approach orientation to writing grades, and a significant direct path from performance-approach orientation to writing self-regulation as well. Unfortunately, the path from writing self-regulation to writing grades was not significant. In other words, the performance-approach goal orientation failed to demonstrate any mediation.

Performance-Avoidance Goal Orientation Model

The third and final model tested the relationships between performance-avoidance orientation, writing self-regulation and writing grades. As with the performance-approach model, this model also required slight modifications. All items showed good fit, but due to correlations among several SR scale items, adjustments were needed. To address research

question one, the researcher investigated the path from performance-avoidance goal orientation to writing grades. The researcher expected this path to show a significant, negative relationship. The result did not confirm expectation, as this path showed no relationship between performance-avoidance goal orientation and writing grades. Research question two looked at the path from performance-avoidance goal orientation to writing self-regulation. This path did show a significant, negative relationship, and confirmed the researcher's expectation that performanceavoidance goal orientation would negatively relate to writing self-regulation.

Finally, to answer research question three, the researcher investigated the path from writing self-regulation to writing grades. Like the mastery orientation model, the performance-avoidance model also showed full mediation. The direct path from performance-avoidance orientation to writing grades was not significant; however, the paths from performance-avoidance avoidance orientation to writing self-regulation and writing self-regulation to writing grades were significant.

In summary, the researcher expected that writing self-regulation would partially mediate the relationships between goal orientations and writing grades across all three models. Results showed that writing self-regulation failed to serve as a partial mediator in any of models. In fact, writing self-regulation failed to mediate the performance-approach orientation model altogether, while full mediation was reported in the mastery and performance-avoidance orientation models. Additional research replicating the current study is needed to further investigate the results from the present study.

Implications for Educators

Findings from this study shed light on the role a college student's achievement goal orientation may play on their writing behaviors and grades. Results show that the achievement

goal orientation held by a college student will affect their approach to writing assignments and even impact their writing grades. Prior research (Ferrari et al., 1998; Kennedy, 1985; Pianko, 1979; Zimmerman & Bandura, 1994) shows that students who self-regulate their writing are more engaged in the writing process (e.g., planning, editing, reviewing, etc.) and these behaviors are commonly associated with positive writing outcomes, such as good grades. In two of the three models tested in this study, this theory held true, showing that college students who selfregulate their writing experience higher writing grades. Conversely, students who failed to use writing self-regulation strategies were less likely to earn high writing grades. This study attempted to take research on writing self-regulation a step further by showing that writing achievement goals predetermine the occurrence of writing self-regulation strategies. Results showed that the achievement goal orientation held by a college writer does in fact relate to whether or not that student will engage in self-regulatory behaviors. Specifically, in the present study, mastery and performance-approach oriented college students were more likely to self-regulate their writing, as opposed to college students with performance-avoidance

orientation who were less likely to elicit these behaviors.

With these findings, practical implications exist. College professors and instructors who incorporate writing assignments into their curriculum should consider that by the time students enter college classrooms they have had a number of experiences with writing and have formed their own thoughts and feelings about the writing process. In other words, their approaches to writing tasks, or the writing goal orientations they hold, have been formed, and these goals will have effects on their writing grades.

A first step in addressing this issue is for instructors to examine the writing achievement goal orientations held by their students. The availability of such instruments may pose an
immediate barrier, so future research so attempt to refine a writing achievement goal scale to better identify the achievement goal orientations held by college students. Knowing the writing achievement goal orientations held by the students will provide instructors insight into how their students approach writing tasks and the engagement behaviors they are likely to elicit.

A second step would be applying their knowledge of their students' achievement goal orientations by building in opportunities to discuss positive writing behaviors, ways in which good writing strategies can be incorporated into their writing routines, and how these strategies look when correctly applied. College instructors should be aware that not all students will enter their classrooms feeling efficacious about their writing abilities, approach writing tasks with a mastery orientation, or apply writing self-regulation strategies autonomously. Through awareness and understanding, college instructors may be able to alleviate and address many of the struggles college students experience with writing before interventions are too late.

Limitations

There were three limitations in the study design that may have impacted the quality of the data collected and influenced the results from the aforementioned analyses. The study examined the relationships between writing achievement goal orientations, writing self-regulation, and writing grades in a postsecondary setting. The relationships were studied using a convenience sample. Participants completed a survey to gather data related to their writing goal orientations and writing self-regulation behaviors; the researcher had participants respond to a short writing prompt to gather data on their writing grades. This study provided insight into an area of the literature that is currently sparse; however, survey quality, the context in which the data were collected, and the sample used may have limited the findings. Nevertheless, the study is a step toward bridging a gap in the literature.

