THE INFLUENCE OF SELF-REGULATION, MOTIVATION, PROFICIENCY, AND GENDER ON L2 FIRST-YEAR WRITING ACHIEVEMENT

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ABSTRACT

In educational psychology and first language writing, many studies have established a link between self-regulation, key motivational factors associated with self-regulation, and academic achievement, but only a handful of research has examined this relationship in the context of L2 first-year writing. Using a sample of 170 non-native English speakers enrolled in different sections of two levels of first-year writing courses at an American university in Japan, the present study tested a hypothesized model of L2 first-year writing achievement using Structural Equation modeling. The model examined the impact of SRL strategy use, Academic Writing Self-Efficacy, Goal Orientation, Writing Attitude—key motivational factors associated with self-regulated learning—and general English proficiency, as measured by TOEFL iBT, on the writing achievement of students' final essays, measured by their essay grades. The impact of gender on the hypothesized model of writing achievement was also investigated by conducting two separate Structural Equation modeling analyses on the hypothesized model for males and females. The study also examined the impact of SRL Strategy Use and Academic Writing Self-Efficacy on four levels of Writing Achievement, as well as the impact of four levels of Writing Experience on SRL Strategy Use and Academic Writing Self-Efficacy.

The results of the study indicated that the hypothesized model had adequate fit to the data, and was, therefore, interpreted as being representative of the sample population examined in the current study. Statistically significant relationships in the model were found among the following variables: (a) English Proficiency and Essay Grade, (b) Academic Writing Self-Efficacy and Essay Grade, (c) Writing Attitude and Academic

Writing Self-Efficacy, (d) Mastery Goal Orientation and SRL Strategy Use. These results corroborate findings in first-language and second-language writing research, which have reported statistically significant positive relationships among these variables, and lend support to the notion emphasized in socio-cognitive models of SRL that self-efficacy is a strong predictor of writing achievement. However, statistically significant relationships were not found among: (a) SRL Strategy Use and Essay Grade, (b) Writing Attitude and SRL Strategy Use, (c) Academic Writing Self-Efficacy and SRL Strategy Use, (d) Academic Writing Self-Efficacy and Goal Orientation. Possible explanations for the lack of statistically significant findings among the relationships between SRL and the other variables were attributed to the small sample size, and methods used to assess the use of SRL strategies. While the importance that the participants' attribute to earning credits for the courses, as opposed to mastering writing skills, was considered a reason for the lack of a statistically significant relationship between Academic Writing Self-Efficacy and Goal Orientation.

The examination of the influence of Gender on the hypothesized model of writing achievement indicated that the model for females had more adequate fit to the data than the model for males, suggesting that the model was more representative of the female participants. Differences in the models were found in the relationships between English Proficiency and SRL Strategy Use and the relationship between Academic Writing Self-Efficacy and Essay Grade. The results were in line with previous findings that have reported that female students use more SRL strategies and hold higher self-efficacy beliefs than male students.

With regards to the influence of SRL Strategy Use and Academic Writing Self Efficacy on levels of Writing Achievement that ranged from Poor to Excellent, statistically significant differences were only found between the mean scores of the Poor and Excellent groups with regards to Writing Self-Efficacy. SRL Strategy Use did not exert a statistically significant difference on the mean scores of the groups. The results were in line with previous findings that reported the predictive influence of self-efficacy on writing achievement, but the results did not corroborate previous findings in relation to the predictive strength of SRL Strategy Use. The methodology used to assess the use of SRL strategies in the present study was considered a possible explanation for the lack of statistically significant results.

In relation to the influence of Writing Experience on SRL Strategy Use and Academic Writing Self-Efficacy, the results also yielded non-significant differences between four groups with different levels of Writing Experience and SRL Strategy Use. This result was attributed to the broad nature of the method used to assess Writing Experience in the current study. Statistically significant differences were found between Academic Writing Self-Efficacy and Writing Experience, and the results supported previous findings in first language writing research, which have shown that learners with less experience often report higher levels of efficacy due to perhaps to overestimation of their skills.

Overall, in the current study SRL did not predict the participants' essay grades, and did not mediate the influence of other variables on essay grade. However, Academic Writing Self-Efficacy emerged as a powerful predictor of Essay Grades, and writing achievement. Therefore, while the current study supported social cognitive views about the predictive nature of self-efficacy on writing achievement, it did not corroborate theoretical assumptions about the relationship between the use of SRL strategies and writing achievement.

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DEDICATION

To the memory of my husband Kimiaki Kawara.

You encouraged me to pursue a doctoral degree and you believed in me, even when I doubted myself. During the challenges of graduate school life and dissertation proposal writing you were a constant source of support and encouragement. You thrived and rejoiced each time I moved a step closer to completing my dissertation. Over the past year, in my memories of your unconditional love and support, I found the emotional strength to persevere through this arduous endeavor. I wish you were here to see the final product and share with me the joy I feel at having finally accomplished this challenging goal.

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CHAPTER 1

INTRODUCTION

The Background of the Issue

Over the past decades, educational psychologists and second-language acquisition researchers have tried to gain a better understanding of the factors that contribute to variation of learners' success in specific learning domains and academic contexts. The outcome of such keen interest in learner differences has led to abundant research and to the development of different perspectives to understand how learners become masters of their own learning (Zimmerman, 2000a, 2002; Zimmerman & Risemberg, 1997). One of these most recent perspectives is self-regulated learning (hereafter SRL).

SRL emerged as a result of a shift in the perception of the role of learning strategies in academic settings (Dörnyei, 2005). Dörnyei explained that during the 1980's, after much research had been conducted on the cognitive strategies used by successful proactive learners, educational psychologists realized that strategy use was a much more complex issue, and that it was not the nature of the strategies per se that contributed to successful learning but "the fact that they choose to put creative effort into improving their own learning and that they have the capacity to do so" (p. 190). As a result of this change in perspective, educational psychologists turned to self-regulation research to understand the complex nature of strategic learning. Dörnyei also noted that this shift in perspective allowed educational psychologists to apply findings from research on clinical, health, and organizational psychology to learning in academic contexts. Hence, it allowed researchers to approach the study of individual differences from a broader theoretical foundation (Dörnyei, 2005).

At the same time, there seems to be a common agreement in the SRL literature that the shift in perspective described by Dörnyei was also triggered by the publication of Albert Bandura's social cognitive theory in 1986 (Dinsmore, Alexander, & Loughlin, 2008; Schunk & Zimmerman, 1998). Bandura's social cognitive theory proposed that human functioning is not determined by either the individual or the environment, but by a series of reciprocal interactions between an individual's behavior, environment, and personal factors—such as cognition, self-efficacy, and motivation (Bandura, 2000; Zimmerman & Schunk, 2012). Bandura also emphasized that individuals' ability to control, or regulate their functioning at the personal, cognitive, and behavioral level lies at the heart of this reciprocal interaction (Bandura, 2000), and postulated that individuals self-regulate through three processes called self-observation, self-judgment, and self-monitoring (See Bandura [2001] for a detailed explanation of these three processes). After the publication of Bandura's theory, many educational psychologists began to apply the principles of this theory to different academic settings (e.g., Zimmerman & Schunk, 2012), to specific domains of learning such as writing (e.g., Zimmerman & Risemberg, 1997), to the development of self-regulatory teaching methodologies (e.g., Graham & Harris, 2003), and to the study of academic achievement in college (e.g., Pintrich, 2004). The emphasis on self-regulation in academic settings seems to have greatly contributed to the development of SLR

(Dinsmore, Alexander, & Loughlin, 2008), and to the recognition of self-regulation as one of the most significant predictors of academic success across various contexts and domains of learning (Dörnyei, 2005; Pintrich, 2000; Zimmerman, 2000a).

In the domain of writing, which is the focus of this study, research has revealed that self-regulation is a distinctive quality of successful writers (Zimmerman & Kitsantas, 2007; Zimmerman & Risemberg, 1997), an essential component for the development of writing competence (Graham & Harris, 1997, 2003), a significant predictor of individual differences in writing attainment in elementary and secondary school settings (Graham & Harris, 2003), as well as a strong predictor of academic achievement at the university level (Garcia & Pintrich, 1996; Wolters & Pintrich, 1998). Research in SRL has also shown a strong link or interaction between motivational factors and the use of self-regulation strategies. Motivational factors such as goal-orientation, self-efficacy, task interest or attitudes toward the subject matter, and demographic factors, such as gender orientation, have been found to play a vital role in the initiation and maintenance of SRL strategy use (Zimmerman & Schunk, 2012). In particular, studies have shown that these key motivational factors can determine the amount, type, and frequency of SRL strategy use (Pintrich & De Groot, 1990; Zimmerman & Martinez-Pons, 1986; Pajares, 2003) as well as students' willingness to initiate and maintain self-regulatory processes (Zimmerman & Schunk, 2012).

Rooted in powerful theories of human behavior, and emerging from at least two decades of research studies conducted by educational psychologists, SRL plays a significant positive role in academic performance and achievement. As Zeidner, Boekaerts, and Pintrich (2000) pointed out, after many years of research, self-regulated learning has become "a natural and organic part of the landscape of psychology and education" (p. 749), as it has the potential to offer more meaningful and insightful research findings (Dörnyei, 2005). Therefore, it is important to contribute to making SRL a "natural part of the landscape" of second-language writing research, where it has been largely neglected.

Statement of the Problem

In this section, I discuss five problems identified in the L2 writing research literature in relation to the role of self-regulation on writing achievement and its interaction with other key motivational factors.

The first problem addressed in the current study relates to the lack of second-language writing research that examines the influence of general English proficiency, writing attitude, writing self-efficacy, goal orientation, and SRL strategy use from the perspective of SRL. Research in SRL learning and first-language research suggests that self-efficacy, goal-orientation, and attitudes influence writing achievement as they act as *precursors* or *mediators* to the learners' use of SRL strategies (Pintrich, 2000; Zimmerman, 2000a). At the same time, research in second-language writing reveals that general English proficiency can play a significant role in writing achievement (Sasaki & Hirose, 1996). However, as these variables have not been examined together and from the perspective of SRL, it is not clear whether the influence of general English proficiency is stronger or weaker than that of SRL strategy use, or self-efficacy beliefs, and whether assumptions and findings in SRL can be applied to second-language writing. Therefore, it is important to examine all these variables in one single study.

Related to the first problem is the lack of understanding of the relationship between writing self-efficacy, goal orientation, writing attitudes, and SRL strategy use. SRL research and first language writing research have consistently reported relationships between these factors, but these relationships have not been clearly confirmed in second-language writing, as research remains scarce. More research is necessary to confirm these relationships and gain a better understanding of the of how these variables influence each other, and of the independent or mediating contribution they can have on English as a second- or foreign language (L2) writing achievement.

The second problem relates to the methodology used in most of the research studies conducted in the domain of L2 writing. The majority of the studies have relied on correlation or regression analysis to explore relationships among some of these factors. While these types of analyses are informative, they do not allow for the interpretation of causal relationships between factors. Therefore, more advanced statistical analyses are necessary to enhance our understanding of how English proficiency, SRL, and motivational factors associated with SRL relate to and influence each other.

The third problem addressed in this study concerns the lack of a clear understanding of the influence of SRL strategy use and self-efficacy beliefs on writing achievement. As mentioned in the previous section, although there is evidence from first-language writing research indicating that the use of SRL strategies can be a significant predictor of writing achievement, research in second-language writing exploring this relationship is scarce and the results remain inconclusive. In addition, the literature in educational psychology has consistently revealed that self-efficacy not only predicts academic achievement, but also is a distinctive quality of high-achievers (Pajares, 2003) in different domains of learning. However, in second-language writing research, the number of studies exploring the influence of self-efficacy on writing achievement remains scarce and inconclusive.

The fourth problem that I aim to address in the current study is the lack of understanding of the influence of writing experience on SRL strategy use and self-efficacy beliefs. The role of writing experience in SRL strategy use and self-efficacy beliefs has received little attention in contemporary writing research. Most of our understanding of the differences between novice and experienced writers comes from studies that have adopted a cognitive approach and have focused on how complex writing can be, especially for novice writers as opposed to experienced writers (Hidi & Boscolo, 2006). Taken together, the studies are informative as they highlight individual differences among successful and unsuccessful writers and experienced and novice writers. However, they fail to capture the entire process emphasized in SRL approaches: from goal setting to task completion (Dörnyei, 2005); using a wide range of self-regulatory strategies such as goal setting, self-monitoring, and self-evaluation, or self-reflection (Castelló, Iñesta, & Monereo, 2009; Graham & Harris, 2003; Zimmerman & Risemberg, 1997). In addition, in both first- and second-language writing, the role that writing experience plays in the development of self-efficacy is not yet clearly understood (Pajares, 2003). For this reason, it is important to examine differences among experienced and novice writers from the perspective of self-regulated learning.

The fifth problem that I attempt to address in this research is the lack of understanding of the role of gender in general English proficiency, motivational factors, and SRL strategy use. Findings from existing research L2 writing are still inconclusive or indicate only marginal differences with regards to the role that gender plays in relation to these factors. In addition, given the scarcity of second-language writing research on SRL strategy use, motivational factors associated with self-regulation, and general English proficiency, it may be reasonable to assume that the role of gender on the combination of these factors requires further investigation.

As mentioned above, although SRL and key motivational factors such as goal-orientation, self-efficacy and attitude have been widely examined in first-language writing acquisition research, to date, the investigation of the influence of self-regulation in second-language writing has received only modest attention. In fact, in her review of individual differences in L2 writing, Kormos (2012) asserted "unfortunately, to date, no studies have been conducted to investigate the role of motivational and self-regulatory factors in L2 writing" (p. 399). Thus, to gain a better understanding of how self-regulation can affect the success of non-native English speakers in first-year writing courses, and to address major gaps on the literature, I embark on the task of examining the influence of SRL strategy use, motivational and demographic factors on L2 writing achievement in freshman composition courses.

Purposes and Significance of the Study

The present study has four main purposes that can contribute pedagogically, theoretically, and methodologically to a better understanding of the role of self-regulation in L2 writing contexts.

The first goal is to use structural equation modeling to test a hypothesized model of the relationship between general English proficiency, writing attitude, writing self-efficacy, goal orientation, and SRL strategy use, in first-year university writing courses that use a process-approach to writing. By doing so, the current study addresses problems related to the lack of understanding of the predictive strength of general English proficiency when combined with powerful SRL and motivational factors associated with SRL; to the lack of understanding between motivational factors associated with motivational factors and SRL strategy use; and to the limitations in the methodology of existing research. The investigation of SRL strategy use, motivational factors, and proficiency factors in the same study can aid in the understanding of the unique contribution that each of these factors brings to L2 writing achievement. It can also highlight the independent contribution of general English proficiency when studied in conjunction with SRL and motivational factors. At the same time, it can help confirm existing assumptions about the significant role that SRL has been found to play in academic performance and achievement across domains and, specifically in the area of writing.

The second goal is examine how writing achievement is influenced by individual differences in SRL strategy and self-efficacy beliefs. As mentioned in the previous section, our understanding of the role of these factors in L2 writing is still limited and L2 writing research on the role of SRL strategy use and self-efficacy beliefs in writing achievement has yielded inconclusive results. From a pedagogical point of view, and to ensure that learners are successful in the foreign writing classroom, it is important that writing teachers possess a solid knowledge and understanding of how SLR strategies and self-efficacy beliefs determine the learner's level of success in foreign language writing. This is especially important in contexts where a process-approach to curriculum guides instruction because, "explicit and sustained instruction in writing strategies is not common in classrooms that use process approach, and such instruction is rarely included in descriptions of the components of a process writing program" (Graham & Perin, 2007, p. 450). It is also important to understand the role of self-efficacy in writing achievement so that writing instructors can develop teaching approaches that nurture the self-efficacy beliefs that struggling writers need to be successful. Moreover, from a theoretical point of view, this investigation can help confirm findings in L1 writing research and expand our knowledge of the role of these factors in L2 writing achievement.

The third goal is to examine the influence of writing experience on SRL strategy use and self-efficacy beliefs. In first-language writing research a clear understanding of the influence of writing experience on self-efficacy beliefs has not yet been established (Pajares, 2003), and most of what we know about the SRL strategy use among experienced writers in L2 writing is derived from research adopting cognitive approaches to writing. For writing teachers, knowledge of whether writing experience affects SRL strategy use and self-efficacy beliefs can aid in the development of teaching practices geared toward supporting the needs of less experienced and weak writers who may have lower levels of self-efficacy beliefs in their ability to perform writing tasks, and, consequently need learning environments that nurture those beliefs. From a theoretical point of view, the current study can help clarify the relationship between these factors and contribute to address gaps in the L2 writing literature by examining the influence of writing experience from the perspective of SRL.

The fourth and final goal is to examine gender differences gender in a hypothesized model of L2 writing achievement. As discussed in the previous section, although gender has received a fair amount of attention in first- and second-language writing, the results are still inconclusive, and it is not clear how the use of self-regulatory strategies, writing self-efficacy, goal-orientation, attitudes towards writing, and general English proficiency differ depending on gender. Therefore, the findings of the current study can enhance our understanding of the mediating nature of gender in foreign-language writing achievement.

Theoretical Perspective

The current study draws on social cognitive views of self-regulated learning (Schunk, 2001, Zimmerman, 1989) and on the assumptions of two models of self-regulated learning: Zimmerman and Kitsantas (2007) Socio Cognitive Model of Self-Regulation in Writing and Pintrich's (2004) Framework of SRL for college classrooms.

Social cognitive theories of self-regulated learning view learners as active monitors of their own learning and performance. From the perspective of self-regulated learning, learners are seen as being constantly engaged in the regulation of cognitive, metacognitive, motivational, and affective processes that are influenced by the learners' personal, behavioral, and environmental factors. From this view, successful learners are those who carefully regulate these processes, while unsuccessful learners are those who fail to effectively regulate these processes or who lack the appropriate knowledge to be able to exercise more self-regulation of their learning. This view is based on Bandura's (1986) socio-cognitive theory of learning (Schunk, 2001; Zimmerman, 1989).

In relation to SRL learning as it applies to the college classroom and foreign language writing, I also draw upon the theoretical foundations of the social cognitive views of SRL, especially as proposed in two models of self-regulated learning: (a) Zimmerman and Kitsantas (2007) Social Cognitive Model of SRL in Writing, and (b) Pintrich's (2004) Framework of SRL for the college classroom. These two models are based on socio-cognitive views of learning and are supported by findings in educational psychology and first-language writing. Together, they provide insights into the processes, stages, and areas of self-regulation in which learners are assumed to engage when performing specific writing tasks at the college level. In the literature review section, I compare the assumptions made by each of these models and provide a detailed explanation of the areas of self-regulation emphasized in these theoretical models.

The Audience for the Study

This study can be of interest and beneficial to researchers, curriculum designers, second language learners, and writing instructors. The instruments developed for this study can be used in similar university contexts by researchers or teachers willing to gain a better understanding of the role of SRL strategy use and key motivational factors, or can serve as the basis for the development of better instruments. The results of the study might be beneficial to L1 and L2 researchers, as they might confirm existing hypotheses about the role of self-regulation in university level academic contexts, as well as in writing. In addition, as I focus on non-native speakers use of self-regulatory strategies, the findings might be valuable to researchers interested in the relationship between culture and SRL, especially because as Pintrich (2000a) asserted "much of the research on self-regulated learning has a distinct Western, and even, North American, flavor to it" (p. 493).

The study can also be beneficial to teachers and curriculum designers who develop academic writing courses. The study can highlight the contribution of self-regulation and other key motivational factors associated with self-regulated learning to the teaching of academic writing. With more insights into the influence of the variables examined in this study, teachers and curriculum developers can better understand the processes affecting writing achievement and use the information not only to assess current pedagogical practices, but also to implement new ways of teaching. Such new approaches can allow students access to a variety of self-regulatory strategies, opportunities to increase their writing self-efficacy beliefs, and chances to develop more positive attitudes toward writing. In other words, it can allow instructors and curriculum developers to ensure the success of their students in academic writing courses.

More importantly, the study is beneficial to all the students who participated in it. By responding to questionnaires about strategy use, the ESL speakers that participated in the study had the opportunity to become more aware of their own writing processes and of the existence of many self-regulatory strategies that can be beneficial to the improvement of their writing skills and their overall achievement.

Last, but not least, the study is beneficial to me, and to other writing instructors in my teaching context, who would like to develop more learner-oriented approaches to the teaching of writing, and gain a better understanding of the factors that influence students' success in our writing classrooms.

Delimitations

There are several delimitations to the proposed study. First, the study is limited to the context of second-language writers in university contexts. All instruments, while based on theory, have been developed to reflect the process-approach to writing used in the First-Year Writing Program at the university where the study takes place. Second, although the study focuses on key components of self-regulated learning, and key demographic factors identified in the literature, it does not address all potential factors influencing achievement that have been identified in L1 and L2 research. For example, it does not include anxiety, personality traits, and locus of control, which also seem to predict writing performance (Jones, 2008). Third, although the methodology to collect some of the data is based on stimulated recall procedures, all the data were collected using self-report surveys and questionnaires. Although reliable and valid for the context in which they are used, self-report questionnaires cannot capture the actual events or ongoing processes of self-regulation (Cleary, Callan, & Zimmerman, 2012; Pintrich 2004), but they can only highlight propensities to use self-regulatory strategies (Pintrich, 2004). There also exists the possibility that students' responses might be affected by social desirability factors. Fifth, this study falls into the category of correlational studies. As such, it only shows relationships across factors, and the unique or combined contribution of these factors to writing attainment, making it impossible to derive causal effects conclusions about the role of self-regulated learning in writing. Finally, the sample size is a limitation as well. Data for only 170 participants could be used in the statistical analyses. Although the sample is reasonably large, it is not the ideal sample size (< 200) to conduct structural equation modeling. All of these limitations greatly affect the generalizability of the study to other writing contexts and, to some extent, its reliability.

Organization of the Study

Including Chapter 1, the current study includes seven chapters. Chapter 2, the Literature Review, is divided into eleven main sections: Definitions of Concepts, Socio Cognitive Models of SRL Learning and SRL Writing, SRL Strategy Use Research, Writing Self-Efficacy Research, Goal Orientation Research, Writing Attitudes Research, General English Proficiency Research, and Gender Research. At the end of the chapter, I present the gaps in the literature, the purposes of the study, the research questions, and a summary of the chapter. In Chapter 3, Methods, I describe the participants and context of the study, variables and instrumentation, research design, and procedures. In this section, I also include an overview of Rasch measurement model, an overview of structural equation modeling, and a description of the data analyses procedures for the three research questions that motivated the study. Chapter 4 describes the preliminary analyses conducted on Likert-scale data and on dichotomous data. Chapter 5, Results, provides answers to the research questions, and in Chapter 6, Discussion, the results are compared to previous empirical findings and interpreted based on the theoretical assumptions. The pedagogical implications and theoretical implications of the study are discussed at the end of the chapter. In Chapter 7, Conclusion, the findings are summarized, the limitations of the study are described, and suggestions for future research are offered.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter is divided into eleven main sections. In the first section, Definitions of Concepts, I define self-regulation, SRL learning, SRL strategies, and the three motivational factors associated with SRL investigated in the current study. In the second section, Socio Cognitive Models of SRL Learning and SRL Writing, I describe the assumptions of the two models of self-regulation that form the basis for this study. In the subsequent sections, I discuss research relevant to each of the variables that are the focus of the study. First, I review SRL strategy use research; second, writing self-efficacy research; third, goal-orientation research; fourth, writing attitudes research, fifth, general English proficiency research, and sixth, gender research. After the review, I highlight gaps in the research, present the purposes of the study and the research questions I seek to answer in this study, and provide a summary of the chapter.

Definition of Concepts

In this section, I provide definitions of self-regulation, SRL learning, and SRL strategy use, as well as of key motivational factors associated with SRL. Supporters of the principles of SRL stress the importance of motivational factors in SRL. Zimmerman and Schunk (2012) explain that motivational constructs and students' SRL are "reciprocally interactive" and that they "play a vital role in initiating, guiding, and sustaining students' efforts to self-regulate their learning" (p. 3). Three of the key motivational factors discussed in the literature and which pertain to this study include self-efficacy, interest/attitude, and goal orientation. Therefore, in this section, I also include definitions of these factors.

Self-Regulation

Defined in broad terms, *Self-Regulation* is a process that involves efforts made by individuals to alter their own inner states and responses (Baumeister & Vohs, 2007, p. 2). In social cognitive theory, self-regulation is viewed as being composed of several processes, which include goal setting, self-observation, self-judgment, and self-reaction. These processes are of equal importance, interact with one another, and allow individuals to exercise control over their thoughts, feelings, motivations, and actions (Bandura, 1991, p. 249). This view of self-regulation has formed the basis for current definitions of self-regulation proposed by socio cognitive theorists. Zimmerman (2000a), for example, defines self-regulation as "the self-generated thoughts, feelings and actions that are planned and cyclically adapted to the attainment of personal goals" (p. 14), while Pintrich, (2000b) defined it as an active, constructive process whereby learners set goals for their learning, attempt to monitor, regulate and control their cognition, motivation, behavior, guided and constructed by their goals and contextual features in the environment" (p. 453). When applied to writing, Zimmerman and Kitsantas (2007) defined self-regulation in writing as "the self-initiated thoughts, feelings, and actions that writers use to attain various literary goals, such as improving their writing skills as well as enhancing the quality of the text they create" that are affected by motivational beliefs and the outcomes of self-regulatory efforts in a cyclical manner (p. 52). This is the definition of self-regulation in writing that I have adopted in the current study.