Survey Quality

A major limitation of the focal study related to the scales used to collect data on the latent constructs. Because of limited prior validation, it was uncertain whether the survey items would perform desirably. Concerns emerged with items measuring writing mastery goal orientation and writing self-regulation, as items had to be removed before the measurement models could be established. Four of five items from the mastery scale produced estimates below acceptable thresholds and were removed from the model. In other words, these items did not perform as expected, and did not reliably measure the intended variables. The focal scales were created due to the lack of writing specific scales designed to measure writing achievement goal orientations and writing self-regulation. Future studies should attempt to better refine the focal scales to establish quality items that can be used to measure these writing motivation constructs.

Context of the Study

Additionally, reliability of the writing grades variable was a concern. In this study, writing grades were obtained by having participants respond to a brief writing prompt. Participants completed the prompt following their regularly scheduled class time, and their writing samples had no bearing on their academic standing. This study was conducted in a postsecondary setting and participants were solely recruited from non-writing intensive courses; therefore, their interest in producing writing samples could have been low, thereby decreasing the likelihood of the researcher capturing reliable data. Such scores could be deemed questionable, and may not be an accurate representation of the participants' true writing abilities. The concern is that participants, for many reasons, may not have put forth the necessary effort to produce quality writing samples. Future researchers should attempt to collect a writing source that is more indicative of participants' true writing ability. For example, collecting a written

assignment for a course, because it allows participants to spend more time on the task and immerse in the process, may be a more representative data source.

In addition to using more reliable writing samples, future researchers should attempt to score those writing samples using a rubric with more stretch than the one used in the current study. The present study employed a four-point rubric and that rubric provided very little range in writing scores. In fact, the range for the samples scored was two. This could have had an impact on the researcher's inability to find relationships between some of the variables and writing grades. A larger range in writing scores should strengthen the writing grades variable and improve future researchers' abilities to examine relationships among these variables.

It is important to mention that item 16 of the self-regulation scale, which asked participants whether they consider who will read their writing when they engage in a writing task, was highly correlated with other items across the self-regulation scale. This is an important item because it could mean that postsecondary students place more emphasis on writing tasks that in turn will be read by individuals they hold in high regard. In this case, participants completed a writing sample for a researcher and the sample held no bearing on their academic standing. Future research should attempt to use achievement data from sources relevant to students' academic standing. Doing so, may provide additional insight into the approaches postsecondary students take toward writing assignments and the behaviors with which they engage during such assignments.

The Sample

The last limitation concerned the nature and size of the sample. A convenience sample was used, and participants were recruited from non-writing intensive majors, which could have impacted the quality of the data. The researcher had difficulty recruiting a sufficient number of

participants who were willing to provide a writing sample. Many participants chose not to complete the writing prompt and their survey responses had to be discarded. The size of the sample used was large enough to perform SEM techniques; however, ideally, a larger sample would be used to get more robust results for generalizability purposes. Future studies should attempt to gather a larger sample and include participants from writing-intensive majors. Doing so should provide researchers with a more representative college sample. Additionally, future researchers should conduct a power analysis prior to the collecting data to determine how many participants are needed to sufficiently analyze each model.

Prior research shows that effort and motivation are associated with the emphasis students place on a task (Lee, 2016). It is possible that participants, across all three writing goal orientations, did not take the time to complete the survey with fidelity, or produce writing samples to the best of their abilities. Because of this, subsequent research is needed in this area using samples from writing intensive courses, writing intensive majors, and using writing achievement data gathered from more standardized sources.

Recommendations for Future Research

Future research on this topic should likely focus on replicating this study with different measures of goal orientation and self-regulation, and selecting a more authentic measure of writing achievement. It would be informative to conduct a similar study using more validated items to collect data on the aforementioned constructs to see if results parallel the present study. Also, if writing achievement scores cold be collected from a more standardized source, it may provide richer, more reliable data. Essentially, it could provide a clearer perspective of the relationship between writing goal orientation, writing self-regulation, and writing achievement in a postsecondary setting.