Self-Regulated Learning

Self-Regulated Learning is the term used to refer to self-regulation when applied to academic, or learning contexts (Cleary, Callan, & Zimmerman, 2012). According to Dörnyei (2005), SRL has allowed educational psychologists to establish a relationship between learning and other cognitive and motivational aspects of clinical, health and educational psychology, which are not directly related to learning. In addition, self-regulation has attracted the attention of educational psychologists because of its practical and theoretical value. Its practical value allows for the application of its principles to specific learning contexts, while its theoretical value empowers researchers to better understand the many different aspects that affect the learners psychological functioning (Baumeister & Vohs, 2007, p. 3). The most recent definition of SRL provided by Cleary, Callan, and Zimmerman (2012) conceptualized self-regulation as "a multidimensional process whereby individuals attempt to exert control over their cognition, motivation, behaviors, and environment in order to optimize learning and performance outcomes" (p. 1). This definition embodies the assumptions of many of the theoretical models of SRL proposed in the field of educational psychology and of the models of self-regulation in writing and SRL in the college classroom that serve as the basis for the current study.

Self-Regulated Learning Strategies

Based on the definition of self-regulation and SRL, the term *Self-Regulatory Strategies* (hereafter SRL strategies) is used to refer to all the strategies that learners use to monitor their cognition, motivation, behavior, thoughts, and context before, during, and after completing a specific task (Pintrich, 2004; Zimmerman, 2000a, 2002). These strategies include, but are not limited to, planning, organizing and transforming, self-evaluating, revising, self-assessing, and self-verbalizing (Zimmerman & Risemberg, 1997), as well as environmental structuring, self-reflection, goal setting, and help seeking (Pintrich, 2004; Zimmerman, 2000a, 2002), and interest enhancement, performance self-talk, and self-consequating—a term used to describe strategies to reward or punish behavior (Wolters, 1999). They also include strategies for seeking information, keeping records and monitoring events or results, and seeking social assistance (Zimmerman, 1989). Some of these SRL strategies overlap with the metacognitive learning strategies identified by O'Malley and Chamot (1990), which include planning, directed attention, selective attention, self-management, self-monitoring, problem-identification, and self-evaluation. However, the difference between these two types of strategies is that, unlike metacognitive strategies, SRL strategies are based on the principles of self-regulation, which emphasize the control of performance, motivation, and affect, not just the control of cognition (Dörnyei, 2005). When applied to writing and to this study, SRL strategy use is defined as the extent to which learners use different kinds of SRL strategies to monitor and self-regulate the different aspects of their writing performance while engaged in writing tasks.

Self-Efficacy

Self-Efficacy, in academic settings and SRL contexts, is defined as the learner's personal beliefs about their capabilities to learn or perform skills at designated levels (Schunk & Ertmer, 2000). Bandura (2000) characterized self-efficacy as the "foundation of human" agency (p. 10) asserting that it influences people's thoughts, affect, motivation, and action. Rooted in Bandura's social cognitive theory, in SRL self-efficacy is perceived as influencing "the choices learners make, the effort they expend, the persistence and perseverance they exert when obstacles arise, and the thought patterns and emotional reactions they experience" (Pajares, 2003, p. 140), and it is therefore a key component of SRL. To emphasize the vital role that self-efficacy plays in SRL, Zimmerman and Schunk (2012) asserted that self-efficacy could be viewed as "a precursor to SRL or a mediator and as an exclusive or concomitant outcome of SRL" (p. 11). In the present study, the term *Academic Writing Self-Efficacy* is therefore used to refer to students' beliefs about their capabilities to learn or perform academic writing skills that form the basis of the curriculum in this particular teaching context.

Goal Orientation

Goal Orientation, as defined by Pintrich (2000a), refers to "an individual's general orientation for approaching the task, doing the task, and evaluating their performance of the task" (p. 473). In other words, it is the reason why a learner is motivated to do and complete a specific task. *Mastery Goals* are the learners' desire to develop knowledge, skill and competence, while *approach* goals reflect learners' concern to “demonstrate competence by trying to outperform peers on academic tasks” (Pintrich, 2000a, p. 475). In the literature, a distinction is also made between *performance approach* goals and *performance avoidance* goals. The former refers to the learners’ desire to do well in order “to please teachers or parents, impress classmates or feel important”, while the latter refers to learner’s desire to “avoid revealing lack of ability, feeling embarrassed, or looking stupid (Pajares, Britner, & Valiante, 2000, p. 407). According to Pintrich (2000b), early studies in SRL have shown that *Mastery* goals are associated with increases in self-efficacy, perceptions of task value and interest, effort and persistence, the use of self-regulatory strategies, and better performance; while *performance* goals are related to less positive effects in performance, and *performance avoidance* goals lead to maladaptive behaviors that can include a lack of persistence, less, or shallow, use of self-regulatory strategies, and connecting failure to lack of ability. In the context of this study, goal orientation is then perceived as being the learners’ general orientation for approaching, doing, and evaluating their performance in writing.

Attitudes

Researchers have often struggled to define *Attitudes* due to the interdependent nature of this concept and other affective constructs, such as interest (Graham, Berninger, & Fan, 2007). According to Eccles and Wigfield (2002), individual interest can be conceptualized as having value-related valences and feeling-related valences, forming a continuum that ranges from positive to negative extremes. “Value-related valences refer to the personal significance or importance that learners attribute to an object or activity, while feeling-related valences are the feelings that learners associate with an object or activity" (p. 114). Attitudes, on the other hand, have been defined as "a persons' feelings towards other people, conditions, or situations (Crow and Crow, 1956). Considering both definitions, and the feeling-related valence component of individual interest, it is possible to blend the two concepts and consider individual interest as attitudes towards an object or activity. SRL learning researchers, however, do not seem to view personal interest in the same way that Eccles and Wigfield (2002) conceptualize it. Zimmerman (2002), for example, defines interest as a belief that results in valuing an activity or skill for its inherit properties rather than for its ultimate end (p. 55). On the other hand, Pintrich and Zusho (2002) differentiate between interest and value beliefs. They conceptualize interest as the learners' willingness to engage in certain activities and values as how important or useful a task or academic domain is to them (p. 271). Given the difficulty of defining attitudes and the different ways in which interest is conceptualized in SRL research, in the current study, *attitudes* are operationally defined as positive or negative feelings and perceptions of the value of an academic domain. In relation to writing, the focus of the study, *Writing Attitudes* are then conceptualized as being the positive and negative feelings that the learners have towards writing and their perceptions of value of writing as area of academic study.

In this section, I have provided a definition of self-regulation, SRL learning and SRL strategies, which are relevant concepts in the current study. I have also defined the key motivational factors associated with SRL, which are the focus of this study.

Researchers and theorists who support the social cognitive view of self-regulation emphasize the importance of self-efficacy, attitudes, and goal orientation, as they are believed to interact with one another to influence learning and performance. Considering this view, it is clear that the impact of SRL can be better understood when examined in conjunction with the key motivational factors affecting the students' needs, desire, and *will* to self-regulate. It also provides a theoretical justification for the inclusion of goal orientation, self-efficacy, and attitude in a model examining the role of SRL in writing achievement. The independent and combined contribution of each of these factors to writing achievement is discussed in more detail when I review the empirical research in relation to each of these variables in a later section of this chapter.

Socio-Cognitive Models of Self-Regulated Learning

In this section, I discuss two social cognitive models of SRL that form the theoretical basis for the current study: Zimmerman and Kitsantas (2007) Socio Cognitive Model of Self-Regulation in Writing and Pintrich's (2004) Framework of Self-Regulated Learning in the College Classroom.

Zimmerman and Kitsantas (2007) model is a reconceptualization of the model of SRL in writing proposed by Zimmerman and Risemberg (1997). The model was derived from research on self-regulation in various areas of functioning, and it is based on the strategies used by famous writers (e.g., Anthony Trollop, John Irving). Pintrich (2004) framework is derived from SRL learning research on academic achievement at the college level. Derived from different areas of research, the models complement each other and share many of the principles and assumptions posited in Bandura's social cognitive theory, and in social cognitive views of SRL learning (Pintrich 2004; Puustinen & Pulkkinen, 2001; Wolters, 2010).

Theoretical Assumptions of the Self-Regulated Learning Models

Pintrich (2004) and Wolters (2010) explain several assumptions that these two models, and other social cognitive models of SRL, have in common. One assumption is that SRL depends on learners having the *skill* and *will* to learn. That is to say, learners are assumed to have the abilities, attitudes, and beliefs that are needed to learn and be taught. A second shared assumption is that learners are active and proactive, participants of their own learning experiences rather than passive recipients of information from their surroundings. In other words, learners are seen as having the potential to construct meaning from the information available to them, and to regulate some, or all, aspects of their academic functioning, including cognition, motivation, behavior and environment, at some times and in some contexts. A third assumption is that goals are an important tool for learners to assess their performance at different points, and that learners can adopt different goals depending on the context. A fourth assumption is that SRL processes act as mediators between "personal and contextual characteristics and actual achievement and performance" (Pintrich, 2004, p. 388). A fifth assumption is that learning occurs in a continuum of interdependent stages that are cyclical in nature, which might correspond to the processes that learners use before, during, and after completing a particular task. A final assumption is that regulation can occur at any stage of performance in a simultaneous and dynamic manner, rather than in a strict hierarchical or time sequence (Pintrich, 2004; Wolters, 2010). That is to say, learners can regulate their performance before, during, and after completing a writing task.

Stages in the Self-Regulated Learning Models

There are slight differences in the conceptualization of the models. Zimmerman & Kitsantas (2007) identified three phases in their model: The Forethought Phase, the Performance Phase, and the Self-Reflection Phase; on the other hand, Pintrich (2004) identified four phases: The Forethought Phase, the Monitoring Phase, the Control Phase, and the Reaction and Reflection Phase. However, Pintrich (2004) recognized that in actual task performance the monitoring and control phases are often indistinguishable; therefore, to emphasize the similarities, I discuss the phases in terms of three stages: Initial, Intermediary and Final stages, drawing mainly from Pintrich's (2004) discussion of these phases.

The initial stage, Forethought phase, occurs before the learner engages in a particular task and represents the learners' efforts to activate prior content and metacognitive knowledge and to set goals. It also includes the learners' efforts to motivate themselves to engage in the task through the activation of motivational beliefs such as self-efficacy, task outcome expectations, perceptions of task interest and value, and goal orientation. The intermediary stage represents learners' processes while engaged in a particular task. During this intermediary stage, learners monitor different aspects of their performance, select and manage strategies to complete their tasks, exercise self-control for strategy use to maximize concentration and performance, and use self-observation to decide whether modifications to their approach are necessary to complete the task (Zimmerman, 2002). The final stage occurs usually after completing a task. In this stage, learners not only make cognitive judgments and causal attributions about their performance and themselves in terms of how satisfied they feel with the task, but also generate new knowledge about the tasks, strategies and themselves, which they use to approach new future tasks (Pintrich, 2004; Zimmerman, 2002). As mentioned in the previous section, a strict order of progression of these stages is not assumed. In fact, Wolters (2010), in his discussion of Pintrich's (2004) framework, asserted that the phases "simply provide structure and emphasize that SRL is dependent on students' active engagement before, during, and after the completion of academic work" (p. 6).

Areas of Regulation in Self-Regulated Learning Models

In both models, the need for learners to regulate different areas of their learning processes is greatly emphasized. Pintrich (2004) identified four areas that learners can regulate at different stages of their performance. These four areas include cognition, motivation and affect, behavior, and context. Zimmerman and Kitsantas (2007), on the other hand, emphasized only three areas in which self-regulation can occur: person, behavior, and environment. However, the area that Zimmerman and Kitsantas designate as person area embodies Pintrich's areas of cognition, motivation, and affect. Pintrich

(2000b) provided a detailed explanation of all the four areas of regulation in his model. I draw upon his account to describe how learners regulate different aspects of their learning.

Based on Pintrich's (2000b) description, learners regulate their cognition by selecting and using various cognitive and metacognitive strategies for memory, learning, problem solving, and thinking, for example, by using imagery for remembering (Zimmerman, 2002), or using rehearsal, organizational and elaboration strategies. When regulating their motivation and affect, students select strategies that help them complete the task. These strategies can be oriented toward increasing their beliefs about their ability to perform the tasks (self-efficacy), their interest in the task, or perceived value of the task, or toward the regulation of goal-orientation. Examples of such strategies include positive self-talk, promising extrinsic rewards, or taking breaks while performing a task. When the regulation of behavior is necessary, learners adopt strategies to manage their time, structure the environment to make it conducive to learning, monitor their efforts, and seek help. Finally, when learners regulate their environment, they rely on strategies that allow them to make the task easier, more interesting and valuable to them. Such strategies can also include negotiating deadlines with instructors, or breaking the task into smaller parts to facilitate completion.

As with the phases of SRL, Pintrich (2004) and Zimmerman and Kitsantas (2007) agree that the different areas of regulation can occur at different times during self-regulated learning and that regulation of one area can affect other areas. They also recognized that the use of strategies could vary across, and within, tasks and individuals

(Pintrich, 2000b). More importantly, in both models, the regulation of motivation is perceived as greatly affecting learners' ability to regulate other areas. In fact, in an earlier version of his model, Zimmerman (2000a) noted, "Self-regulatory skills are of little value if people cannot motivate themselves to use them" (p. 17).

Summary of Socio-Cognitive Models of Self-Regulation

In this section I have discussed a model of SRL in writing (Zimmerman & Kitsantas, 2007) and a model of SRL in the college classroom (Pintrich, 2004). The models have been tested and are supported by research in first-language writing and educational psychology. In relation to L2 writing, the value of these two models lies in the fact that they can be used to explain success in the college writing classroom. They serve as a lens into the acquisition of writing skills, and they also provide insights into why and how there is variation in the success of individual learners. Writing is a difficult skill to master, even more so for non-native speakers of English; therefore, as assumed in these models of SRL, it is important that learners actively regulate their writing in order to successfully develop their skills and writing performance.

Self-Regulated Learning Strategies Research

Most of our understanding of the role of SRL strategies use in writing achievement is derived from findings in educational psychology research conducted in the 1980s and 1990s, which support the notion that SRL strategies are a characteristic that differentiates high-achieving learners from low-achieving learners and a factor that predicts academic achievement. Findings from intervention studies in first-language writing support this notion and reveal that the explicit instruction of SRL strategies can improve writing achievement. Some of these findings are supported in L2 writing research, but results regarding the predictive nature of SRL learning strategies in L2 writing remains inconclusive and deserves further investigation. I discuss the significance of SRL strategies in relation to academic achievement, first language (L1) writing research, and L2 writing research hereafter.

Self-Regulated Learning Strategies and Academic Achievement

In educational psychology, correlational studies conducted in naturalistic settings reveal that there are differences in SRL strategy use between achievement groups. Zimmerman and Martinez-Pons (1986) conducted structured interviews to assess the relationship between SRL strategy use and achievement in math and English among 40 high-achieving students and 40 low-achieving students enrolled in suburban high schools in the United States. This study revealed clear differences between the high-achieving and low-achieving students in the use of 14 self-regulatory strategies that had been previously been identified in laboratory research. The SRL strategies included: *self-evaluation, organization and transformation, goal setting and planning, information seeking, record keeping, self-monitoring, environmental structuring, giving self-consequences, rehearsing and memorizing, seeking social assistance, reviewing, and other.* Although the researchers did not achieve statistical significance, they found that, except for the use of *self-evaluation,* high achievers reported more use of SRL strategies than low achievers in different settings. In a more recent study, DiBenedetto and Zimmerman (2010) also found differences in the self-regulatory processes of 51 junior high school students with high, average, and low levels of achievement in science. The authors reported differences in the use of SRL while reading, studying, test monitoring, and test self-evaluation. Taken together, both studies lend support to Zimmerman and Kitsantas (2007) cyclical model of SRL in writing in which self-regulated learners are assumed to monitor different aspects of their learning using a wide variety of SRL strategies.

Research in educational psychology has also provided evidence of the predictive nature of SRL strategies. Including some of the SRL strategies investigated by Zimmerman and Martinez-Pons, (1986), Wolters (1998) found that SLR strategies (*performance goals, extrinsic rewards, task value, interest, mastery goals, efficacy, cognition, help seeking, environment control, attention, will power, emotion, other motivation*) predicted a significant proportion of the variation of the use of strategies and the course grades obtained by 115 students enrolled in an introductory psychology course at a university in the United States. Wolters (1999) obtained similar results with a sample of 88 Grade 9 and10 grade students from Caucasian, Asian, Hispanic, African American, and Native American ethnic backgrounds attending a school in Texas. The SRL strategies he selected included strategies to regulate motivation, such as *interest enhancement, performance self-talk, self-consequating* (a term used to describe strategies to reward or punish behavior)*, mastery talk, and environmental control structuring,* and strategies to regulate cognition and metacognition, such as *rehearsal,* *elaboration, organization, planning, monitoring, and regulation.* Analyses of differences in strategy use revealed high frequency use for *self-talk*, moderate, but equal, frequency use for *environmental control* and *self-consequating,* and less frequency use for *mastery talk* and *interest enhancement*. Correlational analyses revealed: (a) moderate to weak positive correlations among the five motivational regulation strategies, (b) statistically significant moderate to strong correlations between use of cognitive and metacognitive strategies, motivational strategies, and effort, and (c) weak correlation between self-talk and grade point average. Regression analyses to examine the predictive strength of each of the criterion variables showed that the five motivational regulation strategies explained a significant amount of the variance in effort, but only one motivational regulation strategy, *self-talk*, predicted classroom performance. Wolters (1999) concluded that motivational regulation strategies are an important aspect of SRL, and stressed the need for future research to investigate their role in academic settings.

As mentioned above, Zimmerman and Martinez-Pons (1986), and Wolters (1998, 1999) have provided the basis for much of the contemporary research in first-language-writing and second-language writing. These studies not only indicate differences in the SRL strategy use of high achieving and low achieving learners, but also show that SRL strategies are interrelated and seem to play a significant role in the prediction of academic achievement. More importantly, as Zimmerman and Martinez-Pons (1986) noted, the findings lend support to the notion that successful learners are "initiators, planners, and observers of their own academic experiences" (p. 626) and that their performance on specific writing tasks can be influence by the extent to why they rely on SRL strategies. Based on these findings, I believe it is important to investigate the role that SRL strategies play in L2 writing achievement.

Self-Regulated Learning Strategies and First Language Writing Research

The identification of differences in the use of SRL strategy use among learners and of the predictive value of SRL strategy use in academic achievement have resulted in the development of teaching approaches to writing that emphasize the explicit teaching of SLR learning strategies. One of these approaches is the Self-Regulated Strategy Approach (SRSD) originally developed by Graham and Harris (2003) to address the needs of struggling writers and students with learning disabilities. This approach involves five steps that include discussion of the activation of students' knowledge of strategies, explicit teaching of strategies, modeling, scaffold practice, and independent practice (Graham & Harris, 2003). Most of our understanding of the role of SRL strategy use in first-language writing comes from intervention studies that have assessed the impact of this approach on several aspects of writing.

The findings of intervention studies indicate that the learners' writing skills and the quality of their written products improve as a result of SRL strategy instruction. In a meta-analyses research study of the influence of the Self-Regulated Strategy Approach to writing instruction, Graham (2006) reviewed thirty-nine studies that had been conducted in first-language writing and concluded that SRL strategy instruction consistently resulted in large improvements in writing quality, schematic structure, and quality of revisions across different types of students. These results were similar for poor writers and students with learning disabilities, younger and older students, and across different writing genres, such as narrative and expository writing (p. 203).

Supporting these findings, a more recent study conducted by MacArthur, Philippakos and Ianetta (2014) confirmed the important role of SRL instruction on writing achievement. In a quasi-experimental study, the researchers evaluated the effects of a curriculum based on SRL strategy instruction for college developmental courses with 276 students enrolled in 19 developmental classes in 2 different universities in the United States. Strategies identified by Zimmerman and Martinez-Pons (1986) and Wolters (1998, 1999) such as planning, revision, goal setting, task management, progress monitoring, self-reflections, and self-assessment were included in the curriculum for the treatment group. The researchers found that the self-regulatory strategy curriculum had a positive effect on the overall quality on the students' persuasive essay writing (*ES* = 1.22), and that on average, the students in the treatment group gained more points in their compositions than the students in the control group. Of special importance in this study is the fact that the researchers found a significant effect between SRL writing instruction and self-efficacy beliefs about writing in the treatment group, which is a relationship that was not examined in the studies evaluated by Graham (2006). This finding highlights the role of SRL strategies as precursors of self-efficacy beliefs, and suggests that knowledge of SRL strategies can increase college students' self-efficacy beliefs in their ability to write persuasive essays.

In general, these studies clearly indicate the vital role that SRL strategy instruction can play on writing quality and achievement, and provide insights into its influence on writing self-efficacy beliefs; however, as pointed out by Graham (2006), a major problem with the findings of these studies is “whether effects are maintained over time and generalized to new tasks and situations” (p. 204). Another problem is that these studies focus on the effects of instruction and not on the influence individual differences in SRL strategy use.

Self-Regulated Learning Strategies in Second-Language Writing Research

Correlational studies in L2 writing achievement partly corroborate findings in educational psychology and first-language research in writing and some studies indicate that SRL strategies are related to L2 writing achievement. In the context of Iranian EFL learners, Farsani, Beikmohammadi, and Mohebbi (2014), assessed the relationship between SRL strategy use and writing achievement on descriptive, expository and argumentative essays. The data was collected from 48 Iranian undergraduate students majoring in English in different universities in Iran. The use of SRL strategies was assessed with the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich, Smith, Garcia, and McKeachie (1991), which includes subscales on the use of cognitive, metacognitive and resource-management strategies (e.g. help seeking and effort regulation). The authors found a statistically significant negative correlation between cognitive and metacognitive SRL strategies (r = -.29, and r = .019, respectively), and essays scores, but not between resource management strategies and their essay scores. Although the authors do not discuss the implications of the findings, the results suggest that students with higher scores use less cognitive and metacognitive SRL strategies, while students with lower scores use report more use of these strategies. However, the negative relationship reported by the authors goes contrary to the assumptions in models of SRL learning, which characterize high-achieving students as engaging in the use of more SRL strategies than low-achieving students.

In a more recent study, Mehrabi, Kalantarian, and Boshrabadi (2016), also using Pintrich et al.'s (1991) Motivational Strategy Use Questionnaire (MLSQ), assessed the relationship between the use of SRL strategy and writing achievement in a writing test with a sample of 195 Iranian sophomore students enrolled in an academic writing course. Based on their responses on the MLSQ, students were designated to two groups, the low self-regulation group and the high self-regulation group. At the end of the academic writing course, and after having received instruction in essay writing, a writing test was administered as a posttest. Mehrabi et al. (2016) conducted ANOVA and found that the mean scores in the writing tests were higher for the self-regulation group than the low self-regulation group. At the same time, but unlike Farsani et al. (2014), the researchers found a positive correlation between the students' level of self-regulation and writing performance in follow up correlation analyses. The discrepancy of the findings in these two correlational studies indicates the need for further research on the relationship between SRL and writing achievement in L2.

Intervention studies conducted in L2 writing research also indicate that the explicit teaching of SRL strategies, using the Self-Regulated Strategy Development approach, can have positive effects on writing performance. El-Henawy, Dadour, Salem, and El-Bassuony (2012) conducted an experimental research study to assess the impact of the explicit teaching of SRL strategies on the writing performance of argumentative essays of 30 third-year English prospective teachers in Port-Said University. The authors found, that after the intervention, the essays of the students in the treatment group were better organized and included more details, were on average longer than pre-intervention samples, and included more transitions words and more reasons to support their claims (p. 22). However, as in research in first-language writing, the intervention effects only lasted 3-4 weeks and mostly assess the effect of instruction.

In relation to the predictive nature of SRL strategies on writing achievement, L2 writing research has yielded conflicting evidence. Zhao and Dong (2011) tested a path model of self-regulated learning that included many of the motivational and cognitive strategies identified by Wolters (1998, 1999), as well as goal orientations and writing self-efficacy, with a sample of 678 Chinese sophomores majoring in English at a university in China. The outcome variable was the writing scores awarded to students in short essays during EFL writing examinations. The results of this research confirmed findings in educational psychology and indicated that SRL strategies accounted for 33% of the variance in writing performance. However, in a more recent study Lin, Cheng, Lin, and Hsieh (2015) found that SRL strategy use was not a statistically significant predictor or mediator of writing achievement. Using structural equation modeling, the authors investigated the relationship between SRL writing strategies, other motivational factors (ability self-concept, interest value, and utility value), and the research-article abstract writing ability of 185 Chinese graduate students. The authors found that motivational factors predicted writing ability, but SRL strategies did not. A direct effect of SRL strategy use on writing ability, or an indirect effect of motivational factors through SRL strategy use was not found. The conflicting results of these two studies attest to the importance of further investigations of the role of SRL strategies in L2 writing achievement.

With regards to differences in achievement as a result of SRL strategy use, most of what is known about individual differences in SRL strategy use and writing achievement in L2 writing research is derived from studies that have adopted a cognitive approach to the study of writing and have focused on how complex writing can be, especially for novice writers, as opposed to experienced writers (Hindi & Boscolo, 2006). Taken together, the findings of these studies support the notion that successful and experienced writers, unlike unsuccessful and novice writers, possess knowledge of genre-specific discourse schemata and composition strategies, use a variety of planning and revising activities (Glaser & Brunstein, 2007; Graham & Harris, 2003; Zimmerman & Risemberg, 1997), carefully monitor their writing and focus on content-level rather than surface level features when revising their writing (Conrad & Goldstein, 1999; Ferris, 1997, 2003; Goldstein, 2004; Hyland, 1998), are aware of the expectations of the readers and make constructive evaluations about their writing (De La Paz & Graham, 2002; Ferris, 1997; Goldstein, 2004; Graham, 2006). The findings from these studies are informative as they highlight individual differences among successful and unsuccessful writers and experienced and novice writers. However, as mentioned earlier, the studies focus mostly on differences in planning and revising skills, ignoring much of the affective and personal factors that characterize SRL approaches (Dörnyei, 2005), and, as such, provide a valuable, yet limited picture of the entire SRL process. For this reason, it is important to examine differences among successful and unsuccessful writers and experienced and novice writers from the perspective of self-regulated learning.

Summary of Self-Regulated Learning Strategy Research

In this section, I have reviewed research that has examined the role of the use of SRL strategies on academic and writing achievement in L1 and L2 contexts. Findings from educational psychology indicate that SRL strategy use is a distinctive characteristic of high achievers (DiBenedetto & Zimmermann, 2010; Wolters, 1998,1999; Zimmerman & Martinez-Pons, 1986), and a plausible predictor of writing achievement (Wolters, 1998,1999). The findings also support the assumptions of SRL models of academic achievement and writing in which it is assumed that at difference stages of their performance, learners rely on different kinds of SRL strategies to improve the outcomes of their performance.

In addition, findings in first-language writing research converge with the findings in educational psychology and highlight the vital role that the explicit teaching of SRL strategies (Graham, 2006; MacArthur et al., 2014) can have on the quality of students' writing as well as its plausible effect on self-efficacy beliefs (MacArthur et al., 2014). The problem with intervention studies is that they focus mostly on the effects of instruction rather than on the learners' individual differences with regards to their knowledge and use of SRL strategies. The fact in most of the studies, the interventions only had short-term lasting effects also undermines the significance of the findings.

However, research in L2 writing seems to only partially confirm findings in educational psychology and first-language writing. Positive relationships between SRL and writing achievement have been reported (Mehrabi et al., 2016) and SRL strategies have also been found to predict writing achievement (Zhao & Dong, 2011). However, other studies have reported negative relationships between SRL and writing achievement (Farsani et al., 2014), or no relationships between SRL strategy use and writing achievement (Lin, et al., 2015). In addition, most of the information we have about individual differences in the use of SRL strategies is derived from studies that have focused mostly on examining differences in planning and revision skills between novice and experienced writers and between high-achieving and low-achieving writers. These findings only provide a limited understanding of the role that SRL play in individual differences. On the other hand, intervention studies in L2 writing are in line with findings in L1 writing research and indicate a positive, yet limited influence of explicit instruction of SRL strategies and writing achievement. However, given that the results in L2 writing research are mostly inconclusive, it is clear that further studies exploring the role of SRL learning strategies are necessary in order to gain a clear understanding of the relationship between SRL and writing achievement and to confirm existing findings.

Writing Self-Efficacy Research

Self-efficacy beliefs are one of the most important beliefs in social cognitive views of self-regulation and SR. Their influence on several aspects of SRL including the learner's self-regulation of behavior, SRL strategy use, and goal setting is greatly emphasized in models of self-regulated learning (Pintrich, 2004). From a socio-cognitive view of self-regulation, lacking the appropriate self-efficacy beliefs can hinder effective learning, while high levels of self-efficacy can allow learners to persevere and put more effort in the tasks they choose and when facing challenges (Bandura, 1991; Pajares, 2005). Social cognitive theorists also posit that self-efficacy beliefs can be developed through mastery experiences (learning a task well), vicarious experiences (observing others), social/verbal persuasion (feedback from peers/teachers), and interpretations of physiological and emotional states (feelings of anxiety and apprehension) (Pajares, 2005). Given its theoretical value, in this section, I review research on the role of self-efficacy in the context of L1 and L2 writing.

Self-Efficacy in First-Language Writing and Self-Regulated Learning Research

Most of what is known about the role of self-efficacy in first-language writing is derived from research conducted during the 1990s with middle school students (Pajares & Valiante, 1997, 1999) and high school students (Pajares, Miller, & Johnson, 1999) in different grade levels, and with college students (Pintrich & De Groot, 1990; Zimmerman & Bandura, 1994). Using regression and path analyses, these studies have consistently confirmed that writing self-efficacy predicts writing achievement and performance, plays a mediating role in writing achievement, and it is related to other important motivational variables such as writing attitudes or beliefs, SRL strategy use, and goal orientation (Pajares, 2003).

In relation to its predictive role in writing achievement, Pajares and Valiante (1997, 1999) and Pajares, et al., (1999) found that even when combined with other motivational variables such as writing apprehension, attitudes and value beliefs, and anxiety, self-efficacy made an independent contribution to the writing performance of middle school and high school students.

At the same time, in one of the few studies in first-language writing to examine self-efficacy from the perspective of SRL, Zimmerman and Bandura (1994) also provided support for the predictive nature of self-efficacy beliefs. The authors examined the relationship between writing achievement and several variables, which included self-efficacy for self-regulation, academic goals, and self-standards. Self-efficacy for self-regulation was operationalized as confidence in using several self-regulation writing strategies. The sample included 95 freshmen university students enrolled in a writing course. The results indicated that higher self-efficacy beliefs were related to higher perceived self-efficacy and personal standards for achievement. Students with high self-efficacy developed goals and techniques that helped them learn to write at a higher level. Consequently, self-efficacy impacted the grades obtained by the students in the writing course and predicted more than one third of the variation of undergraduate students' grades, highlighting the importance of both, self-regulatory strategies and self-efficacy. In a more recent study, Pajares and Valiante (2001) also found that self-efficacy beliefs made an independent contribution to the writing performance of 218 fifth graders, and that this contribution overshadowed the influence of writing ability; a result that was unexpected and that clearly supports social cognitive views of the role of self-efficacy on achievement.

In the context of university students, research has also confirmed the predictive strength of writing self-efficacy in writing achievement. Prat-Sala and Redford (2012) tested the contribution of writing self-efficacy and reading self-efficacy to the writing performance of 145 undergraduate students. The investigators used the same validated scales to assess goal orientation, goal structure and academic efficacy that Pajares et al. (2000) used in their study (e.g., Patterns of Adaptive Learning Survey [Midgley et al., 2000]). They also used validated scales to assess the use of learning strategies and self-regulation strategies. Students' writing ability in English was operationalized as the scores that students obtained in a 30-minute essay developed for the study, and students responded to the scales immediately after writing the essay. The results indicated that self-efficacy for reading and writing both made a significant contribution to the students' essay grades, but, more importantly, they found that writing self-efficacy made a more significant contribution to writing performance than reading self-efficacy, attesting to its vital role in writing performance.

Research in first-language writing has also shown that self-efficacy can have an influence on other motivational variables. To discuss all the motivational, affective, or cognitive variables that can influence self-efficacy is beyond the scope of this review but of importance to the current study research is the relationship between self-efficacy and SRL strategies, writing attitude or beliefs, and goal orientation, which are the key motivational variables associated with SRL learning.

In connection with SRL strategies, Pintrich and De Groot (1990) found that the self-efficacy beliefs of 173 seventh graders were positively correlated with the use of SRL strategies (r = .44). Earlier studies conducted by Zimmerman and Martinez-Pons (1990), had also demonstrated that students with high self-efficacy beliefs were more likely to use cognitive and metacognitive strategies and exert effort for longer periods of time than students' with lower levels of self-efficacy. These findings support socio cognitive views of self-regulation, which contend that self-regulation practices are dependent on self-efficacy beliefs (Schunk, 2001; Zimmerman, 1989).

In relation to writing attitudes, writing self-efficacy has been found to overshadow the influence of writing attitude or value beliefs. Pajares and Valiante (1999) found that the value beliefs about writing of middle school students were nullified when self-efficacy beliefs were included in regression analyses, suggesting that self-efficacy is a more powerful predictor than writing attitudes.

Finally, with regards to goal orientation, Pajares et al. (2000) have provided evidence that achievement goals and task goals are related to self-efficacy beliefs. They conducted two studies to assess the relationship between achievement goals, motivation, and gender in middle school writing and science. In both studies they found that task goals and performance-approach goals were associated with self-efficacy, but performance avoidance goals had a negative relation to self-efficacy, suggesting that performance approach goals are grounded in self-regulatory practices that lead to positive outcomes.

Taken together, the studies in first-language writing lend support to the notion that “self-efficacy makes an independent contribution to the prediction of writing outcomes and plays the mediational role that social cognitive theorists hypothesize” (Pajares, 2003, p. 145). They also provide evidence in support of the assertion that self-efficacy is “a precursor to SRL, a mediator, and an exclusive or concomitant outcome of SRL” (Zimmermann & Schunk, 2012, p.11).

However, in educational psychology and first-language writing research, a clear understanding of the developmental nature of self-efficacy and of how it changes as learners gain more experience in writing has not yet been established. It would be reasonable to assume that self-efficacy beliefs develop with more experience and knowledge of writing, but the research findings do not clearly support this assumption. Shell, Colvin, and Bruning (1995) found that self-efficacy beliefs for accomplishing writing tasks increase from grade 4 to grade 10; however, Pajares and Valiante (1999), found that writing self-efficacy beliefs in middle school children decline from sixth to seventh grade, but increase again in eighth grade. Changes in self-efficacy as a result of more writing experience in grade levels is still unclear. Williams and Takaku (2011) associate this problem with the students’ overestimation of self-efficacy beliefs. In fact, they report that, in the context of college courses, Meier, McCarthy, and Schmeck (1984), found that college students in freshmen composition courses often overestimated their writing ability and that self-efficacy scores predicted writing performance at the beginning, but not at the end of the course (Cited in Williams & Takaku, 2011, p. 3). The inconclusive findings in these studies with regards to the role of writing experience on self-efficacy beliefs clearly show that this is an area that necessitates further research.

Self-Efficacy and Second- and Foreign-Language Writing Research

In general, several studies have examined the relationship between writing self-efficacy and writing performance and achievement in L2 writing contexts, but research in L2 contexts is still limited in the sense that most researchers have only examined the influence of self-efficacy on writing achievement, but have given little attention to its influence on other motivational factors.

Confirming findings in L1 writing and SRL research, L2 researchers have also found evidence that support the view of writing self-efficacy as a predictor of writing performance. The first evidence supporting this notion comes from Woodrow (2011). Woodrow examined the role of self-efficacy beliefs in a sample of 670 Chinese students enrolled in English classes in four different universities in China. Path analysis was used to examine the relationship between this construct, writing anxiety, and writing performance in one essay on the topic of "The role of English in the world." The investigator hypothesized a model where self-efficacy and anxiety made independent contributions to the scores in the essays. However, the author found that self-efficacy was moderately related to writing performance (r = .43) and that it mediated the relationship between writing anxiety and writing performance.

Two additional correlational studies with students from different cultural backgrounds corroborate the findings of Woodrow (2011) study. First, Chea and Shumow (2014) found a small, yet statistically significant correlation between writing the self-efficacy beliefs and essay writing achievement ($r = .15$, $p < .05$) of 214 Cambodian university students studying English as a foreign language. Second, in the context of Thai students, Hetthong and Teo (2013) examined the relationship between self-efficacy and writing performance at the paragraph level and at the sub-skills level. The researchers found that writing self-efficacy had a strong correlation ($r = .71$) with the paragraph writing scores of 51 Thai English majors. With an additional linear regression model, the researchers confirmed that self-efficacy predicted the writing performance at the paragraph-level and at the sub-skills level. Taken together, these studies confirm the applicability of the construct of self-efficacy to L2 writing self-efficacy and confirm findings in first-language writing research.

Nevertheless, there are other research studies that have not found statistically significant relationships between self-efficacy and L2 writing achievement. Hashemnejad, Zoghi, and Amini (2014) is one of the studies. Hashemnejad et al., examined self-efficacy and writing achievement in the context of 120 EFL students majoring in Teaching English as a Foreign Language at university in Iran, but they did not find a statistically significant correlation between self-efficacy and students' scores in a writing test administered three times and selected from the IELTS proficiency tests. The author attributed the results to the fact that the instrument used to assess self-efficacy beliefs was not directly related to the outcomes of the course. In other words, the instrument assessed more general beliefs than domain specific beliefs about writing.

The second study that did not find a statistically significant relationship between self-efficacy and L2 writing achievement is the study conducted by Zhao and Dong (2011). This study is also one of the few L2 studies to examine the influence of self-efficacy on writing achievement from a SRL perspective. Zhao and Dong (2011) tested a model of L2 writing achievement with 678 Chinese sophomores using structural equation modeling. The findings did not highlight the predictive effects of self-efficacy on writing performance, as they only found a mediating effect of self-efficacy through the use of cognitive strategies. Zhao and Dong attributed this unexpected result to the fact that their study included more motivational regulation components in addition to self-efficacy. In fact, they cited a study by Fang (2003), which included similar motivational constructs, and in which self-efficacy had not been found to have a direct influence in academic achievement. In light of similar findings, the investigators emphasized the plausibility that writing self-efficacy would only have an indirect impact in models that incorporate additional motivational components, and stressed the need for additional research. Overall, given the conflicting findings in L2 writing research, it is clear that further studies are necessary to clarify the relationship between self-efficacy and L2 writing achievement and to confirm findings form L1 writing research.

Although a fair number of studies have examined the relationship between self-efficacy beliefs and writing achievement, L2 research on the relationship between writing self-efficacy and other motivational factors, such as goal orientation, attitudes, and SRL strategies is still scarce. With regards to goal orientation, Chea and Shumow (2014) found a positive relationship between writing self-efficacy and mastery goal orientation, but found a non-significant relationship between self-efficacy and performance-approach orientations. In their discussion, the authors pointed out that these findings have been consistently supported by other L2 research on self-efficacy and goal orientation, such as Pan (2010), and Liem, Lau, and Nie (2007) (Cited in Chea & Shumow, 2014).

In relation to writing self-efficacy and attitudes, or beliefs about writing, in one correlational study conducted in Iran with 72 female undergraduate students, Rezaei and Rassaei (2015) reported a positive relationship between the students' self-efficacy beliefs and beliefs about writing (r = .66), which included transmission, recursive beliefs, and audience beliefs about writing. This, however, appears to be the only research linking beliefs about writing with self-efficacy beliefs in second-language writing research.

Finally, with regards to the relationship between self-efficacy and SRL strategies, Zhao and Dong (2011) reported a relationship between self-efficacy and variation in cognitive strategy use in the context of Chinese students. Similarly, a few studies have reported that students with higher self-efficacy beliefs use more cognitive and metacognitive strategies than their counterparts in the context of Iranian undergraduate students (Jahangard & Zandieh, 2010) and Korean students (Chea 2011). However, with the exception of Zhao and Dong (2011), who focused on SRL strategies, the other two studies examined only cognitive and metacognitive strategies, which do not include monitoring of motivation and affect and can be considered only a small part of what constitutes SRL strategy use. Therefore, given the limited amount of research exploring the relationship between self-efficacy and key motivational factors associated with SRL, it is imperative that more research is conducted in this area to broaden our understanding of the role of self-efficacy on L2 writing achievement.

Summary of Writing Self-Efficacy Research

In this section, I have discussed the relationship between self-efficacy and writing achievement, and between self-efficacy and goal orientation, attitudes, and SRL strategy use in the contexts of L1writing and SRL research and L2 writing research.

In L1 and SRL research, self-efficacy has been consistently shown to have a powerful impact on writing achievement (Pajares et al., 1999; Pajares & Valiante, 1997,1999, 2001; Prat-Sala & Redford, 2012; Zimmermann & Bandura, 1994) and to be related to SRL strategy use (Pintrich & De Groot, 1990; Zimmermann & Martinez-Pons, 1990), writing attitudes (Pajares & Valiante, 1999), and goal orientation (Pajares et al., 2000). However, research in this context has not yet yielded consistent findings in relation to the developmental nature of self-efficacy (Pajares, 2003). In other words, it is not yet clear whether or not levels of self-efficacy increase as learners' progress through different grade levels and obtain more experience with writing.

In general, writing self-efficacy research in L2 corroborates findings in L1 research and supports the notion that writing self-efficacy predicts writing achievement and performance, but not all the research findings converge in support of this notion, as some researchers have found a direct link between these variables (Chea & Shumow, 2014; Hetthong & Teo, 2013; Woodrow, 2011), but others have not (Hashemnejad et al., 2014; Zhao & Dong, 2011). In addition, L2 research also indicates that there is a relationship between writing self-efficacy and goal orientation (Chea & Shumow, 2014), self-efficacy and writing attitude or beliefs (Rezaei & Rassaei, 2015), and self-efficacy the use of SRL strategies (Chea, 2011; Jahangard & Zandieh, 2010; Zhao & Dong, 2011). However, most of the research is correlational in nature, it is scarce, and the strategies that have been examined only constitute a limited part of SRL strategies.

It can then be concluded that more research is necessary to better understand the developmental nature of self-efficacy, to confirm findings in L1 writing research about the relationship between self-efficacy, writing achievement, goal orientation, and attitudes, and SRL strategy use, and to broaden our understanding of the role of self-efficacy in L2 writing. In other words, further research is necessary to better understand the role of self-efficacy in L2 writing achievement.

Goal Orientation Research

According to Pintrich (2000a, 2000b), early SRL research on goal orientation and academic achievement in domains other than writing revealed that *mastery* goal orientations are associated with increases in self-efficacy, perceptions of task value and interest, effort, and persistence, use of self-regulatory strategies, and better performance; while *performance-approach* goals are related to less positive effects in performance, and *performance-avoidance* goals lead to maladaptive behaviors that can include a lack of persistence, and less, or shallow, use of SRL strategies (Pintrich, 2000b). Of special interest to the current study is the relationship between goal orientation, self-efficacy, attitudes, and SRL strategy use. In this section, I review studies in first-, second-, and foreign-language writing that have examined this relationship.

Goal Orientation in First-Language Writing Research

In general, although students' goal orientations have attracted extensive research in academic settings other than writing, studies about goal orientation in the domain of writing remain scarce. In the handful of studies that have been conducted, the researchers have often distinguished between three types of goal orientations: mastery goal orientation, performance-approach goal orientation, and performance-avoidance goal orientation, and have examined their relationship to self-efficacy, SRL strategy use, and task or domain value.

The first evidence of the relationship between goal orientation and self-efficacy comes from a study by Pajares, Britner, and Valiante (2000), who examined the contribution of goal orientation to the prediction of writing self-efficacy, writing self-concept, self-efficacy for self-regulation, and writing apprehension, while controlling for the influence of previous writing aptitude in sample of 497 middle school students. Writing self-efficacy was operationalized as students' judgments of their confidence that they could earn an A, B, C, or D in their class, while self-efficacy for self-regulation was defined as students' judgments of their capability to use various SRL strategies. Several validated Likert scales were used to obtain information on the outcome variables. The investigators found that (a) mastery goals were positively correlated with self-efficacy, self-concept, and self-efficacy for self-regulation, (b) performance-approach goals were related to writing self-efficacy, but not to self-efficacy for self-regulation, and (c) performance-avoidance goals had a negative correlation with self-efficacy and self-regulation, but had a positive effect on apprehension. They also found that students with low GPA used both performance-approach and performance-avoidance goals. These findings were consistent with those reported in academic achievement research.

In a similar study examining similar variables with elementary to high school students, Pajares and Cheong (2003) also found that mastery goal orientation and performance-approach goal-orientation were related to self-efficacy for writing and self-efficacy for self-regulation. This was true for middle and high school students, but not for elementary school students, suggesting that these goals are more relevant for older students. In addition, in this study, a positive relationship was found between performance-approach goals and value of writing for middle and high school students.

With regards to the relationship between goal orientation and SRL strategy use, Tadlock (2016) used structural equation modeling to test the relationship between these two variables and writing grades in the context of 107 college students at a public university in the United States. Three separate models were created to test each of the goal orientations (mastery, performance-approach, and performance-avoidance models).

The results indicated a significant relationship between all three types of goal orientation and SRL strategy use. In each of the three models, the paths from each type of goal orientation predicted the use of SRL strategy use, but only in the mastery goal orientation model did SRL strategy use mediate the influence on goal orientation and grades. A positive relationship was reported for SRL strategy use and mastery goal orientation and performance approach orientation, but a negative relationship was reported for SRL strategy use and performance-avoidance goal orientation.

Taking the findings of goal orientation research together, it can be concluded that first-language research supports socio-cognitive views of goal orientation, as it has been found to be related to self-efficacy, value of writing, and SRL strategy use.

Goal Orientation and Second- or Foreign- Language Writing Research

As is the case with first-language writing research on goal orientation, research examining the relationship between goal orientation and L2 writing achievement is also scarce, but overall consistent with findings in L1 writing research. To test the notion that SRL strategy use and goal orientation are related constructs, Kaplan, Lichtinger, and Gorodetsky (2009) explored the relationship between 211 Israeli ninth grade students' writing goal orientations (mastery-approach goals, performance-approach goals, performance-avoidance goals, mastery-goal structure, and performance goal structure), use of SRL strategies and writing achievement. The results indicated that mastery-approach goals, and mastery goal structure were positively correlated with the use of SRL strategies. In contrast, performance-approach goals, performance-avoidance goals, and performance goal structure were associated with some of the SRL strategies, but not with others. This finding differs from those obtained from studies in L1 that reported relationships between all three types of goal orientations and SRL strategy use (Pajares & Cheong, 2003; Tadlock, 2016). Nevertheless, Kaplan et al. (2009) also found that the goals students set for their learning play an important role in their ability to self-regulate. Specifically, mastery oriented students were more likely to use SRL strategies to monitor their attention and edit their writing, while students with approach-avoidance orientation were more aware of the audience and their progress in the writing task. The investigators concluded that their study supports a multi-dimensional view of self-regulation in writing, in which students with different goal orientations "do not only vary in the level of self-regulation but also in the type of strategies they use while self-regulating their engagement in a writing task" (p. 61).

However, Farsani et al. (2014) previously discussed in relation to SRL strategy research, also reported a positive relationship between goal orientation and SRL strategy use. The authors investigated the relationship between mastery, performance-approach, and performance-avoidance goal orientations, use of SRL strategies, and writing outcomes with 48 undergraduate English majors in Iran. Pintrich et al.'s (1991) Motivated Strategies for Learning Questionnaire was used to assess these constructs. The researchers did not find a significant relationship between SRL strategy use and writing achievement or between goal-orientation and writing achievement. However, they did find a positive significant relationship between mastery-approach, mastery-avoidance, performance-avoidance goal orientations and the use of SRL strategies.

Specifically, mastery-goal orientation showed a significant relationship with cognitive, metacognitive, and resource-management strategies, which indicates that learners whose goal is to master writing skills are more likely to use strategies to achieve their goals.

Despite the fact that Kaplan et al. (2009) and Farsani et al. (2014) found evidence of the relationship between goal-orientations and the use of SRL strategies, it is clear that research in this area is limited. Therefore, the need for more research on writing achievement goals and their relation to SRL strategy use at the college level and with larger samples is necessary to confirm this finding and better understand the relationship between these two factors.

Summary of Goal Orientation Research

Socio-cognitive theorists and SRL research posit that goal orientation is related to not only to SRL strategy use, but also to self-efficacy, and value beliefs. The studies reviewed in this section lend support to this assumption. Research in first-language writing indicate that the learners' goal orientations are significantly related to SRL strategy use (Pajares et al., 2000; Pajares & Cheong, 2003; Tadlock, 2016), to students' self-efficacy beliefs (Pajares et al., 2000; Pajares & Cheong, 2003), and to the learners' value of writing (Pajares & Cheong, 2003). However, most of these studies have been conducted with school students and using correlational analyses.

Research in foreign-language writing confirms the relationship between mastery, performance-approach, and approach-avoidance goal orientations, and SRL strategy use

(Farsani et al., 2014; Kaplan et al., 2009). It also indicates that college students' use of SLR strategy use differs depending on the learners' goal-orientation (Farsani et al., 2014; Kaplan et al., 2009), confirming the applicability of findings in school settings, and first-language research to university settings. However, this research is limited in scope and does not suggest or confirm relationships between self-efficacy, value towards writing, and goal-orientations. In addition, these studies have only adopted a correlational methodology to study the link between goal orientation and SRL strategy use.

Combining the findings from these two fields of writing research, it can be concluded that more research on the relationship between goal orientation and SRL strategy use and key motivational factors associated with SRL in writing is necessary. Further research with students at the college level and using different methodologies are necessary to confirm these findings and better understand the impact of goal orientation on these important motivational factors, and this study intends to explore such relationships.

Writing Attitudes Research

The relationship between attitudes towards writing as a domain of learning and other motivational factors and writing achievement has received little attention in educational psychology research, L1 writing research, and L2 writing research. Graham, Berninger, and Fan (2007) pointed out that although attitudes have been considered important for decades, they are not often included in conceptualizations of motivation as it relates to school learning (p. 518) At the same time, Petric (2002) asserted that second-language writing studies that address “students’ perceptions, experiences, and attitudes towards L2 writing are scarce” (p. 11). This finding might be partly due to fact that attitudes are conceptualized in different ways across researchers and fields of study. For example, in SRL research instead of using the term *attitude* Zimmerman (2000a) uses the term *interest* to refer beliefs that result in valuing an activity or skill for its inherited properties. Similarly, Pintrich and Zusho (2002) used the term *interest* to refer to value beliefs about the tasks or domains of learning, which, as discussed earlier in this chapter, can be considered similar to attitudes in that they both involve negative to positive perceptions of value. Derived from findings in SRL research, attitudes have been identified as “emotional precursors of the initiation of learning behavior” (Kormos, 2012, p. 395) in second-language motivation research. However, in spite of disagreements in the conceptualization of attitudes/interest, in theory, attitudes are thought to have an effect on SRL strategy use and cognitive engagement in writing, resulting in more engagement and strategy use for students with favorable attitudes than for those with unfavorable attitudes (Graham et al., 2007). A few studies conducted in L1 and L2 writing research have confirmed a positive relationship between attitudes towards writing as a domain of learning and writing achievement (Graham, Berninger, & Fan, 2007; Hashemian & Heidari, 2013), attitudes towards writing and self-efficacy (Pajares, Valiante & Cheong, 2007; Rezai & Rassaei, 2015), and attitudes towards writing and SRL strategy use (Hammann, 2005).