Future researchers may also want to incorporate a writing rubric that differentiates writing quality on more than four levels. Providing a larger scoring range should provide researchers with a larger variance in participants' writing grades, thereby providing a greater representation of writing quality. The four point scoring rubric used in the current study provided little variance in participants' writing grades, and could have contributed to the researcher's inability to find relationships in the models. In addition to a larger scoring range, future researchers may be well served to use a scoring rubric that investigates writing samples analytically, as opposed to holistically. The focus rubric aggregated multiple aspects of writing quality into one large score. Scoring each individual category (i.e., organization) separately and then combining scores from each category to form an overall writing score may provide a more reliable measure.

Lastly, the present study used a convenient sample of participants from non-writing intensive majors. Because interest plays a significant role in one's level of motivation, future studies should attempt to incorporate participants from writing intensive majors to better gauge the writing goal orientations and self-regulation behaviors of college students at large.

Conclusion

The results of this study show that college students' writing goal orientations, directly and/or indirectly, influence their writing grades. Across two of three models, writing selfregulation mediated the relationship between writing goal orientation and writing grades; however, only writing performance-approach goal orientation directly related to writing grades.

This study contributed to the literature by examining achievement goal orientations, selfregulation, and achievement in a writing context, and in a postsecondary setting. The results indicate that in postsecondary settings, holding a mastery approach for writing alone may not

lead to increased writing outcomes. They key to higher levels of writing achievement may rest in one's ability to self-regulate their writing, which may be more likely if they are mastery oriented.

There is no shortage of research supporting the use of self-regulation, as these behaviors have long been linked to academic success (Harris et al., 2005; Wolters, 2011). The researcher anticipated that writing self-regulation would be correlated to writing grades. It was also expected that writing mastery goal orientation would be correlated to writing grades, and that prediction did not hold true. Despite discrepancies in the achievement goal literature surrounding the relationship between mastery goal orientation and achievement, the researcher anticipated that due to increased levels of intrinsic motivation for writing, writing mastery goal orientation would relate to writing grades. One possible explanation for this finding was the method for data collection. Participants were recruited using a convenience sample. Non-writing intensive courses were targeted, and students responded to a writing prompt following their regularly scheduled class time. It is possible, considering the context and conditions of the study, that participants, even those with higher levels of intrinsic motivation, did not put forth the effort required to produce high quality writing samples.

Ultimately, this finding suggests that self-regulation is the key to writing successintrinsic motivation for writing alone will not produce positive writing outcomes. Of course, this finding needs additional examination, and future research should attempt to examine this link in a postsecondary setting. Again, future researchers may experience richer results if they target students in writing intensive courses or writing intensive majors.

In light of the findings, the following conclusions were made. Only one writing achievement goal orientation, performance-approach, was directly related to writing grades.

Discrepancies exits in the literature related to the achievement outcomes associated with performance-approach orientation; some studies have reported similar findings, supporting the notion that performance-approach orientation can produce positive achievement outcomes (Harackiewicz et al., 2000; Marsh et al., 2014). Postsecondary students may be more likely to hold a writing performance-approach goal orientation, and that orientation may lead to greater academic success in writing when compared to other writing goal orientations. Future studies should investigate the writing achievement goal orientations of postsecondary students, using participants enrolled in writing intensive courses and majors, as well as participants from non-writing intensive areas. Doing so may provide further insight into the formation of writing achievement goal orientations and their relation to writing achievement.

All three writing achievement goal orientations were related to writing self-regulation. Participants were more likely to self-regulate their writing if they held either writing mastery or performance-approach orientations. Participants were less likely to self-regulate their writing if they held a performance-avoidance orientation. Of no surprise, was the finding that writing selfregulation was related to higher writing grades. These findings are aligned with prior motivational research (Graham & Harris, 2000; Kistner, Rakoczy, & Otto, 2010; Zumbrunn et al., 2011).

In conclusion, the scales used in this study need further investigation, as some of the items did not perform as expected and could not be included in the structural models. Results from this study provide additional insight into the writing behaviors of postsecondary students. Subsequent studies could strengthen the results by improving the scales, collecting standardized writing samples, and pulling data from a larger, more diverse sample.

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Appendix A

College Writing Perceptions, Motivations, and Self-Regulation Inventory

Instructions

We would like you to think about some of the things you might do as you write. For each statement, please choose the word that best describes you. There are no right or wrong answers-just choose the word that best describes you.

All Achievement Goal and Self-Regulation items were scored on the following scale: 1 (Almost Never), 2 (Sometimes), 3 (Often), and 4 (Almost Always).