Writing Attitudes and Writing Achievement Research

Studies in L1 and L2 writing, have confirmed that writing attitude can predict writing achievement. Graham et al. (2007) tested three models of the structural relationship between the writing achievement of 241 primary school students and their attitudes towards writing. Writing attitude data was collected by asking the students to respond to seven questions that began with "How do you feel about…" followed by topics like "writing for fun at home" or "writing in school during free time" (p. 526). The students responded by selecting a happy face or unhappy face from a choice of 4 images of Garfield the Cat. In the first model, they tested the influence of writing attitude on writing achievement. In the second model, they examined writing achievement influences on writing attitude, and in the third model, they focused on the reciprocal effects of writing attitude and achievement. They found that the model that best fit the data and that was statistically significant was the first model, which tested the assumption that attitudes influence writing achievement.

A positive relationship between writing skills was also found by Hashemian and Heidari (2013). The authors conducted a study with 30 Iranian students of TEFL. Their objective was to investigate the relationship between motivation, attitude, and L2 writing. Data were collected using Gardner's Attitude/Motivation test Battery Questionnaire and a writing proficiency test which required students to write a single paragraph in a fixed period of time. The researchers conducted a series of correlation analyses and found significant correlations between positive attitudes and L2 academic writing and negative attitudes and L2 academic writing. Hashemian and Heidari pointed out that the results of their investigation support evidence found by Graham et al. (2007). These two studies clearly provide evidence in support of the important relationship between writing attitudes and achievement. However, they do not highlight possible relationships between writing attitude and self-efficacy, or writing attitude and SRL strategy use, which are of special interest to this study.

Writing Attitude and Writing Self-Efficacy Research

There is also evidence that writing attitudes can influence the learners' writing self-efficacy in L2 and L1 writing research. In addition to the study by Rezai and Rassaei (2015), discussed in an earlier section of this chapter in which the authors reported a positive relationship between attitudes towards writing and writing self-efficacy beliefs, evidence of this relationship was also found by Pajares, Valiante and Cheong (2007). Pajares et al. (2007) investigated the relationship between self-efficacy, writing motivation, writing competence, and gender. The sample included 1266 students enrolled in elementary, middle, and high school in different regions of the United States. Their study included the same scale to measure the value of writing used by the same authors in earlier studies (Pajares & Valiante, 1991, 2001). This scale assessed perceived importance of writing as well as interest and enjoyment of writing. The researchers noted that perceived value of writing was positively related to writing self-efficacy across school levels, providing further evidence of the relationship between these two factors.

Writing Attitudes and Self-Regulated Learning Strategy Use

In spite of claims that attitudes towards the domains of study are related to SRL strategy use (Pintrich & Zusho, 2002), a clear understanding of the link between attitudes toward writing and SRL strategy use has not yet been established in the research in SRL and L1 writing. However, a study by Hammann (2005) addresses this gap and highlights positive relationship between these two factors.

Hammann (2005) examined the relationship between writing beliefs, epistemology beliefs and SRL behaviors. The sample consisted of 80 pre-service teachers at a university in the United States. The writing attitude beliefs measure included beliefs about writing as a learnable skill, enjoyment of writing, and writing self-assessment (students' beliefs about their perceptions as writers). The instrument used to assess SRL strategy use was the Metacognitive Awareness Inventory that included knowledge of cognition and regulation of cognition to assess self-regulation behaviors. The results indicated a positive correlation between the three constructs in the scale, suggesting that students who enjoyed writing also believed that writing is a learnable skill and had higher self-perceptions of themselves as writers. ANOVA analyses to test for differences indicated non-significant differences between students with high enjoyment scores and low enjoyment scores and learnability beliefs, but significant differences between high and low enjoyment groups and their perceptions as writers. The results also indicated that a significant relationship between writing enjoyment and knowledge of and regulation of cognition, with students in the high enjoyment group reporting higher levels of self-regulated behavior, such as planning and monitoring. However, the instrument that Hammann (2005) used to assess SRL behaviors only included cognitive and metacognitive strategies, not strategies to regulate motivation or affect, which as mentioned earlier in this chapter can only be considered part of the construct of SRL strategies. Therefore, it is clear that more research is needed to confirm this relationship in the context of SRL.

Summary of Writing Attitudes Research

In this section, I reviewed research examining the link between writing attitudes and writing achievement and other motivational beliefs. Findings from this research consistently show a positive relationship between writing attitudes and writing achievement (Graham et al., 2007; Hashemian & Heidari 2013). They also indicate that there is a positive link between writing attitudes and self-efficacy, with students reporting higher self-efficacy beliefs as a result of positive attitudes towards writing (Pajares et al., 2007). What the studies do not show, however, is whether or not self-efficacy can predict writing attitude the same way that writing attitudes have been found to related to self-efficacy. There appears to be no research exploring this reverse causal relationship.

In addition, although a significant link has been reported between writing attitude and SRL strategies in the context of English as foreign language, Hammann (2005) appears to be the only study examining this relationship. However, as Hammann (2005) examined mostly cognitive and metacognitive strategies, it is not clear whether or not this relationship applies to SRL strategies used to regulate motivation and affect in writing. These findings warrant further research on the role of writing attitudes on SRL strategy use and self-efficacy, and the current study attempts to address this gap.

General English Proficiency Research

In this section I review studies that examine general English proficiency, as measured by standardized tests such as TOEFL or teacher developed measures of general English proficiency, and writing proficiency—measured as students' performance on outcome measures, as predictors of SRL strategy use, or writing achievement. There is abundant research on the correlation between general English language proficiency scores and academic achievement, but the results are inconclusive; while some show a positive correlation, other studies have found none (Vu & Vu, 2013). Surprisingly, research examining the influence of general English proficiency (as assessed by the TOEFL test) on writing achievement is scarce. The same is true of research examining the influence of general English proficiency on SRL strategy use. However, the studies by Sasaki and Hirose (1996) and Wang, Schwab, Fenn, and Chang (2013) shed light into the plausible role played by general English proficiency in SRL learning and writing achievement.

Using quantitative and qualitative data, Sasaki and Hirose (1996) investigated the relationship between 19 Japanese students expository writing skills and L2 language proficiency, L1 writing ability, Japanese and English writing processes, meta-knowledge of English writing, past writing experiences and instructional background. Data was collected using the Comprehensive English Language Test (CELT), a standardized English proficiency test, expository writing tasks in Japanese and English, questionnaires about instructional and personal writing background, self-reports about writing processes, and a test of knowledge of English as expository writing. Based on the scores on their English compositions, students were divided into poor and good writers, and several correlations and regression analysis were conducted to analyze the data and explore relationships between these factors. In terms of the relationship between L2 proficiency and other variables, the authors found that L2 proficiency contributed significantly to the quality of their writing and accounted for 56.7% of the total variance in the English composition scores. In relation to differences between the good and poor writers, the authors found that all the good writers were females. The researchers reported that while the groups did not differ much in terms of personal experience with writing, and knowledge of English as expository writing, good writers used a greater variety of writing strategies, such as planning and revising. They planned their compositions in relation to context and organization, and were more concerned about grammar, spelling, content, organization, and vocabulary choice while writing in English. The good writers reread their compositions and revised for both content and form while to poor writers only revised for sentence structure. In addition, the good writers differed in terms of their attitude towards writing. Good writers felt that writing in English for academic and personal purposes was easy, while the poor writers considered it difficult, suggesting a positive link between writing attitude and general English proficiency. Sasaki and Hirose (1996) concluded that while limited in terms of the sample population, their study confirmed previous findings on the influence of general English proficiency on second-language writing research. However, it is important to note that the researchers examined the use of strategies from a cognitive approach, not from the perspective of SRL.

The relationship between English language proficiency was confirmed in an more recent study conducted by Yigzaw (2013). In this study, the relationship between L1 ability, measures of English proficiency developed by teachers, and writing achievement were explored. A teacher-developed assessment of English proficiency included measures of reading comprehension, vocabulary and grammar, and the measures of writing proficiency included several samples of students' work linked to the course objectives and required writing on students' self-selected topics. The researcher selected a sample of 94 high school students attending a school in Ethiopia. Regression analyses were performed to explore influences. The results indicated both, L1 and L2 proficiency scores significantly predicted their L2 writing scores, suggesting that L2 writing achievement is not only determined by the students' general English proficiency, but also by their knowledge of their native language.

These two studies exemplify much of the research that has been conducted on the role of general English proficiency in English writing achievement, in the sense that they focus on comparing the influence of L1 and L2 ability on writing achievement. Considering the results of Yigzaw (2013) and the fact that Sasaki and Hirose (1996) found the impact of L2 general proficiency to be only slightly different from the influence of L1 ability, it can be concluded that general English proficiency may not be as strong a predictor of L2 writing proficiency as it is often assumed to be.

With regards to the relationship between of general English proficiency and SRL strategy use, there is a dearth of research linking these two factors in the context of writing. A study by Wang, Schwab, Fenn, and Chang (2013) highlights the relationship between these two factors. Wang et al. (2013) investigated differences between Chinese and German college students in relation to their general English proficiency and self-efficacy and SRL strategy use. The researchers used MANOVA and structural equation modeling to examine these relationships. A measure developed by Oxford (2011), which is based on Oxford (1990) Strategy Inventory for Language Learning was used in this study (Cited in Wang et al., p.175). This questionnaire incorporates SRL strategies such as self-evaluation, organizing and transforming, rehearsing and memorizing, social assistance, self-consequence, goals setting, and reviewing records. Statistically significant differences were not found between the English proficiency scores of Chinese and German students, but the mean scores for both groups were relatively low (of a total score of 100, $M = 66.70$ and $M = 61.99$ for German and Chinese students, respectively), suggesting that the general English proficiency of both groups was not very high and implying more use of SRL strategies for both groups.

However, in relation to the use of SRL strategies, German students were found to use more SRL strategies for persistence, and seeking opportunities than Chinese students. On the other hand, Chinese students used more organizing and transforming strategies, memorizing and rehearsing strategies, self-consequence strategies, and goal setting strategies than German students. However, there were no differences in the use of assistance-seeking and record-taking strategies between the two groups. This finding implies that it is not general language proficiency per se that influences the use of SRL strategies, but it is the degree of similarity between the native language and English that determines the use and reliance on some of the SRL strategies. In part, this interpretation would explain why in the structural equation modeling analysis, Wang et al. (2013) found a negative relationship between general English proficiency and SRL strategies for German students, but a positive correlation between general English proficiency and SRL strategies. Thus, although this study does not clearly show differences in general English proficiency and SRL strategy use, it indicates that in the context of foreign language writing general English proficiency can be either negatively or positively related to SRL strategy use. Further investigation of the role of general English proficiency and SRL strategy use is clearly warranted by the results of this study.

Summary of General English Proficiency Research

Although some have claimed that findings on the relationship between general English proficiency and writing achievement are inconclusive (Vu & Vu, 2013), the research reviewed in this section reveals convergent findings indicating that general English proficiency does predict writing achievement (Sasaki & Hirose, 1996; Yigzaw, 2013). However, a clear understanding of the role of general English proficiency on second- or foreign language writing has not been yet established due to the lack of research linking general English proficiency and other motivational factors, such as writing attitudes, and SRL strategy use. The existing research suggests that learners with higher English proficiency have more positive attitudes towards writing in English (Sasaki and Hirose, 1996), and that general English proficiency is negatively and positively related to SRL strategy use (Wang et al., 2013). However, due to the scarcity of research, it is clear that more research needs to be conducted in order to ascertain these relationships and gain a better understanding of the link between general English proficiency, writing attitude and SRL strategy use.

Gender Research

As researchers have become more interested in the motivational factors influencing writing achievement and SRL, they have also paid more attention to the role that gender plays not only in relation to writing achievement, but also with regards to the motivational factors that are believed to play a key role in writing achievement from the perspective of self-regulated learning. However, it seems that the role of gender has still received modest attention in the field of educational psychology as Pintrich (2000b) has acknowledged that most research on SRL has not explicitly investigated the role of demographic factors. In L1 and L2 writing research, only a few studies have examined the role of gender in writing achievement, but they highlight the important role that gender can have in relation to the motivational factors associated with SRL. In this section, I review findings on the role of gender in relation to SRL strategy use, writing self-efficacy, goal orientation, writing attitudes and general English proficiency. Some of the studies reviewed in previous sections that examine gender differences are included in this review.

Gender and Self-Regulated Learning Strategy Use

Early studies in SRL learning indicate inconsistent results regarding differences in the use of SRL strategies between females and males. Zimmerman and Martinez-Pons (1990) examined gender differences by means of interviews with gifted and regular middle school and high school students. They discovered that girls tend to employ self-monitoring, goal setting, and planning and structuring of the environment much more than boys. In a later study, Ablard and Lipschultz (1998) investigated the relationship between SRL strategy use and achievement with a sample of 222 middle school students in the United States and noted that girls used more self-regulatory strategies than boys when performing difficult reading and writing tasks. In addition, girls reported more personal regulation and optimization of their environment than boys. However, Wolters and Pintrich (1998) did not find any gender differences in self-regulatory strategy use when they investigated the role of self-regulated learning in the academic achievement of middle school students.

In a more recent study, Bozpolat (2016) investigated whether high levels of self-regulated learning can be predicted by gender, academic writing self-efficacy, and general academic average. The sample for the study consisted of 1,398 third year students taking writing courses in a university in Turkey. The results indicated that females used more SRL strategies than males, and that gender was a statistically significant predictor of SRL strategy use. This finding converges with those reported by Zimmerman and Martinez-Pons (1990) who also found that the middle school students in their sample relied on more SRL than their female counterparts. The findings also Ta support the notion that females use more SRL strategies to monitor their learning than males. However, further investigations are necessary to confirm these findings, especially as it relates to writing and SRL strategy use.

Gender and Writing Self-Efficacy

In a review of the literature on the role of self-efficacy on writing, Pajares (2003) noted that most of the research on first-language writing self-efficacy and gender has found that girls report higher self-efficacy beliefs than boys, but that in general, girls have lower levels of confidence in their writing skills as they become older. This notion was supported in Pajares, Valiante, and Cheong (2007) who found that girls reported higher self-efficacy beliefs than boys, but their beliefs diminished as they moved from elementary to middle school, but then remained at the same level in high school. However, in second- or foreign language research, the findings are inconclusive.

Wang, Schwab, Fenn, and Chang (2013) found that there were statistically significant differences in the reported self-efficacy beliefs of both the German and Chinese students that formed their sample. In both groups, females reported higher self-efficacy beliefs than males. However, Hashemnejad et al.'s (2014) study, which examined gender differences in self-efficacy scores at three points in time with a sample of EFL students majoring in English as a foreign language did not find statistically significant differences between the self-efficacy scores of the EFL male and female students. Therefore, this study does not support the notion that the writing self-efficacy beliefs of females drop with age (Pajares, 2003). The inconclusive findings in L1 writing research warrant further investigations to confirm findings in first-language research and to obtain a clear understanding of the role that gender can play in the writing self-efficacy beliefs of L2 learners of English as a foreign language.

Gender and Goal Orientation

Most of what is known about the relationship between gender and goal orientation is derived from studies in educational psychology exploring the relationship between goal orientation and academic achievement, as goal orientations are often considered domain-general traits. As a result, there is a dearth of research exploring the relationship between these two variables in writing.

In educational psychology research exploring this relationship has produced inconclusive results. An early study conducted by Anderman & Young (1994) reported that girls are more mastery-oriented and less-performance oriented than boys. This finding was confirmed in a more recent study by Peterson and Kaplan (2016), who, with a sample of 442 seventh-graders enrolled in a school in Israel, found that boys were more likely to endorse performance approach and avoidance goals than girls, and that girls were more likely to endorse mastery goals than boys. However, in their review of literature on goal orientation, Meece, Glienke, and Burg (2006) concluded that there was “no clear pattern of gender differences in students’ achievement goal orientations” (p. 360). The current study addressed these gaps in the literature, by further exploring the role of gender in the context of writing goal orientations.

Gender and Writing Attitudes

Three studies reviewed earlier in this chapter provide evidence of gender differences with regards to writing attitude in first-language writing research. Graham, Berninger, and Fan (2007), noted that girls had more favorable attitudes towards writing than boys, but the differences were not statistically significant. In a more recent study, Graham, Berninger and Abbot (2012) found this relationship to be statistically significant with first graders. In addition, in a sample of 1,266 elementary, middle, and high school students, Pajares, Valiante and Cheong (2007) found that girls reported greater value for writing than boys in all grades. Clearly, when it comes to writing, females have more favorable attitudes than males, and it is often assumed that their positive attitudes are related to their writing achievement (Pajares, 2003). However, as with many of the other variables reviewed in this section, in L2 writing research this relationship has not received much attention. This gap is also addressed in the current study.

Gender and General English Proficiency

To date, many of the of the studies that have examined the relationship between gender and general English language proficiency have revealed stronger performances by females compared to males, although these differences tend to be small. According to James (2010), in 2004 females scored slightly higher on the International English Language Testing System (IELTS), which assesses proficiency in listening, reading, writing, and speaking. Similar results have been reported for the Test of English as a

Foreign Language Internet-Based Test (TOEFL iBT). The mean test scores for females were higher than those for males in the listening, speaking, and writing sections, but the reverse was true for the reading section of the tests that were conducted in 2005 and 2006. Females were also found to perform marginally better than males in the Michigan English Language Assessment Battery, and the Canadian English Language test (James, 2010, p. 388). To confirm these results, James (2010) collected data for two years on the scores of students in the Accuplacer ESL test, a web-based program marketed by the College Board that assesses the English skills in four subtests targeting reading skills, language usage, sentence meaning, listening and writing. The results indicated that females scored higher than males with significant differences in language usage, reading skills and sentence meaning, but males scored marginally higher in listening and writing. This result indicates that while females perform better in proficiency exams than males, the differences may be attributed to particular skills areas. Considering all the studies reviewed in this section, it is possible to conclude that females perform better in general English proficiency tests as they use more SRL strategies, hold higher self-efficacy beliefs, are more likely to be motivated by mastery and approach avoidance goal orientation, and have more positive attitudes than males.

Summary of Gender Research

In this section, I have reviewed research that has examined gender in relation to SRL strategy use, self-efficacy, goal orientation, writing attitudes, and general English proficiency. A clear understanding of the role of gender has not yet been established in relation to the use of SRL skills, self-efficacy, and goal orientation. While some studies indicate that females use more SRL strategies (Ablard & Lipschultz, 1998; Bozpolat, 2016; Zimmerman & Martinez-Pons, 1990), have higher self-efficacy beliefs (Pajares, Valiante & Cheong, 2007; Wang et al., 2013), and hold mastery and approach goal orientations (Anderman & Young, 1994), other studies do not confirm these findings (Hashemnejad et al., 2014; Meece et al., 2006; Peterson & Kaplan, 2016; Wolters & Pintrich, 1998). However, results consistently indicate that females hold more positive attitudes toward writing (Graham et al., 2012; Graham et al., 2007; Pajares et al., 2007) and have higher general English proficiency skills, as assessed by standardized English proficiency tests (James, 2010). Therefore, more research is needed to better understand the role of gender and to confirm the findings of the studies reviewed in this section.

Gaps in the Second-Language Writing Literature

In the literature review of research conducted in educational psychology, L1 and L2 writing research and that has examined the relationship of between SRL strategy use, motivational, proficiency, and demographic factors in SRL learning, I have identified five main gaps that need to be addressed in L2 writing research.

The first gap is related to the lack of studies in L2 writing that examine the relationship among general English proficiency, writing attitude, writing self-efficacy, goal orientation, SRL strategy use, and their combined or independent contribution to writing achievement from the perspective of SRL. Most of the researchers whose studies were reviewed in the previous section examined the relationship between one, two, or three of these factors, but there is only a handful of studies that have examined the role of general English proficiency in combination with SRL strategy use and key motivational factors associated with SRL, even when it has been reported that general English proficiency makes an important contribution to writing achievement (Yigzaw, 2013). The only exception is Sasaki and Hirose (1996) who examined general English proficiency in conjunction with other motivational variables and cognitive and metacognitive strategies, which can be considered as constituting only part of SRL strategies. As a result of this gap, it is not clear whether general English proficiency is a stronger or weaker predictor of writing achievement when compared to SRL strategy use and self-efficacy beliefs, which in turn, have been identified as playing a vital role in writing achievement in both L1 and L2 writing research (Farsani et al., 2014; Hetthong & Teo, 2013; MacArthur et al., 2014; Mehrabi et al., 2016; Pajares & Valiante, 1997, 1999; Prat-Sala & Redford, 2012; Wolters, 1998, 1999; Woodrow, 2011; Zhao & Dong, 2011). As general English proficiency positively predicts writing achievement, it is important to assess its contribution to writing achievement in combination with other SRL and motivational variables.

Derived from the first gap is also the lack of a clear understanding of the relationship between writing self-efficacy, goal orientation, writing attitudes and SRL strategy use in L2 writing research. In first-language writing research, studies have consistently reported a positive relationship between these motivational factors and SRL strategy use. Research in L2 writing has confirmed some of these findings. For example, researchers have reported that students with higher self-efficacy beliefs use more cognitive and metacognitive strategies (Chea, 2012; Jahangard & Zandieh, 2010), but only one study has reported more SRL strategy use among highly efficacious students (Zhao & Dong, 2011). In relation to goal-orientation, it has been reported that students with mastery goal orientation use more SRL strategies (Kaplan et al., 2009). There is also evidence that writing attitude is related to SRL strategy use (Rezaei & Rassaei, 2015). However, the number of studies exploring the relationships between these factors remains scarce; therefore, more research is needed to confirm these findings.

The second gap is related to the research methodology used in L2 writing research. Correlation seems to be the preferred method of statistical analysis in studies examining the relationship between SRL and writing achievement (e.g., Farsani et al., 2014), self-efficacy and writing achievement (e.g., Chea & Shumow, 2014; Hetthong & Teo, 2013; Hashemnejad et al., 2014), goal orientation and writing achievement (e.g., Farsani et al., 2014), attitudes, writing achievement, and other variables (Hammann, 2005; Hashemian & Heidari, 2013). While correlations are informative, they do not allow for the interpretation of casual relationships between the variables. More advanced research methods, such as structural equation modeling, which was used in only four of the studies reviewed in the literature (e.g., Lin et al., 2015; Tadlock, 2016; Zhao & Dong, 2011; Zimmerman & Bandura, 1994) are necessary to better understand the combined and independent contribution of each of these factors to L2 writing achievement.

The third gap concerns the lack of a clear understanding of the influence of SRL strategy use and self-efficacy beliefs on writing achievement. The lack of understanding is derived from the inconsistency of the results in L2 writing research. For example, some studies indicate that SRL is related to and predicts L2 writing achievement, confirming findings in L1 writing research (e.g., Mehrabi et al., 2016; Zhao & Dong, 2011), however, other studies do not confirm this relationship (e.g., Farsani et al., 2014; Lin et al., 2015). The same is true in relation to self-efficacy beliefs. Research exploring the influence of self-efficacy in writing achievement has produced conflicting results reporting that some learners with high self-efficacy beliefs perform well in writing tasks (e.g., Chea & Shumow, 2014; Hetthong & Teo, 2013; Woodrow, 2011), but others perform poorly in spite of their self-efficacy beliefs (e.g., Hashemnejad et al., 2014; Zhao & Dong, 2011).

The fourth gap derives from a lack of understanding of the influence of writing experience on SRL strategy use and self-efficacy beliefs. Although research in SRL (e.g., DiBenedetto & Zimmerman, 2010; Wolters, 1998, 1999; Zimmerman & Martinez-Pons, 1986) clearly shows that more experienced learners use more SRL strategies than their counterparts, most of what we know about the profile of successful writers comes from findings in L2 research that have adopted a cognitive, rather than an SRL perspective (e.g., Conrad & Goldstein, 1999; Ferris, 1997, 2003; Goldstein, 2004; Hyland, 1998). Of the studies reviewed in this section, only two provide insights into the role these variables play in individual differences on the use of SRL strategies (e.g., Mehrabi et al., 2016; Sasaki & Hirose, 1996), but of these two studies, only Mehrabi et al. (2016) examined SRL strategies. At the same time, a clear understanding of how levels of self-efficacy change as a result of more experience with writing has not been established in either first- or second-language. In first-language writing, some research indicates that self-efficacy increases with writing experience and grade level (e.g., Shell, et al., 1995), but other research shows that as students gain more experience in writing and reach upper grade levels, their self-efficacy beliefs decrease (e.g., Pajares & Valiante, 1999). However, most of this research has been conducted with school children, and although early research in writing has shown a similar pattern at the college level (Meier et al., 1984, Cited in Williams & Takaku, 2011), more research is necessary in L2 writing to confirm these results and better understand how writing experience and writing achievement are related to individual differences in self-efficacy beliefs.

The fifth, and final gap, is related to the lack of understanding of gender in relation to the SRL strategy use, goal orientation, writing attitudes, and language proficiency. Some studies report conflicting results in relation to the influence of gender. For example, in relation to SRL use some studies have reported that females use more SRL strategies than males (e.g., Ablard & Lipschultz, 1998; Zimmermann & Martinez-Pons, 1990), but other research has reported that males are more self-regulated than females (e.g., Wolters & Pintrich, 1998). Studies examining goal orientation and gender also report divergent results; some indicated that females are more mastery-oriented and less performance-oriented than males (e.g., Anderman & Young, 1994; Peterson & Kaplan, 2016), but others reported lack of clear patterns of gender differences (e.g., Meece et al., 2006). In addition, although gender differences have been consistently reported in relation to self-efficacy and writing attitudes in first-language writing research (e.g., Graham et al., 2007; Graham et al., 2012; Pajares, Valiante & Cheong, 2007), most of this research has been conducted with school children, and only one study in L2 writing has confirmed gender differences in self-efficacy beliefs at the college level (e.g., Wang et al., 2013). In relation, to gender and general English proficiency, there is evidence that females perform better than males, but only marginal differences have been reported (e.g., James, 2010). Therefore, further investigation of gender differences in relation to these variables is necessary.

Purposes of the Study and Research Questions

By focusing on non-native English speakers enrolled in two types of classes in the First Year Writing Program of an American university in Japan, my main goal is to address the gaps in the literature on second- and foreign language writing and contribute to a better understanding of the relationship between SRL, motivational, proficiency, and demographic factors in L2 writing. I seek to do so by fulfilling four main purposes.

The first purpose is to examine the potential, independent, combined, or mediating contribution of students' general English proficiency, writing attitude, writing self-efficacy, goal orientation, and SRL strategy use to writing achievement using structural equation modeling, which allows for the interpretation of causal relationships, unlike correlation and regression analyses. With this purpose, I address the first three gaps in the literature discussed in the previous section: (a) the dearth of research combining all these variables, (b) the lack of understanding regarding the predictive strength of general English proficiency when compared to SRL strategy use and self-efficacy beliefs, and (c) the limited number of research studies using structural equation modeling to examine these relationships. By addressing these gaps, the current study will enhance our understanding of the causal relationships among SRL, motivational, and proficiency factors, as well as their influence on writing achievement. At the same time, it would help to confirm the applicability of the theoretical assumptions of SRL and models of SRL to L2 writing achievement.

The second goal is to examine whether the use of SRL strategies and self-efficacy beliefs influence the participants' level of writing achievement. By focusing on individual differences, the current study addresses the third gap discussed in the previous section related to our lack of understanding of whether L2 writing achievement is determined by SRL strategy use and self-efficacy beliefs. In this way, the current study contributes to a better understanding of the factors that affect individual differences in writing achievement, and helps to ascertain whether these two important factors are as important in L2 writing as they are in SRL and L1 writing research.

The third goal is to examine whether writing experience influences SRL strategy use and self-efficacy beliefs. Through the examination of individual differences in writing experience, the current study addresses the fourth gap in the L2 writing literature which concerns our lack of understanding of the role that writing experience plays in individual differences in SRL strategy use and self-efficacy beliefs. By focusing on writing experience the current study can contribute to expand our knowledge of the role of writing experience in the context of SRL in writing, and it can also contribute to clarify the role that writing experience plays in relation to self-efficacy beliefs.

Finally, the fourth purpose of the current study is to examine gender differences in the hypothesized model of the relationships between SRL strategy use, writing self-efficacy, goal orientation, writing attitude, and general English proficiency. As discussed in the previous sections, research on the influence of gender has rendered conflicting results in relation to some of these factors (SRL strategy use and goal orientation), has focused mostly on school children to examine gender differences in self-efficacy beliefs, and has reported marginal gender differences in relation to general English proficiency. Thus, the current study will contribute towards enhancing our understanding of gender differences.

With these four goals in mind, I address the following research questions in the current study:

1. To what extent do students' general English proficiency level, writing attitude, academic writing self-efficacy, goal orientation, and SRL strategy use, relate to each other and influence students' writing achievement in their last essay?

Based on findings from existing research, and to investigate relationships between these variables, the structural model of L2 first-year writing achievement displayed in Figure 1 was hypothesized. In the hypothesized writing achievement model SRL Strategy Use, Academic Writing Self-Efficacy, and Goal Orientation are latent variables with measured and latent variables defining them. Writing English Proficiency and Writing

Attitude are measured variables, and Essay Grade is the outcome variable. Five main hypotheses for the influence of the five variables an each other and on writing achievement were postulated:

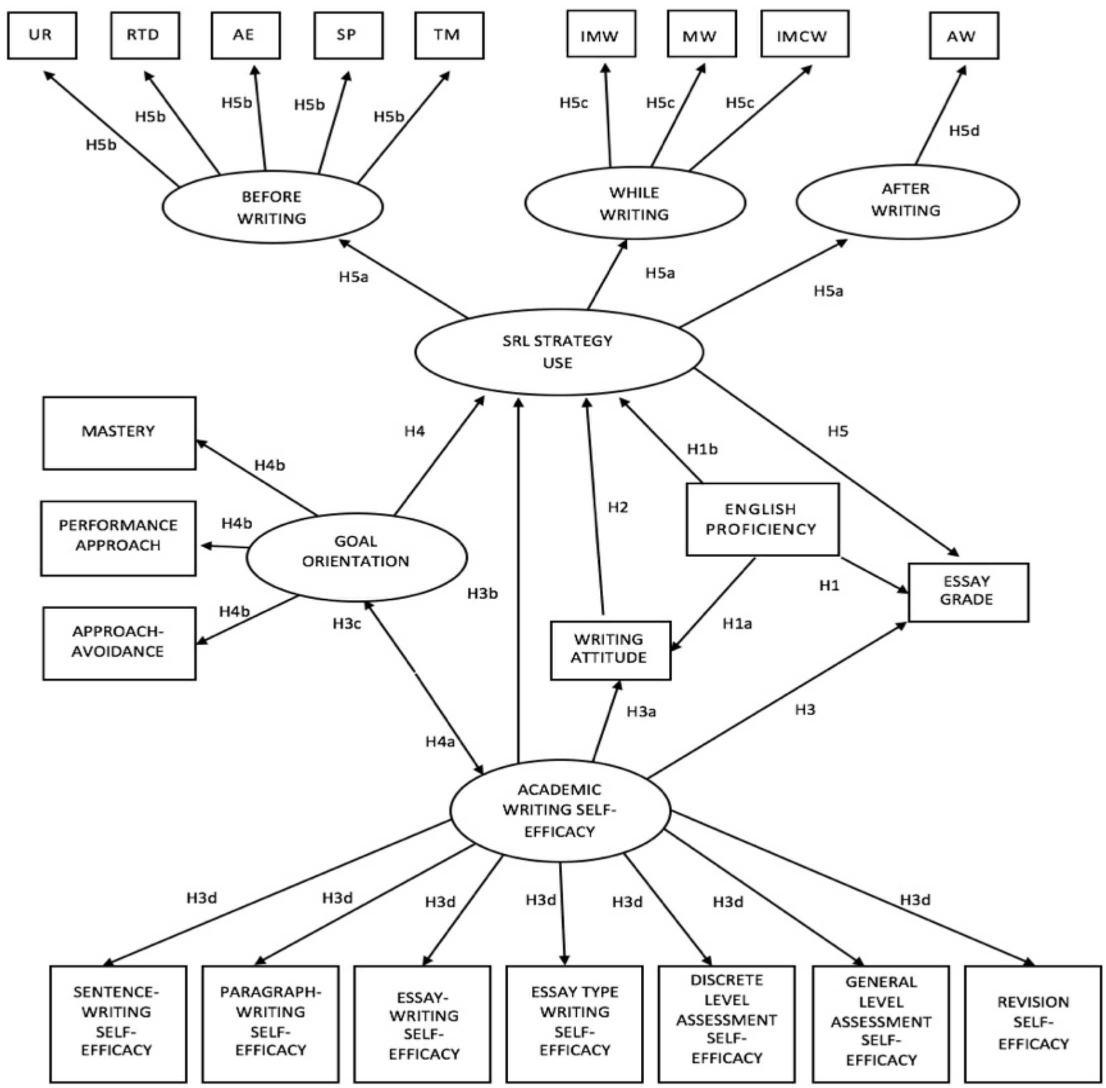

Figure 1. Hypothesized model of L2 first-year writing achievement. Circles represent latent variables; Squares represent measured variables; Essay Grade = Outcome variable; UR = Understand Requirements; RTD = Reduce Task Difficulty; AE = Adjust Environment; SP = Solve Problems; TM = Time Management; IMW = Increase Motivation to Write; IMCW = Increase Motivation to Continue Writing; MW = Monitor Writing; AW = Assess Writing.

Hypothesis 1. General English proficiency level directly impacts Essay Grade (H1) or indirectly through its influence on Writing Attitude (H1a) and SRL Strategy Use (H1b). Second-language acquisition research has consistently established a positive link between general English proficiency level and writing achievement (Sasaki & Hirose, 1996; Yigzaw, 2013). In terms of attitudes, Sasaki and Hirose (1996) found significant differences in the attitudes towards academic writing of high and low proficiency level writers, indicating a positive relationship between general English proficiency and writing attitude. They also found a relationship between general English proficiency and the use of cognitive and metacognitive strategies.

Hypothesis 2. Writing Attitude has a positive impact on SRL Strategy Use (H3a). Findings from research in SRL indicate that value beliefs and positive attitudes toward writing are related to the use of SRL learning strategy (e.g., Pintrich & De Groot, 1990; Wolters & Pintrich, 1998). Based on these findings, Pintrich and Zusho (2002, p. 271) have asserted that interest and value beliefs in domains of academic study are related to SRL strategy use. In addition, Hammann (2005) found a strong relationship between positive attitudes towards writing and the use of cognitive and metacognitive strategies.

Hypothesis 3. Academic Writing Self-Efficacy subsumes seven constructs labeled H3d in the figure: Sentence-Writing Self-Efficacy, Paragraph-Writing Self-Efficacy, Essay-Parts Writing Self-Efficacy, Essay Type Writing Self-Efficacy, Discrete Level

Assessment Self-Efficacy, General Level Assessment Self-Efficacy, and Revision Self-Efficacy. These constructs fulfill criteria for self-efficacy scales in specific domains as they assess writing in the context of the current study, and include items that correspond to the outcome variable being measured (Bandura, 1986). Academic Writing Self-Efficacy is hypothesized to influence writing achievement, or to exert an indirect influence through its impact on goal orientation, and SRL strategy use. In both first- and second-language writing studies, researchers have reported a direct influence of self-efficacy on writing achievement (e.g., Chea & Shumow, 2014; Hetthong & Teo, 2013; Pajares & Valiante, 1997, 1999; Pajares et al., 1999; Pintrich & De Groot, 1990; Prat-Sala & Redford, 2012; Woodrow, 2011; Zimmermann and Bandura, 1994). Research findings also indicate that writing attitudes are positively related to academic writing self-efficacy (e.g., Pajares & Valiante, 1999; Pajares et al., 2007; Rezaei & Rassaei, 2015), therefore, it is plausible to assume that academic writing self-efficacy also influences writing attitudes (H3a). There is also evidence that higher levels of writing self-efficacy beliefs result in more use of SRL strategies (e.g., Pintrich & De Groot, 1990; Zhao & Dong 2011; Zimmerman & Martinez-Pons, 1990) in both first- and second-language writing research (H3b). Finally, a relationship between writing self-efficacy and goal orientation (H3c) has also been reported in writing research (e.g., Chea & Shumow, 2014; Pajares et al., 2000).

Hypothesis 4. In the model, Goal Orientation subsumes three types of Goal Orientation identified in the literature: Mastery, Performance-Approach and Performance-

Avoidance (Midgley et al., 2000). In the model, they are labeled H4b. Goal Orientation is assumed to have a direct impact on SRL Strategy Use (H4), and Academic Writing Self-Efficacy (H4a) and to indirectly influence Essay Grades through its influence on SRL Strategy Use and Academic Writing Self-Efficacy. Findings in writing research indicate that goal orientation predicts writing self-efficacy (e.g. Kaplan et al., 2009; Pajares & Cheong, 2003; Pajares et al., 2000) and that all three types of goal orientation, mastery, performance-approach, and approach avoidance, (e.g., Tadlock, 2016) are related to SRL strategy use (H4).

Hypothesis 5. SRL Strategy Use subsumes three latent variables labeled H5a in the model: Before Writing, While Writing, and After Writing, which reflect the three stages of self-regulation identified in Zimmerman and Kitsantas (2007) model of Socio Cognitive SRL in Writing and Pintrich's (2004) Framework of SRL for the College Classroom. Each of these three latent variables is defined by SRL strategies identified in the literature (e.g., Zimmerman & Martinez-Pons, 1986; Wolters, 1998, 1999). Before Writing subsumes all the strategies labeled H5b: Understanding Requirements (UR), Reduce Task Difficulty (RTD), Adjust Environment (AE), Solve Problems (SP), and Time Management (TM). While Writing includes all SRL strategies labeled H5c in the model: Increasing Motivation to Write (IMW), Monitoring Writing (MW), and Increasing Motivation to Continue Writing (IMCW). After Writing includes the variable Assess Writing, labeled H5d in the model. SRL Strategy Use was hypothesized to have a direct influence on Essay Grades (H5) and mediate the influence of general English

Proficiency (H1), Writing Attitudes (H2), Academic Writing Self-Efficacy (H3), and Goal Orientation (H4) on writing achievement. In the literature in first- and second-language writing, SRL strategy use has been found to predict writing achievement (Mehrabi et al., 2016; Wolters, 1998, 1999; Zhao & Dong, 2011) and to be related to general English proficiency (e.g., Sasaki & Hirose, 1996), writing attitudes (e.g., Hammann, 2005), academic writing self-efficacy (e.g., Pintrich & De Groot, 1990; Zhao & Dong 2011; Zimmerman & Martinez-Pons, 1990), and goal orientation (Kaplan et al., 2009; Farsani et al., 2014). Therefore, it is plausible to assume that SRL strategy use will mediate the influence of these variables.

2. To what extent do the relationships in the hypothesized Model of L2 First-Year Writing Achievement vary across males and females?

Hypothesis 1: There will be differences between males and females with regards to general English proficiency, writing attitude, writing self-efficacy, goal orientation and SRL strategy use. In the literature, some studies have reported differences favoring females on the use of SRL strategies (e.g., Ablard & Lipschultz, 1998; Zimmermann & Martinez-Pons, 1990), but others have indicated differences favoring males (e.g., Wolters & Pintrich, 1998). Studies examining goal orientation and gender also report divergent results; some indicated that females are more mastery-oriented and less performance-oriented than males (e.g., Anderman & Young, 1994; Peterson & Kaplan, 2016), but others reported lack of clear patterns of gender differences (e.g., Meece et al., 2006). In relation to gender and general English proficiency, there is evidence that females perform better than males, but only marginal differences have been reported (e.g., James, 2010). The conflicting results indicate that the influence of gender is worth further investigation.

3. To what extent do SRL strategy use and academic writing self-efficacy differ across student's level of writing achievement?

Hypotheses 1: Based on research findings in educational psychology, SRL, and writing, I hypothesize that high-achieving students will report more use of self-regulatory strategies (e.g., DiBenedetto & Zimmerman, 2010; Farsani et al., 2014; Mehrabi et al., 2016; Wolters, 1998, 1999; Zhao & Dong, 2011; Zimmerman & Martinez-Pons, 1986) and more increased levels of self-efficacy beliefs (e.g., Chea & Shumow, 2014; Hetthong & Teo, 2013; Pajares & Valiante, 1997, 1999; Woodrow, 2011) than low-achieving students.

4. To what extent do SRL strategy use and academic writing self-efficacy beliefs differ in term of student's experience taking writing courses?

Hypothesis 1: Based on research findings in educational psychology and writing, I hypothesize that students with more writing experience will report more use of SRL strategies (e.g., Sasaki & Hirose, 1996; Zimmerman & Martinez-Pons, 1986; Wolters, 1999) and higher self-efficacy beliefs (e.g., Shell et al., 1995), than students with less writing experience.

Chapter 2 Summary

This chapter began with the definition of terms relevant to the current study. Following the definition of terms, I reviewed the assumptions of two socio cognitive models of self-regulation in writing and self-regulation in the college classroom that form the theoretical basis of the current study (Pintrich, 2004; Zimmerman & Kitsantas, 2007). Subsequently, I reviewed research in first- and second-language writing in relation to all the factors that are examined in the study: SRL Strategy Use, Writing Self-Efficacy, Writing Attitude, Goal Orientation, Gender, and English Proficiency Research. After reviewing the research and summarizing the findings, I discussed the gaps identified in the literature. The purposes of the study aimed at addressing the gaps were discussed after that. Finally, I presented the research questions that motivated the study and the hypothesis postulated for each research question.

CHAPTER 3

METHODS

In this chapter I describe the methods used in this study. The chapter is divided into three main sections: Participants and Context of the Study, Variables and Instruments, and Procedures. In the Participants and Context of the Study section, an overview of the participants and their context is provided. In the Variables and Instrumentation section, I explain the instruments that were developed and how the variables were measured. Finally, in the Procedures section, I explain data collection procedures, rationale for selecting data for analysis, procedures for data analysis for each research question, and I provide an overview of the Rasch measurement procedures and rationale, and of the assumptions of structural equation modeling.

Participants and Context of the Study

The participants were 170 students enrolled in different sections of two levels of first-year writing classes at an American university in Japan. Among the 170 participants, 73 (51.1%) were male and 97 (48.9%) were female; 113 were native speakers of Japanese (66.4%) and 57 (34.5%) were speakers of other languages including Chinese, Korean, French, Dutch, Swedish, Portuguese, Spanish, Vietnamese and Arabic; 130 (60.5%) were first-year students, 25 (11.6%) were second-year students and 16 (7.4%) were third-year students. Their iBT TOEFL scores ranged from 59 to 109. In terms of their study and work load, 49 (22%) of the participants were only enrolled in the first-year writing course, while 121 (71.1%) were taking one to three courses in addition to the writing course. 83 (38.65%) did not have a part-time job at the time, but 64 (58.4%) worked from 1 to 20 hours a week, and 11 (6.4%) worked for more than 20 hours a week.

In addition to providing demographic information, the participants were also asked questions related to their experience with academic writing, perceptions of their writing skills, grade goals, and attitudes toward different components of the drafting process. In terms of their experiences with academic writing, 45 (26.4%) had not taken any academic writing courses prior to this time; 67 (39.5%) had taken one; 27 (15.9%) had taken three; and only 31 participants (18.2%) had taken more than three courses. Self-assessing their own academic writing skills, 39 (18.1%) indicated poor skills; 68 (31.6%) fair; 52 (24.2%) average skills; 10 (5.8%) good, and only 1 (0.5%) excellent. In relation to their grade goal for the course, 58 (27%) indicated they would be satisfied if they obtained an A grade; 83 (38.6%) a B grade; 20 (9.3%) a C grade; and 9 (4.7%) a C-, the minimum-passing grade. Finally, when asked about the importance of each draft of the drafting process, the majority reported that the Final Draft is the most important because it is the one that receives a grade (See Table 1 for the frequency their responses).

The participants were enrolled in different sections of two levels of ESL writing courses offered by the university: 90 (52.9%) were enrolled in the introductory course and 80 (47.1%) in the standard course. At the university, placement of students in the courses is determined using the students' scores on the university's placement exam, which has a reading-grammar test with a scale from 1-10, and a persuasive-essay writing essay test with a scale from 1-6. Two readers assess the essays scores and the sum of their scores ranging from 2 to 12 is used for placement decisions. A matrix called Evaluation Placement Scale combining scores from the grammar-reading test and the average score awarded by two readers in the essay test is used to place students in either the introductory class or regular class (See Appendix A for a copy of the Evaluation Placement Scale). Students with reading-grammar scores of 1 to 8 but essay scores of 2 to 6 are placed in the introductory writing class, while students with scores of 2 to 10 in the reading-grammar test but essay scores of 7 to 9 are placed in the standard class. Students with higher scores are exempt from the writing requirement.

Table 1. *Frequency of Responses for Attitudes Towards Elements of the Writing Process*

Scale	Outline	Draft 1	Draft 2	Final Draft
Not important	4 (1.9%)	1 (0.5%)	1 (0.5%)	0 (0%)
Slightly important	31 (14.4%)	34 (15.8%)	20 (9.3%)	3 (6.5%)
Important	53 (24.7%)	70 (32.6%)	85 (39.5%)	14 (71.6%)
Very Important	83 (38.6%)	66 (30.7%)	65 (30.2%)	154 (79.5%)

These two writing courses are sequential and required for graduation. If students fail to pass each one of these courses after their third attempt, they are dismissed from the university. However, they can select sections based on their schedules, and instructor preference. The university offers an average of three sections for each course, with a maximum enrollment of fourteen students per class in the fall, spring and summer terms. The fall and spring terms last 14 weeks, while the spring terms lasts 10 weeks.

In both courses students are taught academic writing following a process-approach, which requires them to complete three drafts and an outline for each essay. Outlines are not required during the summer term, as it is shorter than the others. In both courses the objectives, course requirements, and grading standards are similar (See Appendices B and C for a sample syllabus for each class). However, the number of essays students are required to write varies. While students in the introductory course write four essays, the students in the regular course only write three essays.

When the data were collected, the first essay assignment for both classes required students to read two articles selected by the instructor and to evaluate the arguments made by the authors in the articles. As part of the assignment, students were required to include summaries of the articles before evaluating the arguments. For the final essay, students wrote a persuasive essay on a topic given by the instructor. The assignment required students to do extensive research on their own, defend their position on the topic, and discuss at least one counterargument. In the context of the First Year Writing Program (FYWP) at this university, the final essay requires the most effort and dedication from the students and it is considered to be similar to a final exam. Like in a final exam, students are expected to show evidence of their growth as writers in relation to the course objectives, which include: writing well-organized essays and well-focused paragraphs, providing in-depth discussion of the topic, synthesizing information from different sources, integrating quotes in the discussion and indicating their significance, and mastering the conventions of MLA format.

In order to help students achieve these goals, instructors explicitly teach students the key components of academic essays, and their purpose, as well as the elements of each of these components. For example, for teaching how to write introductions, instructors explicitly teach the elements of an engaging introduction—hook, background information, issue, and thesis statements, and provide opportunities for students to practice identifying these elements in model introductions before requiring students to write their own introduction. A similar approach is followed to teach body paragraphs, conclusions, and MLA format. Handouts that have been developed by the instructors and the program director are shared among instructors and used for explicitly teaching and providing practice on the key elements of academic essays (See Appendix D for copies of instructional handouts used in both classes).

In terms of essay grading, a rubric assessing quality of content, organization, MLA use, grammar, and revision across drafts is used for both courses (See Appendix E for a copy of the rubric). For their classes, instructors evaluate individual essays, and exchange portfolios of their students' work with other instructors during midterm and at the end of the term. It is necessary for second readers to evaluate portfolios, as students are expected to pass both the course work and the portfolio in order to successfully complete the courses.

Using surveys, I obtained self-report data from the students enrolled in ten different sections of the introductory course and twelve different sections of the standard course during the Fall 2013, Spring 2014, Summer 2014, and Fall 2014 academic terms. The introductory courses where taught by two instructors who hold master degrees in TESOL and have more than five years of experience teaching in the program, and I taught all sections of the standard course. Prior to the administration of the surveys, the students were asked to sign consent forms that explained the purpose of the study, and the benefits of participating in the study (See Appendix F for a copy of the consent form). All the students signed the consent forms. The students who were absent on the day that the consent form was given in class signed the forms when they returned to class.

Variables and Instrumentation

I selected six variables as the focus of this study: Academic writing self-efficacy, goal-orientation, writing attitude, SRL strategy use, and general academic English proficiency, as measured by the TOEFL iBT exam. To examine some of these variables and obtain information about the students, I developed three instruments and adapted one existing instrument. The development of the instruments began in the fall of 2012 and continued through the spring of 2013. One of my dissertation supervisors at the time reviewed all the surveys and changes were made based on his advice. Also, to check the clarity of the items and instructions, I asked three former students to complete the measures. After revising the questionnaires based on feedback, they were piloted with two of my classes in the spring 2013 term. Further revisions were made based on the pilot results. Hereafter, I provide more detailed descriptions of each of the variables and the instruments that were developed to assess them.

Class Questionnaire

The class questionnaire has 14 items, and it was designed to obtain demographic information about the students. It includes questions about the students' name, gender, native language, TOEFL and university placement scores, number of academic writing courses taken prior to the time the data were collected, part-time jobs and number of working hours, number of academic courses taken, and university status. It also asks about students' self-assessment of their writing skills, areas students want to improve while taking the class, grade goals for the course, and perceptions about the importance of each stage of the writing process: outline, draft 1, draft 2, and final draft. Questions that required participants to select one statement among several options and questions with 4-points Likert scales were included in this part of the questionnaire. For example, question 1 asked students to select the statement that best describes their grade goal for the course. The options ranged from: *To pass the course with an excellent grade (A- to A)* to *To pass the class even it if is with the lowest passing grade* (See Appendix G for a copy of the Class Questionnaire).

Academic Writing Self-Efficacy Survey

To examine academic writing self-efficacy I developed an instrument that matches the objectives of the program. This instrument was designed to assess students' beliefs about their abilities to write in English, identify problems in their essays, and revise problems in their essays. I paid careful attention to ensure that I followed Bandura's (1986) guidelines (as cited in Pajares, 2003) on the development of self-efficacy scales while developing this instrument. In particular, I ensured that this instrument: (a) provided multiple items of varying difficulty, (b) assessed writing in this particular context, (b) listed items that were prototypical of academic essay writing, worded in terms of *can*, and (c) included only items that corresponded to the outcome being measured—students' essay scores.

This 50-items instrument included seven constructs: Sentence-Writing Self-Efficacy, Paragraph-Writing Self-Efficacy, Essay-Parts Writing Self-Efficacy, Essay-Type Writing Self-Efficacy, Discrete Level Assessment Self-Efficacy, General Level Assessment Self-Efficacy, and Revision Self-Efficacy, all of which require students to report their level of confidence for performing the skills using a Likert scale from 1 (*Not at all confident*) to 5 (*Very confident*). For example, Section 1, Writing Sentences, assessed students' beliefs about their abilities to write proper English sentences, such as *I can write simple sentences with proper punctuation,* and *I can write grammatically correct complex sentences.* Section 2, Writing Paragraphs, was focused on students' confidence to write proper paragraphs. A sample item from this section is: *I can write coherent paragraphs,* and a representative item from Section 3, which assessed revision skills confidence, included: *When revising, I can effectively improve the grammar mistakes in my essay* (See Appendix H for a copy of the Academic Writing Self-Efficacy survey). The survey was validated using Rasch analysis with a sample of 30 students during the summer of 2013. Based on the results, items that appeared problematic were rephrased and a few items were added. These items are marked with asterisks in Appendix H.