Demographic Information

1. What is your age?

- Native American F. Other
- 5. How many college level English/writing composition courses have you taken?
- A. 0 B. 1 C. 2 D. 3 E. 4 F. 5 or more

^{2.} What is your gender?

A. Male B. Female

^{3.} What is your academic standing?

A. Freshman B. Sophomore C. Junior D. Senior E. Graduate Student

^{4.} What is your ethnicity?

A. African American B. Asian/Pacific Islander C. Caucasian D. Latina/Latino E.

Writing Achievement Goal Items

1. When I'm Writing, I'm trying to become a better writer. (Mastery)

2. When I'm Writing, I'm trying to impress my instructor with my writing. (Performance-Approach)

3. When I'm Writing, I'm trying to hide that I have a hard time writing. (Performance-Avoidance) (RECODED)

4. When I'm Writing, I'm trying to be a better writer than my classmates. (Performance-Approach)

5. When I'm Writing, I'm trying to learn to choose words that best express my ideas. (Mastery)

6. When I'm Writing, I'm trying to keep people from thinking I'm a bad writer. (Performance-Avoidance) (RECODED)

7. When I'm Writing, I'm trying to keep my instructor from thinking I'm not very smart.

(Performance-Avoidance) (RECODED)

8. When I'm Writing, I'm trying to show off my writing skills. (Performance-Approach)

9. When I'm Writing, I'm trying to improve how I express my ideas. (Mastery)

10. When I'm Writing, I'm trying to better organize my ideas. (Mastery)

11. When I'm Writing, I'm trying to avoid looking silly in front of my classmates. (Performance-Avoidance) (RECODED)

12. When I'm Writing, I'm trying to be the best writer in my class. (Performance-Approach)

Writing Self-Regulation Items

13. I ask for help if I have trouble writing. (Help-Seeking)

14. I plan what I want to write before I start writing. (Planning)

15. Before I write, I set goals for my writing. (Goal Setting)

- 16. I think about who will read my writing. (Planning)
- 17. As I write, I change my writing plan. (Monitor)
- 18. I think about how much time I have to write. (Monitor)
- 19. While I write, I think about my writing goals. (Monitoring)
- 20. I keep writing even when it's difficult. (Emotion Regulation)
- 21. While I write, I avoid distractions. (Monitoring)
- 22. When I get frustrated with my writing, I make myself relax. (Emotion Regulation)
- 23. While I write, I talk myself through what I need to do. (Self -Instructions)

Appendix B

Persuasive Writing Task

In this step, think about a time in your daily life when you were dissatisfied with a policy, product, problem, or incident that affected you. Write one or two paragraphs describing the problem and explain why the issue is important and what should be done to resolve it. Feel free to use the extra blank sheet of paper to map out your ideas. Please return this sheet along with your idea sheet when finished. Please do not write your name on your essay. Thank you for your time!



Appendix C

Scoring Compositions for Overall Quality

Your job is to evaluate the overall quality of the students' compositions. Many dimensions contribute to overall quality. Common criteria for good writing include Ideas or content, Organization, Word choice, Sentence fluency, and Conventions. **Ideas** are the substance of a piece of writing. Good writing includes a clear overall topic and subordinate ideas that make sense and that are clearly explained and elaborated. **Organization** is important to make the ideas in a paper clear and accessible to the reader. Well-written compositions usually include an introduction to the topic. Subordinate ideas should be clearly connected to the overall topic with appropriate transitions. **Word choice** is important both for clarity and style. Well-chosen words convey meaning clearly and enliven the writing. Poorly chosen words may be vague or repetitive. In some cases, word **usage** may be incorrect. **Sentence fluency** includes the flow of language and variety in sentences, as well as correct grammar and sentence structure. Finally, **conventions** are all the mechanical features of written language- spelling, punctuation, capitalization. Spelling and major punctuation errors have been corrected in these papers, so you will not need to consider them.

Overall Quality

Score of 4

The composition has a clear overall topic elaborated with ideas that are supported with specific and relevant details. It is organized with an introduction, clearly sequenced ideas,

smooth transitions, and a conclusion. Words are chosen that convey meaning clearly, and sentences are varied in form and length. There are few, if any, errors in grammar and usage. Score of 3

The composition has a clear overall topic with related ideas that are supported with details. Most of the ideas are elaborated to some degree. It is organized with an introduction, a sequence of ideas with some transitions, and at a conclusion. Word choice is generally appropriate, and there is some variety of sentences. There may be occasional errors in grammar or usage, but they do not interfere with understanding.

Score of 2

The composition has a topic and a few related ideas but there is little elaboration. Ideas may not be explained well or may be a little difficult to understand. Organization may be weak and it may lack an introduction and transitions among ideas. Word choice may be repetitive or vague, and sentences may be simple or lack variety. Errors in grammar and usage may interfere with understanding or fluent reading.

Score of 1

The composition has major problems of content and/or organization. It may lack a clear topic; it may have few ideas or the ideas may not make sense or be connected to the topic; it may be poorly organized and difficult to follow. There is little, if any, elaboration of ideas. Word choice may be repetitive or inappropriate, and sentences may be short and simple. There may be frequent errors in grammar and usage that interfere with understanding.

Appendix D

Recruitment Script and Information Sheet

Dear Student,

I am currently seeking participants for a study exploring college students' writing perceptions, motivations, and achievement. I hope that you can participate. I know that personal time is incredibly valuable and we will do our best to see that any time you give is well used and benefits instructors and students. If you are interested in participating in this study, please complete the following survey and writing prompt. Once you have completed the survey and prompt, please place the items in the box at the front of the room. If you are not interested in participating, please place the blank survey and prompt in the box at the front of the room at your convenience. If you choose not to participate, you may use this time as you wish. There is no penalty for choosing not to participate. Thank you for your time and help.

Some questions you may be asking...

What is the project?	Research about college students' writing achievement goals, self-regulation, and achievement.
Who can participate?	Undergraduate students at Virginia Commonwealth University, ages 18 and over.
What do I do if I want to participate?	If you agree to be part of this study, the researcher will ask you to complete a brief questionnaire about your writing perceptions, motivations, and achievement, as well as a short writing prompt. You will spend approximately

	20-30 minutes completing these items. Participation will take place during
	your regular scheduled class time.
Will I be compensated	Research credit or extra credit will NOT be provided for participation in this
for my time?	study.
Will my information	Yes, what you share will remain confidential. The information obtained in
remain confidential?	this study may be published in scientific journals or published at scientific
	meetings, but the data will be reported as aggregated (group) data.

Do I have to participate? No, you can opt out of the study at any time for any reason.

QUESTIONS: You may have questions about your participation in this study. If you have any questions, complaints, or concerns about this research, contact Joseph Tadlock at tadlockja@vcu.edu. If you have any questions about your rights as a participant in this study, you may contact the VCU Office of Research at 804.827.2157, referencing IRB #HM15260. You may also contact the VCU Office of Research for general questions, concerns, or complaints about this research. Please call this number if you cannot reach the research team or wish to talk to someone else. Additional information about participation in research studies can be found at http://www.research.vcu.edu/irb/volunteers.htm.

Appendix E

Joseph Tadlock <tadlockja@vcu.edu> Aug 10 to mohammad_farsa.

Mr. Farsani,

I am a PhD candidate at Virginia Commonwealth University and I would like to reference your 2014 paper titled, "Self-Regulated Learning, Goal-Oriented Learning, and Academic Writing Performance of Undergraduate Iranian EFL Learners," in my dissertation. I have a question for clarification. Table 8 on pg. 12 cites a correlation between Self-Regulated Learning and Performance-Avoidance Orientation; however, the paragraph below Table 8 references Performance-Approach Orientation. Did you find a correlation between Self-Regulated Learning or just one? Thank you for any clarification you can provide.

Sincerely, Joseph Tadlock

mohammad Amini <mohammad_farsani@yahoo.com> to Joseph

Dear Joseph,

Thanks for your email and getting in touch. I found the relationship between the two. Please consider the following as you can see in the article: Moreover, mastery---avoidance indicated a high significant relationship with three subscales of self-regulation. This is the same for performance approach. I hope it helps.

Best Wishes, Mohammad Amini Farsani PhD student in Applied Lingustics Kharazmi University, Tehran

Joseph Tadlock <tadlockja@vcu.edu> to mohammad

Mohammad,

It does help! Your feedback is greatly appreciated.

Best, Joseph

Appendix F

Vita

Joseph Allen Tadlock was born on March 26, 1982 in Charlotte, North Carolina, and is an American citizen. He graduated from Clover High School, York County, South Carolina in 2000. He received his Bachelor of Arts in Experimental Psychology from the University of South Carolina, Columbia, South Carolina in 2007. He received his Master of Education in Special Education from Virginia Commonwealth University, Richmond, Virginia in 2009.