Self-Regulated Learning Strategy Use Questionnaire

To assess students' use of SRL strategies, I developed a Strategy Use survey that was used to measure students' SLR strategy use at the four stages of the writing process: Outline, Draft 1, Draft 2, and Final Draft (See appendices I to L for copies of each survey). The survey, replicated four times for each stage, included four sections: Before Writing, While Writing, After Writing, and Task Completion. Each section included two to four questions, for a total of 9 questions in all sections, which prompted students to the selection of 5-10 strategies related to the question. Using a dichotomous scale of *yes* (1) and *no* (0), students indicated whether or not they had used a specific strategy. For example, question 1 asked students to indicate what they did to ensure that they understood the essay requirements and offered a selection of nine strategies. Sample strategies for question 1 included: *I talked to my friends about it*, *I asked my teacher for help*, and *I reviewed the essay prompt.*

The first section of the strategy survey, Before Writing, asks students to select the strategies they used to: (a) understand the essay requirements, (b) reduce the difficulty of the task, and (c) motivate themselves to begin writing. The second section, While Writing, requires students to select the strategies used to: (d) monitor their writing as they wrote, (e) adjusting their environment, (f) solve problems while writing, and (g) boost their motivation when they felt they were losing concentration or motivation. In the third section, After Writing, students selected strategies for: (h) revising their drafts, and (i) evaluating their efforts. Finally, in the last section, Task completion, students selected the strategies they had used to ensure they completed the assigned essay draft on time.

The survey was divided into these four sections to approximate the phases of self-regulation identified in Zimmerman and Kitsantas' (2007) model of self-regulation in writing and Pintrich's (2004) model of self-regulation in academic achievement. Both of these models emphasize that learners engage in self-regulation at different stages: the forethought phase, the performance phase, and the self-reflection phase (Zimmerman & Kitsantas, 2007). The first stage occurs before the learners engage in the task and includes efforts to set goals, motivate themselves, and activate metacognitive knowledge. The performance phase refers to the self-regulation strategies that learners use while performing the task, which include monitoring performance, select and manage strategies to complete tasks, make modifications to the environment, and exercise self-control to maximize concentration and motivation, among others (Zimmerman, 2002). The final phase of self-reflection occurs after the learners complete the task. At this stage, learners monitor the results, and make cognitive judgments about their work and about themselves in terms of how satisfied they are with the work they have completed (Pintrich, 2004; Zimmerman, 2002).

In addition, these models of SRL emphasize that self-regulation can occur in different areas including person, behavior, and environment (Zimmerman & Kitsantas, 2007) as well as cognition and affect (Pintrich, 2000b), and that a great number of different strategies are used by learners to self-regulate each of these areas. For example, learners use strategies to help them complete their tasks, such as positive self-talk promising extrinsic rewards, or taking breaks when regulating their motivation and affect. To regulate behavior, learners select strategies to manage their time, structure their environment, seek help, and monitor their efforts. Finally, when learners regulate their environment, they use strategies that allow them to make the task easier, or more interesting and valuable to them. As the models emphasized self-regulation of different areas using a wide variety of strategies, I organized the Strategy Use survey using focus questions that assess the use of different kind of strategies that are relevant to the situation asked in the questions. I did not limit the selection of strategies by type of strategy (i.e., cognitive, metacognitive, motivational) because as emphasized in the SRL learning literature, the use of SRL depends on the stage of task development, as well as on the area or situation that needs to be regulated. Thus, I decided that it was best to include different types of strategies for students to select for each focus question. For example, question 4 asked students to indicate what they did to increase their motivation while writing. Some of the strategies included: *I told myself I could rest* (self-talk; motivational strategy), *I thought of the consequences if I did not persevere* (metacognitive strategy).

I developed the Self-Regulated Learning Strategy Use questionnaire in two main stages. First, I reviewed the self-regulatory strategies found by Zimmerman and Martinez-Pons (1986) and Wolters (1998, 1999) and the literature on SRL. Second, using a methodology similar to that of Wolters (1998), I administered a self-report questionnaire called the Initial Strategy Questionnaire in two of my composition classes during spring term 2013 (see Appendix M for a copy of the Initial Strategy

Questionnaire). The questionnaire asked students to report what they would do in five situations: (a) To motivate themselves to write, and continue writing, when given a boring topic, (b) to motivate themselves to write, and continue writing, when given a difficult topic, (c) when confronted with an essay deadline and a test on the same day, and (d) when asked advice on what to do before, during, and after writing in order to write a good essay. I made a summary list of all the strategies reported by the students, and included some of the most frequently reported strategies in the strategy use surveys. Therefore, the items included in the SRL strategy use questionnaire are based on and derived from the literature and actual data from non-native English speakers. In addition, the surveys were piloted with one class during spring 2013 to determine how often they could be administered without causing student fatigue.

Goal-Orientation Survey

To assess the three main types of goal orientation: mastery, performance-approach, and performance-avoidance, I adapted the goal orientation scale from the Patterns of Adaptive Learning Survey (Midgley et al., 2000). According to Zimmerman and Schunk (2012), more recent goal orientation scales include a mastery-avoidance dimension that is thought to apply mostly in situations where individuals are concerned about losing their skills, such as the case of elite performers, or the elderly (p. 58). As the participants in this study were neither elite performers, nor elderly, the Patterns of Adaptive Learning Survey, which does not include a mastery-avoidance dimension, was selected. This scale has been used in many studies focused on goal-orientation (e.g., Kaplan, Lichtinger, & Gorodetsky [2009] and Pajares, Britner, & Valiante [2000]). Items were modified and phrased to focus on writing. Some example items from this scale included: *It is important to me that I do not look stupid in the writing class, One of my goals is to show others that I am good at writing essays,* and *It is important to me that I learn a lot of academic writing skills in this class.* These sample items were designed to assess performance-avoidance, performance-approach, and mastery goal orientations, respectively (See Appendix N for a copy of the Goal Orientation Survey).

Writing Attitude Survey

To assess the students' attitude toward academic writing, I developed a short survey using a four-point Likert scale ranging from 1 (*Not at all true*) to 5 (*Definitely true*). Initially the survey included only three questions, but on feedback received from one my supervisors and to improve the quality of the survey, three more items were added subsequently. Representative items include: *Writing academic essays is easy*, *Writing academic essays is interesting*, and *Writing academic essays is of value to me* (See Appendix O for a copy of the survey).

General English Proficiency

To assess English Language proficiency, I used the TOEFL and IELT scores required of students for admission purposes. Students were asked to self-report their TOEFL or IELT scores in the class questionnaire, but at the end of every term, after collecting data, I asked permission from the school administrators to check students' files and assessed the accuracy of the student self-reports. Only a few mistakes were found and corrected in the data. As students had submitted different versions of TOEFL scores (i.e., paper-based TOEFL, Computer-Based TOEFL, and Interactive-based TOEFL) and some students had only IELT scores, all TOEFL and IELT scores where converted to TOEFL iBT scores, following guidelines from the TOEFL website (https://www.ets.org/toefl/institutions/scores/compare/).

Essay Grades

Essay Grades were the independent variable in the current study. As mentioned earlier in this chapter, all instructors grade their students' essays individually but using the same scoring rubric. At the same time, during midterm and at the end of the term, instructors exchange class portfolios with students' work among themselves. After individually grading each portfolio, instructors meet to discuss disagreements in their evaluations of students' work. All this is done to ensure consistency in grading across sections and in meeting the goals and objectives of the program. However, to further ensure reliability in essay grading and to address issues related to the subjectivity of grades, during the Fall 13, Spring 14, Summer 14, and Fall 14, one of the instructors teaching sections of the introductory course (instructor A) and myself graded each other's classes individual essays. As a result, 65% of the grades awarded to the students who participated in the study were derived from the evaluation of two instructors. When students completed their essays, we exchanged essays, assigned our own grade using the program's rubric, and met to discuss our evaluations. When there were disagreements, we either tried to persuade each other or asked a third reader to evaluate the essay. The remaining 35% of the grades reflect the grades that the second instructor (Instructor B) teaching sections of the introductory course awarded to her own classes. For these classes, either myself, or instructor A, served as portfolio second-readers.

Research Design

In view of the purposes of the study, a correlational design using structural equation modeling (SEM) was selected for the study. Correlational research designs do not allow for cause and effect inferences. However, using advanced forms of correlation methodology such SEM, which integrates several conventional statistical procedures, such as exploratory factor analysis, correlation, regression, and path analysis, makes it possible to not only confirm hypothesized relationships between latent and measured variables on the outcome variable, but one can also make predictions and explore the strengths of those relationships (Byrne, 2006). As a result, SEM has been widely used in second-language acquisition and educational psychology research.

As indicated in the previous section, all the data were collected using self-report questionnaires. Self-report questionnaires cannot capture the dynamics of SRL (Pintrich, 2004), and there are limitations to their use such as social desirability, lack of grain-size resolution—or inability to capture students' actual cognitive and strategies processes at the micro-level (Pintrich, 2000b), cognitive distortions, memory difficulties (Winne & Perry, 2000), and generalizability. However, self-report methods can "reliably and validly capture self-regulation as a contextualized process" (Pintrich, 2004; Zimmerman & Schunk, 2012, p. 3), especially when self-report measures are highly specific to the context and the task (Cleary, Callan, & Zimmerman, 2012). As I believe this statement applies to this study, some of the problems associated with using self-report to examine SRL can be avoided.

Procedures

In this section, I describe the procedures used to collect, select, and analyze the data for each research question. I also include a detailed description of Rasch procedures and criteria used for analyzing the data. Finally, I explain structural equation modeling and its assumptions.

Data Collection Procedures

Two colleagues teaching introductory and standard courses in the first-year writing program assisted me in data collection and volunteered their intact classes to participate in the study. At the same time, I obtained data from my own sections of the standard class. Survey data were collected for over a year, in four consecutive academic terms: Fall, Spring, and Summer of 2013, and Fall 2014. In each of these terms, data were collected at two points in time: As students wrote their first essay at the beginning of the term, and when students wrote their final essay at the end of the term. The detailed procedures for data collection are outlined below and summarized in Table 2.

1. At the beginning of the semester, a meeting with the other two instructors was conducted and the purpose of the study and of each survey was explained. A copy

of the schedule for the administration of surveys was given to the instructors (See Appendix P for a copy of the Survey Administration Schedule). The schedule indicated when to administer each of the surveys, and what procedures to follow. For example, for each survey, the schedule read: *Administer the survey during the first 15 minutes of class, and answer vocabulary questions.*

2. All surveys were administered in English, as English is the common classroom language, and there is often a mixture of different first language backgrounds in each class.
3. During the second week of the term, after the official Add/Drop registration period has ended, the other instructors and myself administered the Class survey.
4. During the third week of the term, the goal orientation survey was administered. At the time, instructors explained the purpose of the study to the students and the students were asked to sign the consent form.
5. From the third week of classes, as students began the drafting process of their first essay, the Outline, Draft 1, Draft 2, and Final Draft Strategy Use survey were administered. Each survey was administered in class during the first 15 minutes of class time on the day when the either the Outline, Draft 1, Draft 2, and Final Draft was due.
6. According to Bandura (1986) (as cited in Pajares, 2003 and Zimmerman & Schunk, 2012), self-efficacy measures should be administered prior to students' performance on the outcome variable. Therefore, during the fifth week of classes, as the drafting process for the first essay approached its end, and students began to

write their final draft—the basis for the final grade, the Academic Writing Self-Efficacy survey was administered.

7. At the end of the semester, around Week 9 for the Fall and Spring semesters, and Week 6 for the Summer session, and following the procedures outlined in Steps 2-4, the second administration of the Goal Orientation survey, Attitude survey, and Strategy Use surveys began.
8. As the students finalized the Final Draft of their final essay, the Academic Writing Self-Efficacy was administered again.
9. Soon after students completed the essays, one of my colleagues and I graded essays from our own and each other's classes as described in the previous section.
10. At the end of the semester, the instructors who assisted in data collection gave me records of grades obtained by the students for the first and second essay.
11. Data were entered during the term breaks soon after it was obtained.

Sample Selection and Rationale

Although data were collected during two time periods—at the beginning of the term as students wrote essay 1, and at the end of the term, when students wrote the final essay—only data obtained for the final essay were analyzed in the current study. Several reasons led to this selection, some practical in nature, and others more theoretical.

Table 2. *Data Collection Procedures and Survey Administration Schedule by Term*

Fall and spring terms	Procedures	Summer term
Essay 1		
Week 1	Meeting with instructors, explanation, and distribution of survey administration schedule	Week 1
Week 2	Administration of Class Survey	Week 2
Week 3	Explanation of study Signing of Consent Form Students Administration of Goal Orientation Survey	
Week 3-4	Administration of Outline, Draft 1, Draft 2 Strategy Use Survey on the due date of each draft.	Week 3-4
Week 5	Administration of Academic Writing Self-Efficacy prior to completion of Final Draft	
Week 6	Grading of Final Draft	Week 5
Essay 3		
Week 9	Administration of Goal Orientation Survey	Week 6
Week 10-12	Administration of Outline, Draft 1, Draft 2 Strategy Use Survey on the due date of each draft.	Week 7-8
Week 13	Administration of Academic Writing Self-Efficacy prior to completion of Final Draft	Week 9
Week 14-15	Grading of Final Draft	Week 10-11

First, the requirements for Essay 1 in the standard class were much more complex than the Essay 1 requirements for the introductory class. While both assignments required that students summarize two articles, in the standard class the students had to apply the ideas from two sources to critically evaluate the arguments made by one author in one required article. However, the students in the introductory class were either required to summarize and compare and contrast the ideas in two articles, or to apply the ideas in the articles to their own personal life. Also, as it was their first essay, the students were not expected to show mastery in the use of MLA or quote integration, which was required of students in the standard class. On the other hand, in the final essay, both classes were required to write a persuasive essay, do substantial research on their own, defend a position on a particular topic, and discuss a counterargument to their ideas. Even when the topics were different, the requirements and expectations for the assignment were the same across classes (See Syllabi in Appendix B and C). Therefore, to ensure that the sample was more homogeneous, data for the final essay were favored over data for Essay 1.

Second, the level of learner autonomy required for Essay 1 and the final essay also differed. For Essay 1, in both classes, the instructors assigned the required readings and the question to be discussed in the essay. Instead, in the final essay the students selected their own sources and developed their own thesis on the topic based on the information they had gathered. The approach to guiding the students into writing the essay was also more student-centered rather than teacher centered for the final essay. Students were allowed to monitor their own research time, develop their own preferred style for organizing the information, and overall take control over the topic. Therefore, the nature of the assignment and the focus on learner autonomy made the final essay a better opportunity to assess students' use of self-regulatory strategies, as they were responsible for managing their own writing processes.

Third, essay scores were overall lower for Essay 1 than for the final essay, and during the Spring 2013 a new program policy to address the issues with low grades in the first essay was put in place. The new policy allowed students to revise the first essay at the end of the term, provided they had submitted all drafts on time, for an opportunity to improve their grade. As data were being collected for the final essay at the end of the term, it was considered unreasonable to expect students to complete an additional SRL strategy use questionnaire for their revised Essay 1, and their final essay simultaneously. As data could not be collected for these drafts, and grades from Spring 2013 onward reflected the new policy, including Essay 1 data in the analysis would have meant a great reduction in the sample size; not to mention an unreasonable burden on the students and instructors assisting with the data collection process.

Fourth, social desirability biases for the SRL strategy use questionnaire were more evident in essay 1. While collecting data, I often referred to this questionnaire when conferencing with students about their essays. This was an opportunity to clarify comments they might have made, and to discuss their strategy use more openly. Often times when discussing their responses for Essay 1 drafts, the students told me that their responses did not reflect their actual behaviors and that they felt pressured to mark more *yes* than *no* responses because they wanted to impress me. The same biases were not so obvious in my conferences with students for their final essay. Perhaps having heard that I wanted them to be honest in their responses, and feeling less anxious about their responses, they were often willing to elaborate on their responses or criticize some of the strategies as something they would never do. Although based on anecdotal evidence, I thought it was reasonable to think that students in the other classes felt the same way. Therefore, I opted for using data for the final essay, and not for the first essay.

In addition to omitting data from the first essay, I also made the decision to eliminate from the analysis the SRL strategy use questionnaire that was developed for the outline stage of the writing process. The reasons supporting this decision were more obvious: First, during the summer term instructors teaching in the program do not require that students write outlines for their essays because the summer terms are four weeks shorter than regular terms. Second, the instructors assisting me in data collection and who volunteered their intact classes to participate in the study, did not consistently require an outline for their final essay, which is the focus of the present study. As a result, there was more than 25% of missing data for the outline for the final essay.

To summarize, data for the final essay were selected because the essay requirements and expectations were more homogeneous across classes, there was more variation in essay grades across classes, the nature of the assignment lent itself to more self-regulation, and there were indications of less social desirability biases affecting the students' responses. The Outline SRL strategy use survey and data was also eliminated from the analysis, as there was a great amount of missing data due to the fact that not all the instructors required an outline especially during the summer term.

Overview of the Rasch Model and Criteria

In the current study, the Rasch rating scale model (Andrich, 1982) was used to assess the reliability and validity of the Likert-scale constructs. The Rasch rating scale model is based on the Rasch model (Rasch, 1960), which is a mathematical probabilistic model that converts raw scores into interval measures and places items and persons on a common interval scale. It incorporates a method for ordering persons according to their ability and ordering items according to their difficulty (Bond & Fox, 2007). The Rasch rating scale model estimates the probability that a respondent will choose a certain response category for a particular item with the following formula:

$$\ln \{P_{nij} / P_{ni(j-1)}\} = B_n - D_i - F_j, \text{ where} \quad (1)$$

1n is a natural logarithm, P_{nij} is the probability of respondent n scoring in category j for item i, $P_{ni(j-1)}$ is the probability of scoring in category (j-1), B_n is the person measure of respondent n, D_i is the difficulty of item i, and F_j is the difficulty of category step j (the threshold at which there is a 50-50 chance of scoring in category j and category j-1). The persons' likely score is defined by the interaction between the person's measure, the criterion's difficulty, and the score's category threshold (Linacre, 1999).

According to Bond and Fox (2007) and Smith (2001) there are several advantages to using the Rasch model over raw scores to confirm the validity and reliability of survey data. First of all, the Rasch model is the only method to convert ordinal Likert-scale data into interval data, as it constructs "interval scales in which distances between counts are made equal and meaningful" (Bond & Fox, 2007, p. 17). As a result, it produces interval measures, which can be used in subsequent statistical analyses that assume an interval scale (Smith, 2001). Second, in the Rasch model, persons and items are ordered on a common logit scale allowing for persons and items to be conjointly defined, measured, and compared. Third, the Rasch model also makes it possible to control and identify items and persons that "do not contribute to useful measurement as defined by the model" (Smith, 2001, p. 291), or that do not conform to the predictions made by the model. Fourth, since all items are ordered along the same scale, it is possible to investigate the functioning of the rating scale (Linacre, 1999, 2006). Fourth, unlike models based on raw scores, the Rasch model can assess the dimensionality of the items—whether or not all items measure a single construct (Smith

2001, p. 290). Finally, the Rasch model provides reliability estimates for both person and items. These reliability estimates are preferred over traditional estimates of internal consistency that are "frequently computed based on non-linear raw scores where the methods assume a linear interval scale" (Smith, 2001, p. 287). In addition, the Rasch model also provides Rasch separation statistics, which are more sensitive to change than reliability estimates. Therefore, the Rasch rating scale model was used to assess the functioning of the constructs developed for the current study. Hereafter I discuss, I discuss the five important features provided by the Rasch model that were examined in the present study: Rasch reliability and separation, Rasch fit statistics, Rasch principal components of item residuals (PCA), Rasch rating scale functioning, and Wright map.

Rasch Reliability and Separation

Rasch provides both reliability and separation estimates for items and persons. Bond and Fox (2007) defined the item reliability index as an estimate of the replicability of item placement within a hierarchy of items along the measured variable if these same items were given to another person sample of comparable ability. The person reliability index was defined as an estimate of replicability of person placement that can be expected if the same respondents were given another set of items measuring the same construct. Both reliability indexes are analogous to Cronbach's alpha, and they are bounded by values of 0 and 1, and are expressed in the same manner for persons and items as follows:

$$R_P = \frac{SA_P^2}{SD_P^2} \tag{2}$$

$$R_I = \frac{SA_I^2}{SD_I^2} \tag{3}$$

where R_P and R_I represent Rasch person and item reliability, respectively, the denominator SD^2 represents variance adjusted for measurement error, and the nominator SA^2 represents variance unadjusted for persons, and items, respectively. Reliability indices greater than .80 are considered adequate in the assessment of instruments (Linacre, 2006). This criterion was adopted in the current study.

The person separation index is an estimate of the spread of separation of persons on the measured variable, and the item separation index is an estimate of the spread or separation of items on the measured variable. Separation values can range from zero to infinity and are not bounded by values of 0 or 1. Both indexes are expressed in standard error units and are estimated using:

$$G_P = \frac{SA_P}{SE_P} \tag{4}$$

$$G_I = \frac{SA_I}{SE_I} \tag{5}$$

where G_P and G_I represent Rasch separation indices for persons and items, respectively, SA indicates the adjusted person standard deviation, and SE indicates the average measurement error for persons and items, respectively.

For an instrument to be useful, the minimum separation index for persons and items should be 2 (Bond & Fox, 2007). Higher values represent greater spread of items and persons. Low person separation represents less variability among persons and implies that the instrument may not be sensitive enough to distinguish between high and low performers. Low item separation represents redundancy and may imply that the person sample is not large enough to confirm the item difficulty hierarchy (http://www.winsteps.com/winman/reliability.htm).

Rasch Fit Statistics

A second feature of the Rasch model is the item fit statistics. Rasch provides fit statistics for persons and items in unstandardized and standardized forms. The item fit statistics indicate how well the items fit the predictions made by the Rasch model, whereas the person fit statistics show the extent to which a person responds to the items in ways that are consistent with the other persons in the sample (Bond & Fox, p. 311).

The outfit MNSQ statistic is an average of the standardized residual variance, across both items and persons. This average is unweighted, which means it is not influenced by any other information (Bond & Fox, 2007, p. 285), and it is calculated as follows:

$$outfit = \frac{\Sigma Z_{ni}^2}{N} \tag{6}$$

where Z_{ni} represents the standardized residual for each person in each item, and W_{ni} indicates the variance for an individual across a given item. On the other hand, the infit statistic is a weighted standardized residual, in which relatively more impact is given to unexpected responses close to a person or item's measure (Bond & Fox, 2007, p. 285) and it is estimated as follows:

$$infit = \frac{\Sigma Z_{ni}^2 Wni}{\Sigma Wni} o \tag{7}$$

where Z_{ni} represents the residual variance across persons and items, and N indicates the sample size. When data fit the model perfectly, the infit MNSQ and outfit MNSQ values are 1.0. Values less than 1.0 indicate less variation than expected by model, that is, items overfit, whereas values greater than 1.0 indicate more variation than expected, that is, items underfit the model. The standard infit MNSQ and outfit MNSQ criteria recommended by Linacre (2002, 2006) is 0.5 to 1.5. This criterion was adopted in the current study.

The Rasch model also provides two standardized fit statistics, infit ZSTD and outfit ZSTD. Standardized infit and outfit statistics outside the range of -2.0 to +2.0 indicate that the item misfits the model and it is recommended these items be considered for deletion. The standardized fit statistics are especially useful when the sample size is small (Linacre, 2006) or a test is short. As the sample size in this study is 170, a relatively large sample, infit MNSQ and outfit MNSQ were considered more appropriate than infit ZSTD and outfit ZSTD.

The Rasch Principal Components Analysis of Item Residuals

A third feature of the Rasch model is item dimensionality, which is assessed through a principal components analysis (PCA) of item residuals. Bond and Fox (2007) emphasized that a PCA of item residuals provides a good estimate of the dimensionality of a construct because it allows for the identification of “any common variance among those aspects of the data that remain unexplained or unmodeled by the primary Rasch measure” (p. 253). Linacre (2006) explained that a construct is fundamentally unidimensional when the variance explained by the Rasch model equals, or exceeds, 50%, and the eigenvalue of the first residual contrast is less than 3.0 and accounts for less than 5%-10% of the variance (p. 272). Linacre (2006) also suggests that the disattenuated correlation between item residuals with positive and negative loadings calculated using the formula C/sqrt (R1x R2) should be near 1 if the two sets of items measure the same construct. Because “near 1” “is not a helpful criterion and because no specific criterion based on empirical evidence exists, in the current study .80 is used as a rule of thumb (Elwood, 2011, p.104).

Rasch Rating Scale Functioning

A fourth feature of the Rasch model is *category function,* which assesses how well a scale functions by indicating how many “respondents chose a particular response category, summed for each category across all items” (p. 222). Linacre (1999) proposed six criteria for optimizing scale categories: (a) a minimum of 10 responses per category (b) the shape of the probability curve should be peaked for each category, (c) the average category measures should increase with the rating scale categories, (d) outfit mean squares should be less than 2.0, (e) threshold calibrations should increase with the rating scale category, and (f) the category threshold should be between 1.4 and 5.0

logits apart. In this regard, Wolfe and Smith (2007) indicated that for a 4-point scale the values should be 1.1 logits, while for 5- and 6-point scales the values should be .81, and .59 logits apart, respectively. In the present study, Rasch logit measures were delineated in units called CHIPS, a more user-friendly scaling unit than logits. Therefore, the threshold calibrations should be between 6.37 and 22.75 CHIPS (1.4-5.0 logits apart). For a 4-point scale, the values should be at least 5.00 CHIPS apart (1.1 logits) and for a 5- point scale, they should be 3.69 CHIPS apart (.81 logits) (Elwood, 2011).

The Wright Map

A final feature of the Rasch model is the Wright map. The map displays the relationship between item difficulty and the person ability estimates on the same logit scale. The persons and items are displayed vertically, with persons on the left and items on the right. The top of the person side indicates more ability on the construct while the top of the item side indicates items that are more difficult to endorse. A person has a 50% probability of success when item difficulty and person ability are located at the same point on the scale. The Wright map has several advantages for researchers, as it allows them to: (a) visually inspect the distribution of items and persons estimates, (b) identify items that are redundant or too difficult to endorse, which can be deleted if they do not contribute to the measurement of the persons, and (c) identify outliers, as well as ceiling and floor effects. In the current study, CHIPS were used instead of logits as CHIPS make the interpretation of the Wright map easier because the conversion eliminates negative numbers. The formula used to convert logits into CHIPS was

USCALE = 4.55, UIMEAN = 50, UDECIM = 1; MRANGE = 50 (Linacre, 2006, p. 328). Therefore, the scale shown in the Wright map is comprised of units called CHIPS (1 logit = 4.55 CHIPS) and the mean has been set to 50, by default.

Summary of Rasch Criteria

All the features of the Rasch model described above were employed in the preliminary analyses of the surveys developed and adopted for the current study. The guiding criteria that were applied to all instruments included: (a) item and person reliability should be above .80, (b) the item and person separation index should be above 2.0, (c) the first residual eigenvalue in the PCA of items residuals should be less than 3.0, (d) infit MNSQ and outfit MNSQ statistics should range from 0.5-1.5, and (e) rating scale distributions should have at least 10 responses per category with increasing threshold calibrations, outfit values lower than 2.0, and category thresholds showing an appropriate degree of separation.

Overview of Structural Equation Modeling

Structural equation modeling (SEM) is a statistical methodology that integrates several statistical techniques, such as confirmatory factor analysis, correlation, regression, and path analysis. Kline (2005) explained that structural equation modeling has its roots in the development of factor analysis and path analysis in the 19th century. It was originally called the JWK model representing the three authors who in the early 1970s integrated these two approaches into what is now known as SEM: Joreskog, Keesling, and Wiley. Nowadays, SEM is considered a powerful statistical procedure that allows researchers to confirm a priori hypothesized models about the relationships between constructs and the strength of those relationships. Two distinctive characteristics of SEM from which its name is derived include: (a) a series of structural equations that represent equations that represent the relationships under study, and (b) a visual representation, or model, that allows for a clear understanding of the constructs being studied (Byrne, 2006, p. 3).

According to Byrne (2006), the use of SEM has increased over the past 20 years for several reasons. First, it is confirmatory rather than exploratory or descriptive by nature. Second, it allows researchers to detect measurement error, as it indicates explicit estimates of error. Third, SEM allows researchers to investigate both variables that cannot be observed or measured (latent variables) and variables that can be measured (observed variables). Finally, there are no other statistical methodologies that allow researchers to investigate the relationship between variables as well as the direct and indirect effect of those variables on a specific outcome. These characteristics are why this particular methodology was chosen to investigate the relationship between the variables in the current study.

Structural Equation Modeling Structure and Procedures

In structural equation modeling, a full latent variable model is composed of two basic elements, the measurement model and the structural model. The measurement model is the part of the full latent variable model that concerns only with the relationship between latent variables and their measured indicators (Byrne, 2006; Ullman, 2006), and is analogous to confirmatory factor analysis (CFA). In contrast, the structural model is the part that indicates the way in which the latent variables directly or indirectly influence each other (Byrne, 2006). SEM models require the use of specific geometric symbols: circles to represent unobserved or latent variables; squares to indicate observed variables; single headed arrows to show the impact of one variable on another; double-headed arrows to show covariances (Byrne, 2006, p. 9). It is also important that several steps be followed when conducting SEM. Kline (2005) recommended the following steps when conducting SEM: (a) model specification, (b) evaluation of model specification, (c) selection of measures, (d) model estimation, which is subdivided into evaluation of model fit, interpretation of parameter estimates, and consideration of equivalent models, (e) re-specification of model, and (f) reporting the results (p. 92). In addition, Byrne (2006) and Ullman (2006) recommended examining the validity of measurement models as the first step in any SEM analysis.

Model fit has traditionally been assessed using chi-square fit statistics. However, the chi-square statistic is very sensitive to sample size and is no longer relied upon as a basis for acceptance or rejection of a model (Schermelleh-Engel, Moosbruger, & Müller, 2003; Vandenberg, 2006). In fact, Tanaka (1993) lists three reasons why chi-square is no longer considered to be a useful fit index by most researchers: (1) It is sensitive to large and small sample sizes, with large sample sizes easily producing significant chi-square values, and small sample sizes easily producing Type II errors; (2) it is affected by model size and models with more variables have larger chi-square values; (3) it is affected by the distribution of the variables. As a result, some researchers have suggested giving more consideration to the χ^2/df ratio to assess model fit (Hu & Bentler, 1998), while others recommend looking at multiple criteria. Kline (2005) recommends assessing model fit with four fit indices: the model chi-square, the Steiger-Ling root mean square error of approximation (RMSEA), the Bentler comparative-fit index (CFI), and the standardized root mean square residual (SRMR). In the current study, the χ^2/df ratio (Hu & Bentler, 1998) as well as the four fit indices recommended by (Kline, 2005): the model chi-square, RMSEA, CFI, and SRMR are reported and used to assess model fit. The criteria is discussed below and summarized in Table 3.

First, Hu and Bentler (1998) recommended a value of less than 2 for the χ^2/df ratio for adequate fit. Second, the independence model chi-square statistic which relates to the null model, and it is used as a baseline to compare models and evaluate their improvement in terms of fit, should be ideally statistically significant ($p > .05$). However, as pointed out above its applicability has been questioned. A third absolute value included in the present study is the RMSEA, which is considered one of the most informative criteria in structural equation modeling. RMSEA is expressed per degrees of freedom and it is sensitive to the number of parameters in the model. RMSEA values of < .08 indicate adequate fit, while values less than or equal to .05 indicate good fit (Byrne, 2006). Fourth is the CFI statistics, which are derived from a comparison between the independence models and the hypothesized models. CFI is a reliable index because it is not affected by sample size. Byrne (2006) noted that CFI values greater than .90 are indicative of a well-fitting model, but Bentler and Hu, (1999) (cited in Kline, 2005) have suggested a cutoff value close to .95; therefore, cutoff values between .90 and .95 are considered accepted levels of significance in the current study. Finally, SRMS represents the average discrepancy between the observed sample and the hypothesized correlation matrixes. Values of < .05 indicate a well-fitting model (Byrne, 2006). These four indexes and criteria, as summarized in Table 3, are reported in the present study.

Table 3. *Summary of Fit Indices Criteria Used in the Current Study*

Index	Criterion/Significance level	Criterion/Significance level
χ^2/df ratio		> 2
Model χ^2		p > .05 good
RMSEA	Root mean square error of approximation with 90% confidence intervals	< .05 good, > .10 poor
CFI	Comparative Fit Index	> .90 good, > .95 better
SRMR	Standardized Root Mean Square Residual	< .08 good, < .05 better

Assumptions of Structural Equation Modeling

Several assumptions need to be met before conducting SEM. First, SEM requires a large sample size of at least 200 participants. Second, missing data should be deleted. Third, SEM requires that the data be normally distributed. Screening the data for univariate and multivariate outliers, and calculating values or skewedness and kurtosis are essential to assess normality (Tabachnick & Fidell, 2001). Fourth, SEM requires that the relationships between pairs of variables are linear. Fifth, the absence of multicolinearity and singularity are necessary to conduct SEM. Multicolinearity exists when two variables are highly correlated at .90 (Tabachnick & Fidel, 2001, p. 88), while singularity refers to perfect correlation between the variables. Finally, the residuals in the residual covariance matrix produced by SEM should be small or near zero and evenly distributed. The presence of large residuals indicates misspecification in the model and affects the overall model fit (Byrne, 2006).

Data Analyses

In this section I explain the methods for analyzing the data in relation to the three the research questions that motivated the study.

Research Question 1: Relationships in the Hypothesized Model of L2 University First-Year Writing Achievement

The focus of the first research question was to test the hypothesized Model of L2 First-Year Writing Achievement and the hypothesized relationships between writing attitude, goal-orientation, academic writing self-efficacy, SRL strategy use, general English proficiency, and essay grade. Prior to investigating the relationships using SEM, several preliminary analyses were conducted.

First, initial data screening was conducted using SPSS. SPSS descriptive statistics were used to identify univariate outliers with z-scores greater than ± 3.29, while SPSS regression with Mahabalonis distance was used to assess the presence of multivariate outliers.

Following the initial data screening, preliminary analyses of dimensionality were conducted for the Likert-scale variables: Academic Writing Self-Efficacy, Goal

Orientation, and Writing attitude. First, unidimensionality of the constructs was assessed using Exploratory Factor analyses with Maximum Likelihood extraction and direct Oblimin with Kayser normalization rotation. Each of the constructs identified were submitted to a second exploratory factor analysis to confirm the dimensionality and assess the reliability and validity of the constructs.

Subsequently, the results of exploratory factor analyses were confirmed using the Rasch rating scale model (Andrich, 1978) with WINSTEPS 3.80.1. The six important procedures of the Rasch measurement model, mentioned above, were investigated for the Likert-scale surveys: (a) Item and person separation and reliability, (b) item fit, (c) construct dimensionality with Rasch principal component analysis of item residuals, (d) category functioning, and (e) Wright map. To eliminate negative items in the person measures obtained with Rasch analyses, and to facilitate the interpretation of the results, the Rasch scale logit values were converted to Rasch CHIPS. The formula used to convert logits to CHIPS was USCALE = 4.55, UIMEAN = 50, UDECIM = 1, MRANGE = 50. When items did not fit the model, 5% of the persons with the most unexpected responses were temporarily deleted from the analysis, and the analysis was run again. The item was a candidate for deletion if the fit values did not improve and if the item was conceptually unrelated to the rest. The Pearson correlation between the person measures for the items with positive and negative loadings was also considered when deleting items to assess the impact on the person measures; however, priority was given to the conceptual meaning of the item in relation to the others. In addition, when doing the PCA analysis of item residual, the logical relationship between the items with negative and positive loadings was examined to assess the presence of contradictory dimensions. In general, the results of the Rasch analyses were preferred over the results of exploratory factor analysis.

Next, data screening and Rasch measurement analyses were conducted for the SRL strategy use dichotomous data. Prior to conducting the Rasch analysis, a composite score was obtained by adding the responses provided by the participants on all three drafts. For example, if a participant indicated that using a specific strategy in Draft 1, Draft 2, and the Final Draft, the composite score for the participant on the use of this self-regulatory strategy was 3. Once a composite score was obtained, Rasch measurement analyses were conducted for all nine questions in the survey to assess dimensionality and obtain Rasch person measures, which were used in subsequent SEM analyses.

Rasch Data Screening and Structural Equation Modeling Assumptions

Rasch person estimates obtained through Rasch rating scale analyses were used for the four variables that were measured using surveys—Academic Writing Self-Efficacy, Goal Orientation, SRL Strategy Use, and Writing Attitude— as it is assumed that the Rasch measures approximate true interval scales better than raw scores. However, for the English Proficiency and Essay grade variables, the raw scores were used. One reason is that SEM does not require all variables to be in the same scale. In fact, (Little, 2013) pointed out that in SEM analysis variable rescaling is only necessary when encountering convergence problems, but it is not recommended when variables are already in meaningful and interpretable metrics. This is because rescaling variables "does not change the shape of a distribution or the strength of an association between any of the variables" (p. 20). Prior to conducting the SEM analysis, the data was screened to ensure it met the assumptions of structural equation modeling, which I describe hereafter.

First, structural equation modeling requires a large sample size. Although 220 respondents participated in the study, several respondents withdrew from the courses and therefore had to be eliminated from the analyses. As a result, the *N*-size for this study was reduced to 170, which is not considered optimal. In fact, Kline (2005) indicated that a sample size in excess of 200 with a sample size-to-parameters ratio of 20:1 is ideal, while a sample size smaller than 100 with a ratio of 10:1 would be "untenable" (p. 12) for complex models. Although a larger sample size would have been preferable, the sample size of 170 was considered adequate given that the hypothesized model is relatively simple.

Second, SEM is sensitive to missing data, and missing cases must be estimated or deleted. In the current study, respondents who did not complete all of the questionnaires were eliminated from the analyses. Prior to conducting the Rasch analyses, 48 cells (0.2% of the data set) with missing data were identified for 5 respondents in one of the three SRL strategy use questionnaires. The missing data were estimated using the sum of the responses for two of the SRL strategy use questionnaires and multiplying them by 1.5. In essence, this is a case-wise mean replacement of the missing scores. This was necessary to be able to calculate a composite score for each participant (the sum of the responses for the three SRL strategy use questionnaires), which was used subsequently in the Rasch analyses of the SRL Strategy Use construct. The Rasch model easily handles missing data; therefore, the data set for SEM analysis was complete.

Third, structural equation modeling requires multivariate normality for all variables. The normality of the variables can be assessed statistically by calculating skewness and kurtosis statistics, or by examining distribution plots and histograms (Tabachnick & Fidell, 2007, p. 79). Most of the measured variables in the study had some degree of skewness and kurtosis. The highest levels of skewness were found in TOEFL, Reducing Task Difficulty, Revision, Mastery Goal Orientation, and Self-Assessment Self-Efficacy, while the highest levels of kurtosis were identified for Reducing Task Difficulty, Solving Problems, Revision, and Time Management (See Table 4). Square root and log 10 transformations were conducted to reduce the skewness and kurtosis, but they did not improve. More complex transformations were not attempted as they can lead to difficulties in interpretation, and “sometimes a normal distribution is not reasonable for some variables” (Ullman, 2006, p. 42). This is especially for the Self-Regulatory Strategies Use variable, as participants are required to report how much they use a specific strategy and some may report using it all the time, while others may report never using the strategy at all. Thus, the data were not transformed.

Multivariate normality was also evaluated using Mardia’s coefficient, which evaluates normality by assessing multivariate kurtosis (Ullman, 2006). Mardia’s coefficient and its normalized estimate are included in the output generated by EQS together with a list of five persons who have the highest kurtosis values. Byrne (2006) indicated that when Mardia's normalized estimates coefficient is greater than 5.0, the data are non-normally distributed and robust ML estimation should be used. In the current study, Mardia's normalized estimate was 5.25, slightly over the criterion, when testing the hypothesized Model of L2 First-year Writing Achievement, so the results for the Likelihood Method are reported.

Table 4. *Descriptive Statistics for Measured Variables*

Variable	*M*	*SD*	Minimum	Maximum	Skewness	Kurtosis
Writing Attitude	49.18	10.04	22.40	77.90	.18	.34
English Proficiency	74.93	14.20	53.00	114.00	.92	-.03
Understand Requirements	52.51	4.17	41.50	65.30	.28	.41
Reduce Task Difficulty	53.04	4.00	45.00	66.30	.75	1.52
Improve Motivation to Write	57.08	8.38	32.30	68.50	-.24	-.50
Monitor Writing	57.82	6.60	41.00	71.10	.25	-.02
Adjust Environment	53.35	4.43	35.60	64.30	-.04	1.81
Increasing Motivation	54.37	5.13	41.60	65.90	.51	.15
Solving Problems	49.15	3.29	33.60	64.70	-.19	4.76
Assessing Written Product	51.64	4.79	41.60	67.90	.91	2.37
Time Management	50.27	3.89	37.30	63.40	-.48	3.17
Mastery GO	66.03	9.74	29.80	75.50	-.79	.15
Approach-Avoidance GO	43.73	11.59	25.20	75.40	.05	-.36
Academic Writing SE	48.90	10.32	10.20	71.40	-.53	.51
Grammar Self-Efficacy	50.74	9.65	18.50	79.80	-.28	.73
Self-Assess Self-Efficacy	49.91	9.42	15.30	66.90	-.85	.94
Revision Self-Efficacy	49.30	11.99	8.80	92.80	.00	1.02
Essay Grade	2.34	0.94	.70	4.00	-.10	-.93
Gender	1.57	0.49	1.00	2.00	-.28	-1.94
SE	—	—	—	—	.18	.37

Note. N = 170; SE = Self-Efficacy; GO = Goal Orientation; Males = 1; Females = 2.

Fourth, SEM requires the absence of univariate and multivariate outliers. Univariate outliers are persons with extreme values in one variable and are assessed through SPSS DESCRIPTIVES, which transforms raw scores into *z*-scores. Persons with z-scores greater than ±3.29 were considered univariate outliers (Field, 2009, p. 72). In the present data, 19 respondents were identified as univariate outliers. The responses were checked to assess if their extreme scores were connected to the rest of the cases (Tabachnick & Fidell, 2001, p. 77). As they appeared to be legitimate part of the sample, and, as their elimination would greatly affect the *N* size for the study, they were all retained.

Multivariate outliers, on the other hand, are persons with extreme values in multiple variables. The Mahalabonis statistic obtained through SPPS LINEAR REGRESSION was used to assess the presence of multivariate outliers. The Mahabalonis cutoff value of $p > .001$ ($\chi^2 = 43.820$, $df = 19$) indicated that there was only one multivariate outlier in the data. After deleting the multivariate outlier, the sample sized was reduced to 170.

The fifth multivariate assumption for SEM concerns linearity, which requires that the relationship between pairs of measured variables is linear. To assess linearity, bivariate scatterplots using SPSS GRAPHS were created and screened. I concluded that the data met the assumption of linearity, as there was no indication of the violation of linearity in the scatterplots.

Sixth, SEM requires the absence of multicolinearity and singularity. Multicolinearity is present when two variables have a correlation greater than .90; while singularity is observed when two variables are perfectly correlated. Pearson correlations calculated through SPSS CORRELATIONS for all pairs of variables indicated that most of the correlations between the pairs were low, as they ranged from .02 to 39, 24 correlations were between .40 and .70, three correlations were between .82 and .84, but there were no correlations greater than .90 (Tabachnick & Fidell, 2001, p. 88), indicating that the data met this assumption (See Appendix Q for the correlation matrix).

Finally, SEM requires that the residuals generated after a model is estimated to be small or close to zero. In EQS, the output generates standard residual matrices as well as standardized residuals statistics and a graph of the distribution of standardized residuals. Byrne (2006, pp. 93-94) explained that standardized residuals statistics should be small, or close to zero, and that the residuals should be evenly distributed around the mean, with the majority of the residuals falling between the range of -.1 and +.1. Large residual values indicate model misspecification, which affects overall model misfit (p. 93). In the hypothesized model of L2 writing achievement, the standardized residual statistic was .06 and 80.7% of the residuals were in the -.1 to +.1, which indicated this assumption was met.

Prior to conducting the analysis of the full hypothesized model of writing achievement, and, as recommended by (Byrne, 2006), the validity of three measurement models—Academic Writing Self-Efficacy, SRL Strategy Use, and Goal Orientation was examined. In the current study, model estimation was conducted using the covariance matrix and maximum likelihood (ML) estimation. All SEM analyses, including the examination of measurement models, were conducted using EQS 6.3 for Windows.

Once the validity of the measurement models was confirmed, the SEM analysis for the full hypothesized model was conducted to examine the relationships between

English Proficiency, Writing Attitude, Mastery Goal Orientation, SRL Strategy Use, and writing achievement, as assessed by Essay Grades.

Research Question 2: Gender Differences in the hypothesized Model of L2 First-Year Writing Achievement

To examine differences in gender in the hypothesized Model of L2 First-Year Writing Achievement, two separate SEM analyses with the final model were conducted for males ($N = 73$) and females ($N = 97$). The fit of the two separate models was first assessed, and subsequently, the results were compared and inspected for significant differences between the two groups.

Research Question 3: The Influence of Self-Regulated Learning Strategy Use and Academic Writing Self-Efficacy on Writing Achievement

The third research question concerned how students with poor, fair, good, and excellent writing proficiency, as measured by their essays grades, differed in terms of their use of SRL strategies and in relation to their self-efficacy beliefs for academic writing. A one-way multivariate analysis of variance (MANOVA) with four levels of achievement as the independent variable and two independent variables, each with four and eight levels, was conducted to examine these differences. Table 5 summarizes the variables included in the one-way MANOVA analysis.

The analyses were conducted after confirming that the following assumptions were met: normal distribution of the dependent variable, homogeneity of variance between the groups, cases representing random samples of the population, and independence of scores (Field, 2005, pp. 359-360). No violations of these assumptions were found in the data.

Table 5. *Multivariate Analyses of Variance for Research Question 3*

MANOVA	Independent variable	Dependent variables	Dependent variable levels
1	Four levels of writing proficiency (Low, Fair, Good, and Excellent)	SRL Strategy Use	• Understand Requirements • Reduce Task Difficulty • Adjust Environment • Solve Problems • Time Management • Increase Motivation to Write • Increase motivation to Continue Writing • Monitor Writing • Assess Writing
		Academic Writing Self-Efficacy	• Writing Self-Efficacy • Grammar Self-Efficacy • Self-Assessment Self-Efficacy • Revision Self-Efficacy

To obtain groups for the independent variable, Writing Achievement, the 170 participants were divided into four groups based on their essay grades: Excellent, Good, Fair, and Low. Excellent was used to label students in the A range; good for those in the B range; fair for students in the C range, low for those in the D and F range. Thus, the four groups were treated as the independent variables and the different levels of SRL Strategy Use and Academic Writing Self-Efficacy as the dependent variables.

Multiple comparisons on the same data set can lead to Type 1 error, which causes the null hypothesis to be rejected even when it is true. Therefore, the Bonferroni adjustment, a procedure that adjusts the level of significance for univariate tests and pairwise comparisons, was selected. To apply the Bonferroni adjustment, the alpha value .05 of the univariate ANOVAs was divided by the total number of levels of the dependent variables (.05/13) and the results were tested at the $p = .004$ level (.05/13). Post hoc tests were run to identify specific differences between the groups when statistically significant results were found. To control for Type I errors across multiple pairwise comparisons, and be consistent with the decision to test the univariate ANOVAs at the $p = .004$, each comparison was tested at the alpha level for the ANOVA divided by the number of comparisons (.004/4) at the $p = .001$.

Research Question 4: The Influence of Writing Experience on Self-Regulated Learning Strategy Use and Academic Writing Self-Efficacy

The fourth research question concerned how the participants with different levels of writing experience differed in terms of their use of SRL strategies and their self-efficacy beliefs for academic writing. A one-way multivariate analysis of variance (MANOVA) with four levels of writing experience as the independent variable and two independent variables, each with four and eight levels respectively (See Table 6), was conducted to examine these differences. The analysis was conducted after confirming that the following assumptions were met: normal distribution of the dependent variable, homogeneity of variance between the groups, cases representing random samples of the population, and independence of scores (Field, 2009, pp. 359-360). No violations of these assumptions were found in the data.

Table 6. *Multivariate Analyses of Variance for Research Question 4*

MANOVA	Independent variable	Dependent variables	Dependent variable levels
1	Four levels of Writing Experience (No, Little, Some, and Much Experience)	SRL Strategy Use	• Understand Requirements • Reduce Task Difficulty • Adjust Environment • Solve Problems • Time Management • Increase Motivation to Write • Increase motivation to Continue Writing • Monitor Writing • Assess Writing
		Academic Writing Self-Efficacy	• Writing Self-Efficacy • Grammar Self-Efficacy • Self-Assessment Self-Efficacy • Revision Self-Efficacy

To obtain groups for the independent variable, writing experience, the 170 participants were divided into four groups: No experience, Little experience, Some experience, and Much experience, based on the number of courses they reported having taken when the data were collected. No experience indicated that the participants had not taken a writing course; Little experience indicated that the students had taken one course, Some experience was for those who had taken two courses, and Much experience indicated that the participants had taken three or more courses. Thus, the four groups were the independent variable and the different levels of SRL Strategy Use and Academic Writing Self-Efficacy were the dependent variables.

Multiple comparisons on the same data set can lead to Type 1 error, which causes the null hypothesis to be rejected even when it is true. Therefore, the Bonferroni adjustment, a procedure that adjusts the level of significance for pairwise comparisons, was selected. To apply the Bonferroni adjustment, the alpha value .05 of the univariate

ANOVAs was divided by the total number of levels of the dependent variables (.05/13) and the results were tested at the $p = .004$ level (.05/13). Post hoc tests were run to identify specific differences between the groups when statistically significant results were found. To control for Type I errors across multiple pairwise comparisons, and be consistent with the decision to test the univariate ANOVAs at the $p = .004$, each comparison was tested at the alpha level for the ANOVA divided by the number of comparisons (.004/4) at the $p = .001$. Table 6 summarizes the variables included in the one-way MANOVA analysis.

Chapter 3 Summary

In this chapter, the methods used in the present study were described. In the first section I provided a detailed explanation of the participants, instruments, and rationale for selection of data. Next, I provided an overview of the Rasch measurement model as well as of the Rasch criteria used to assess the dimensionality of the constructs in the current study. Subsequently, an overview of Structural Equation Modeling and of the assumptions of Structural Equation Modeling was presented. Following the overview of Structural Equation Modeling, the methodology adopted to examine each of the four research questions that motivated the study was described. This included data screening, assumptions check, and the steps followed for the main statistical analyses associated with the research questions: Structural Equation Modeling and MANOVA.

CHAPTER 4

PRELIMINARY ANALYSES

The purpose of this chapter is to describe in more detail the initial analyses of all three instruments with Likert scales: Academic Writing Self-Efficacy, Goal Orientation, and Writing Attitude. The analyses were conducted using SPSS (15.0) and the Rasch rating scale model (Rasch, 1960; Andrich, 1978) with WINSTEPS version 3.80.1. (Linacre, 2014). The analyses were necessary to assess the reliability and dimensionality of the instruments, as well as to convert the raw scores to interval person measures that will be used in SEM analysis.

Academic Writing Self-Efficacy Instrument

The Academic Writing self-efficacy scale was originally designed to assess the students' level of confidence in different areas of writing. Initially, 50 items were developed to assess seven constructs: Writing Sentences Self-Efficacy (5 items), Writing Paragraphs Self-Efficacy (9 items), Writing Essays Self-Efficacy (6 items), Writing Types of Essays Self-Efficacy (3 items), Discrete Level Self-Assessment Self-Efficacy (11 items), General Level Self-Assessment Self-Efficacy (4 items), and Revision Self-Efficacy (12 items). The validity and dimensionality of the Self-Efficacy instrument was examined through exploratory factor analysis and Rasch analysis. Hereafter, I describe the initial data screening procedures, the results of factor analysis, and the results of Rasch analyses including item dimensionality, item-fit, category function, person/item reliability and separation.

Academic Writing Self-Efficacy Initial Data Screening

Prior to conducting the analysis, Academic Writing Self-Efficacy was examined through various SPSS programs for accuracy of data entry, and missing values. A total of 213 students were originally enrolled in the classes that participated in the study, but 47 participants dropped out or withdrew from the courses and did not complete the questionnaire. As a result, the *N*-size was reduced to 172. No missing or improvable values were found in the data for the 172 participants.

Academic Writing Self-Efficacy Factor Analysis Results

After the initial data screening, an exploratory factor analysis (EFA) with Maximum Likelihood extraction and direct oblimin rotation was conducted to assess the dimensionality of the Academic Writing Self-Efficacy instrument. The scree plot, minimum eigenvalues of 1.0 and item loadings of no less than .45 (Stevens, 2002) were used as the criteria for selecting the factors. The Kaiser-Meyer-Olkin (KMO = .92) indicated sampling adequacy for the analysis, and the Bartlett's test of sphericity χ^2 (1225) = 7806.54, $p < .001$ indicated that correlations among the items were adequate.

The best solution had four factor components that accounted for 64.46% of the variance with eigenvalues of 25.97, 2.9, 1.76, and 1.63 for the first, second, third and fourth factors. The Scree Plot (See Figure 2) indicated a clear inflection after the fourth factor. The solution indicated a different arrangement of items from what it was originally hypothesized. One item (SE 19) failed to achieve the cut-off loading criterion of .45 and some of the scales gained items (See Table 7).

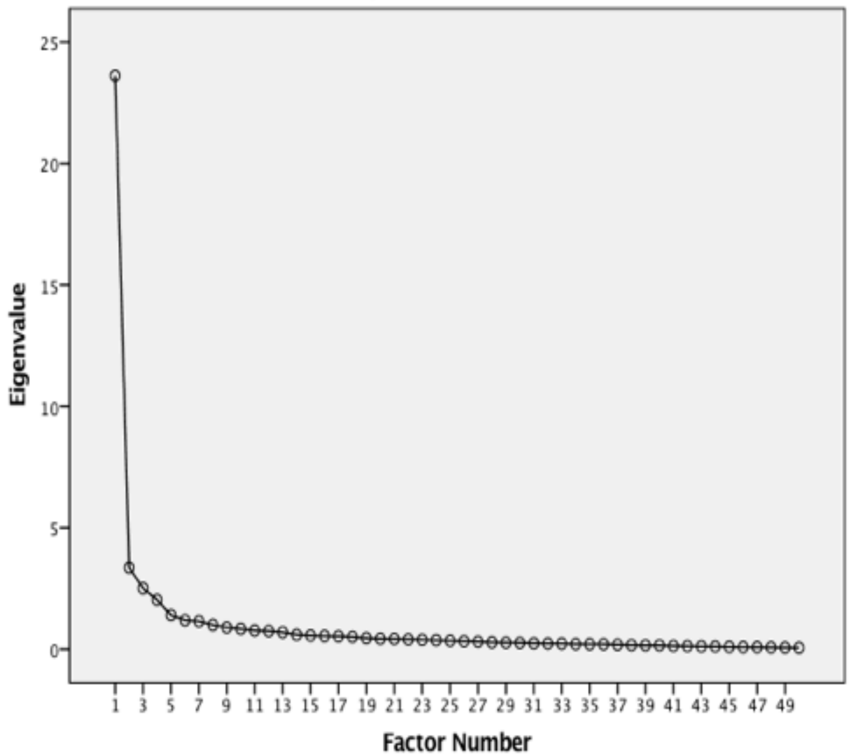

Figure 2. Scree plot of eigenvalues for Academic Writing Self-Efficacy.

The first factor, Paragraph-Writing Self-Efficacy, originally included items 6-14, but it gained all three items (21, 22, and 23) from the Essay-Type Writing Self-Efficacy scale, as well as six items (15, 16, 17, 18, 19, 20) from the 6-item Essay-Writing Self-Efficacy scale. All the items assessed confidence on writing paragraphs and essays. Representative items included item 6 (*I can write a paragraph with a strong topic*

Table 7. *Academic Writing Self-Efficacy Rotated Pattern Matrix*

Item	Writing Self-Efficacy	Revision Self-Efficacy	Grammar Self-Efficacy	Self-Assessment Self-Efficacy
SE 17*	.74			
SE 13	.72			
SE 15*	.70			
SE 7	.69			
SE 6	.67			
SE 16*	.67			
SE 8	.65			
SE 21*	.64			
SE 14	.60			
SE 20*	.59			
SE 22*	.57			
SE 10	.57			
SE 12	.57			
SE 23*	.56			
SE 11	.55			
SE 9	.49			
SE 18	.45			
SE 49		.75		
SE 50		.73		
SE 48		.72		
SE 42		.68		
SE 47		.66		
SE 43		.64		
SE 44		.62		
SE 41		.61		
SE 46		.50		
SE 45		.48		
SE 2			.79	
SE 3			.76	
SE 1			.74	
SE 4			.72	
SE 24*			.69	
SE 26*			.66	
SE 25*			.65	
SE 5			.63	
SE 40*			.62	
SE 39*			.61	
<u>SE 19*</u>	<u>.36</u>			
SE 31				.71
SE 32				.71
SE 34				.68
SE 30				.64
SE 33				.60
SE 35*				.59
SE 27				.58
SE 28				.63
SE 29				.57
SE 37*				.50
SE 38*				.48
SE 36*				.47
% of Variance	51.92	57.70	61.19	64.47
Eigenvalue	25.97	2.90	1.76	1.63
Reliability	.96	.93	.96	.93

Note. N = 172; Extraction Method: Principal components analysis; Rotation method: Oblimin with Kaiser Normalization. Items marked with an asterisk changed from their original subscales. Underlined loadings indicate the item did not achieve the cutoff value of .45 used in the study.

sentence) and item 16 (*I can write an essay with a strong thesis*); therefore, this first factor was re-labeled *Writing Self-Efficacy*. An additional EFA conducted to assess the dimensionality of the 18 items yielded a one-component solution with strong loadings (.55-.77) that accounted for 51.92% of the variance.

The second factor, Sentence-Writing Self-Efficacy, which originally included items 1-5, gained three items (24, 25, 26) from the Discrete Level Assessment Self-Efficacy scale, and two items (39, 40) from the Revision Self-Efficacy subscale. All the items focused on grammar at different levels of the writing process: when writing, identifying problems, and revising, respectively. Representative items included item 3 (*I can write simple sentences that are grammatically correct*), item 24 (*I can identify grammatically incorrect complex sentences in my essay*), and item 39 (*When revising my essay, I can effectively improve grammar problems*); therefore, this factor was re-labeled *Grammar Self-Efficacy.* The EFA conducted to assess the dimensionality of the 10 items yielded a two-factors solution with strong loadings (.61-.75) that accounted for 57.70% of the total variance.

The third factor, Discrete Level Self-Assessment Self-Efficacy retained only eight items (27-34) of the original 11 items (24-34), but it gained four items (35, 36, 37, 38) from the General Level Self-Assessment Self-Efficacy scale. All the items dealt with confidence in identifying problems in essays. Examples of items from this factor included item 29 (*I can identify irrelevant ideas in my essays*) and item 37 (*I can tell when the tone of my essay is not academic*); therefore, the factor was re-labeled *Self-*

Assessment Self-Efficacy. When an additional EFA was conducted to assess the dimensionality of the twelve items, the results yielded a one-factor solution with adequate loadings (.57-.71) for eleven of the items. Item 26 had a low loading of .33 and was considered a candidate for deletion pending further analysis. All items accounted for 64.47% of the variance.

Finally, the fourth factor, Revision Self-Efficacy, retained ten of the original 12 items without gaining additional items. All ten items focused on confidence to improve problems while revising essays. Representative items included item 41 (*When revising my essay, I can effectively improve problems with topic sentences*) and item 49 (*When revising my essay I can improve problems with overall organization*); therefore, the original label of *Revision Self-Efficacy* was retained. When the dimensionality of the 10 items was assessed through an EFA, the analysis yielded a one-factor solution with good loadings (.54 to .68) that accounted for 64.47% of the variance. The structure of the constructs after EFA is compared to the original structure on Table 8.

To summarize, four factors labeled Grammar Self-Efficacy, Writing Self-Efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy were identified through exploratory factor analysis. All four factors had strong loadings and high reliability. The examination of the dimensionality of each factor through EFA suggested that, except for Grammar Self-efficacy, all the other factors were fundamentally unidimensional. To confirm the dimensionality of the constructs identified through exploratory factor analysis, Rasch analysis was conducted on all four factors and including all the items subsumed under each construct as shown in Table 8. I describe the results of the Rasch analyses in the next section.

Table 8. *Comparison of Structure of Academic Writing Self-Efficacy*

Initial structure		After EFA structure	
Original scale label	Items	New scale label	Items
Paragraph-Writing Self-Efficacy	6, 7, 8, 9, 10, 11, 12, 13, 14		
Essay-Writing Self-Efficacy	15, 16, 17, 18, 19, 20	Writing Self-Efficacy	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23
Essay-Type Writing Self-Efficacy	21, 22, 23		
Sentence-Writing Self-Efficacy	1, 2, 3, 4, 5	Grammar Self-Efficacy	1, 2, 3, 4, 5, 24, 25, 26, 39, 40
Discrete Level Assessment Self-Efficacy	24, 25, 26, 27, 28 29, 30, 31, 32, 33, 34		
General Level Assessment Self-Efficacy	35, 36, 37, 38	Self-Assessment Self-Efficacy	27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38
Revision Self-Efficacy	39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50	Revision Self-Efficacy	41, 42, 43, 44, 45, 46, 47, 48, 49, 50

Note. EFA = Exploratory Factor Analysis.

Academic Writing Self-Efficacy Rasch Analysis Results

The dimensionality of each of the four constructs identified through factor analysis was further re-assessed through Rasch analysis using WINSTEPS. As mentioned in the Methods chapter, five significant procedures of Rasch analysis were examined: item dimensionality, category function, Rasch fit statistics, Wright map, and item/person reliability and separation, using the criteria summarized in Table 9. Hereafter, I provide a detailed explanation of the results of Rasch analyses for the four subscales subsumed under the construct of Academic Writing Self-Efficacy: Writing Self-Efficacy, Grammar Self-Efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy.

Table 9. *Rasch Criteria for Unidimensionality (Linacre, 2002, 2006)*

Criterion	Values
Item reliability	.80
Item separation	2
Mean-Square for Infit and outfit	.5 -1.5
Disattenuated correlation of sub-groups	.80 (Correlation / Square root ((IR 1 x IR 2))
Variance explained	50% or higher
First residual eigenvalue and variance explained	< 3 and < 10%
Item elimination	No improvement after 5% of unexpected responses are temporarily deleted

Writing Self-Efficacy

Rasch analysis was conducted with all the eighteen items subsumed under this construct. The Rasch PCA of item residuals was examined to assess the dimensionality of the items. The results are summarized in Table 10. The Rasch measures explained 61.6% of the variance (eigenvalue = 27.2), which exceeded the 50% criterion. The eigenvalue for the first contrast was 2.3 and accounted for 5.2% of the unexplained variance. This was below the 3.0 criterion for the eigenvalue in the first contrast and below the 10% criterion for the variance in the first contrast. Person estimates were produced for the PCA items residuals with positive and negative loadings to calculate the dissattenuated correlation between the person ability estimates. The correlation was .88, exceeding the .80 criterion (Elwood, 2011), but the item residuals loadings were examined for confirmation.

Table 10. *Rasch Standardized Residual Variance Results for Writing Self-Efficacy*

	Eigenvalue	Percent of variance
Total raw variance in observations	44.2	100.0%
Raw variance explained by measures	27.2	61.6%
Raw variance explained by persons	22.1	49.8%
Raw Variance explained by items	5.2	11.7%
Raw unexplained variance (total)	17.0	38.4%
Unexplained variance in first contrast	2.3	5.2%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals indicated that neither the items with positive loadings nor the items with negative loadings formed patterns that could suggest a second dimension (See Table 11). The item residuals with positive loadings included items that were related to paragraph writing (e.g., WSE 10: *I can write a paragraph combining ideas from different sources*; WSE 12: *I can write a paragraph that includes meaningful analysis of quotes*; WSE 14: *I can write a paragraph that includes relevant evidence*) as well as items that were related to essay writing (WSE 18: *I can write an essay using the proper academic tone*; WSE 20: *I can write an essay that is well focused*; WSE 22: *I can write a good argumentation essay*). The same variation was present in the items residuals with negative loadings. Some of the items were related to paragraph writing (e.g., WSE 13: *I can write a paragraph with a good concluding sentence*; WSE 8: *I can write a paragraph that is well-focused*; WSE 6: *I can write a paragraph with a strong topic sentence*) while others were related to essay writing (e.g., WSE 16: *I can* write an *essay with a strong thesis*; WSE 15: *I can write an essay with an engaging introduction*). Taken together, the results indicated that the items in the Writing Self-Efficacy scale were measuring one construct.

Table 11. *Item Residual Loadings for Writing Self-Efficacy*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
WSE 10	.59	47.0	.97	.96
WSE 11	.54	50.6	.88	.88
WSE 12	.48	51.5	1.18	1.19
WSE 9	.42	45.2	1.50	1.49
WSE 14	.29	48.8	.83	.82
WSE 18	.17	49.9	1.14	1.15
WSE 20	.06	51.0	.95	.95
WSE 22	.03	52.5	.91	.91
Negative loadings				
WSE 13	−.04	49.9	1.06	1.06
WSE 7	−.06	51.6	.74	.73
WSE 21	−.12	51.9	.92	.90
WSE 23	−.14	49.5	.82	.81
WSE 8	−.29	51.0	.80	.80
WSE 17	−.34	52.1	.87	.86
WSE 6	−.54	49.4	.93	.93
WSE 16	−.55	50.9	1.13	1.12
WSE 15	−.55	47.1	1.25	1.25

Note. MNSQ = mean square; *N* = 170.

After evaluating the dimensionality of the items, the rating scale functioning was examined. As shown in Table 12, each category on the 5-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -18.9 in Category 1 to 14.1 in Category 5, and the Outfit MNSQ statistic was 1.17, less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories, and the category thresholds had a separation greater than 3.69 CHIPS required for a 5-point scale (Elwood, 2011). Therefore, the 5-point rating scale was considered optimal for this construct.

Table 12. *Category Functioning Statistics for the 5-point Writing Self-Efficacy Scale*

	Count (%)	Average measure	Outfit MNSQ	Structure calibration	Category measure
1 Not confident	173 (6)	-18.9	1.17	None	(-26.63)
2 Slightly confident	776 (27)	-9.4	.91	-21.51	-13.97
3 Somewhat confident	1227 (42)	.5	.94	-6.34	.51
4 Confident	655 (22)	8.4	.99	7.40	13.98
5 Very confident	93 (3)	14.1	1.18	20.45	(25.64)

Note. MNSQ = mean square; *N* = 172.

Next, the item fit statistics for Writing Self-Efficacy were inspected. The point-measure correlation for all items was good, as they ranged from .70 to .83. This indicated that each item was highly correlated with the whole scale, plausibly measuring one construct, Writing Self-Efficacy. With the exception of WSE 19 (*I can write an essay with a properly formatted work cited page*), all the items had Infit MNSQ and Outfit MNSQ statistics within the .50-1.5 criterion (Infit MNSQ, .74-1.50 and Outfit MNSQ, .73-1.49; see Table 13).

Table 13. *Rasch Item Statistics and Inter-Item Correlation for Writing Self-Efficacy*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation
WSE 22	52.7	.6	.86	-1.3	.87	-1.2	.79
WSE 17	52.3	.6	.84	-1.5	.83	-1.6	.80
WSE 21	52.1	.6	.86	-1.3	.85	-1.5	.80
WSE 7	51.9	.6	.72	-2.9	.71	-3.0	.82
WSE 12	51.8	.6	1.15	1.4	1.15	1.4	.77
WSE 8	51.3	.6	.78	-2.2	.77	-2.3	.79
WSE 20	51.3	.6	.90	-.9	.90	-2.0	.80
WSE 16	51.3	.6	1.05	.5	1.04	.4	.74
WSE 11	50.9	.6	.82	-1.8	.82	-1.8	.80
WSE 13	50.2	.6	1.01	.1	1.00	.1	.79
WSE 18	50.2	.6	1.05	.5	1.06	.6	.73
WSE 23	49.9	.6	.78	-2.2	.77	-2.3	.82
WSE 6	49.8	.6	.87	-1.3	.87	-1.2	.78
WSE 14	49.2	.6	.80	-2.0	.79	-2.1	.82
WSE 15	47.7	.6	1.17	1.6	1.17	1.5	.73
WSE 10	47.5	.6	.89	-1.1	.88	-1.1	.79
WSE 9	45.9	.6	1.34	3.0	1.34	2.9	.71
WSE 19	43.7	.6	1.99	7.4	2.03	7.6	.60

Note. *N* = 172; Pt-measure correlation = Point-measure correlation.

To investigate whether this item should be deleted from subsequent analyses, 17 persons with the most unexpected responses (5% of the total sample) were temporarily deleted and WINSTEPS was rerun. The fit statistics for WSE 19 did not improve: Infit MNSQ = 1.69, Outfit MNSQ = 1.76. The Pearson correlation between person measures with positive and negative loadings was calculated to assess the impact of WSE 19 deletion on the person measures. The deletion of item WSE 19 resulted in a drop in the Pearson correlation index from .90 to .88, suggesting that the item should be retained. However, a conceptual inspection of WSE 19 indicated that item was measuring a different construct as it describes properly formatting a works cited page rather than writing part of an essay. This requires a different set of skills and knowledge. Therefore, the item was deleted and WINSTEPS was run again. With the exclusion of WSE 19 all the other items had fit indices within the criterion range of .50 and 1.5 (See Table 14).

Table 14. *Rasch Item Statistics and Inter-Item Correlation for Writing Self-Efficacy without item WSE 19*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation
WSE 22	52.5	.6	.91	-.8	.91	-.8	.79
WSE 17	52.1	.6	.87	-1.2	.86	-1.4	.81
WSE 21	51.9	.6	.92	-.7	.90	-1.0	.80
WSE 7	51.6	.6	.74	-2.7	.73	-2.7	.83
WSE 12	51.5	.6	1.18	1.7	1.19	1.7	.78
WSE 8	51.0	.6	.80	-1.9	.80	-2.0	.80
WSE 20	51.0	.6	.95	-.4	.95	-.5	.78
WSE 16	50.9	.6	1.13	-1.2	1.12	1.1	.74
WSE 11	50.6	.6	.88	-1.1	.88	-1.1	.81
WSE 13	49.9	.6	1.06	.6	1.06	.6	.80
WSE 18	49.9	.6	1.14	1.3	1.15	1.4	.73
WSE 23	49.5	.6	.82	-1.8	.81	-1.9	.82
WSE 6	49.4	.6	.93	-.6	.93	-.7	.78
WE 14	48.8	.6	.83	-1.6	.82	-1.7	.83
WSE 15	47.1	.6	1.25	-2.2	1.25	2.2	.73
WSE 10	47.0	.6	.97	-.3	.96	-.3	.79
WSE 9	45.2	.6	1.50	4.1	1.49	4.1	.70

Note. *N* = 172; Pt-measure correlation = Point-measure correlation.

Figure 3 displays the Wright map for Writing Self-Efficacy. The CHIPS scale is displayed on the left side of the figure. Persons with higher levels of Writing Self-Efficacy and items that are more difficult to endorse are placed higher on the map. Conversely, persons with lower levels of writing self-efficacy and items that are easier to endorse are towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (49.0) indicated that the items were slightly difficult for a fair number of the participants. The two most difficult items to endorse were WSE 22 (*I can write a good synthesis essay*), with a difficulty estimate of 52.5*,* and WSE 17 (*I can write an essay with a powerful conclusion*) with a difficulty estimate of 52.1. The easiest item to endorse was WSE 9 (*I can write a paragraph with properly cited quotes*) with a difficulty estimate of 45.2. An inspection of the empirical item hierarchy indicated that the difficulty order was determined by the nature of the writing task described by the items. Difficult to endorse items (WSE 22: *I can write a good synthesis essay*; WSE 21: *I can write a good critique essay*) are more holistic in nature, focus mostly on writing different types of essays and require the application of several skills and more knowledge of writing conventions. The items in the middle focus on writing more specific parts of either paragraphs or essays as well as more abstract features of writing (WSE 8: *I can write a paragraph that is well focused;* WSE 16: *I can write an essay with a strong thesis;* WSE 13: *I can a paragraph with a good concluding sentence*; WSE 18: *I can write an essay using proper academic tone*; WSE 6: I can write a paragraph with a strong topic sentence. On the other hand, the two easiest to endorse items focused discrete points of a paragraph (WSE 10; *I can write a paragraph combining ideas from different sources*; WSE 9: *I can write a paragraph with properly*

```
-----------------------------------------------------------------------------
More confident      |  More difficult to endorse items
persons             |
              ###   |
 70               T+
                    |
                #   |
          #######   |
               ##   |
       ##########   |
 60        ###### S+
        #########   |
       ##########   |
         ########   |
          #######   |T WSE 22: write a good synthesis essay
    #############   |S WSE 17: write an essay with a powerful conclusion
                    |  WSE 21: write a good critique essay
                    |  WSE 12: Write paragraph includes meaningful analysis
                    |  WSE 7:  write an essay that is well focused
                    |  WSE 21: write a good critique essay
                    |  WSE 7:  write paragraph all ideas are well connected
                    |  WSE 8:  write a paragraph that is well focused
 50  ############   +M WSE 11: write paragraph smoothly integrates quotes
                    |  WSE 13: write paragraph with good concluding sentence
                    |  WSE 18: write an essay using the proper academic tone
                    |  WSE 23: write a good argumentation essay
                    |  WSE 6:  write a paragraph with a strong topic sentence
    ############# M|S WSE 14: write paragraph includes relevant evidence
           ######   |T WSE 10: write paragraph combining ideas from sources
                    |  WSE 15: write an essay with an engaging introduction
      ###########   |  WSE 9:  write a paragraph with properly cited quotes
        #########   |
        #########   |
 40         #####   +
               ## S|
         ########   |
         ########   |
                    |
               ##   |
                #   |
 30             #   +
               ## T|
               ##   |
               ##   |
                    |
               ##   |
                    |
 20                 +
Less confident      | Easier to endorse items
persons             |
-----------------------------------------------------------------------------
```

Figure 3. Wright map for Writing Self-Efficacy. Each # is 2 persons; Each **.** is 1 person; M = Mean; S = 1 SD from the mean; T = 2 SDs. The map was attenuated to fit on one page.

cited quotes). In general, the difficulty of the items seems to be a progression from writing discrete features of a paragraph, to writing more abstract parts of paragraphs or essays, to eventually writing more holistically different kinds of essays.

The Rasch person reliability estimate was excellent at .93, while the Rasch item reliability estimate was good at .82, meeting the .80 criterion. The person separation index was 3.62, indicating that the participants were divided into three distinct groups in terms of their ability estimates. The separation index was 2.13, indicating that there were two levels of item difficulty.

Grammar Self-Efficacy

Rasch analysis was conducted with all the items ten items subsumed under this construct. The Rasch PCA of item residuals was examined to assess the dimensionality of the items. The results are summarized in Table 15. The Rasch measures explained 63.3% of the variance (eigenvalue = 17.2), which exceeded the 50% criterion. The eigenvalue for the first contrast was 2.4 and accounted for 9.0% of the unexplained variance. This was below the 3.0 eigenvalue criterion for the first contrast and below the 10% criterion for the variance in the first contrast. Person estimates were produced for the PCA items residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .73, slightly below the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined.

Table 15. *Rasch Standardized Residual Variance Results for Grammar Self-Efficacy*

	Eigenvalue	Percent of variance
Total raw variance in observations	27.2	100.0%
Raw variance explained by measures	17.2	63.3%
Raw variance explained by persons	12.3	45.0%
Raw Variance explained by items	5.0	18.3%
Raw unexplained variance (total)	10.0	36.7%
Unexplained variance in first contrast	2.4	9.0%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals indicated that neither the item residuals with positive loadings nor the item residuals with negative loadings formed patterns that could suggest a second dimension (See Table 16). The item residuals with positive loadings included items related to both writing grammatically correct sentences (e.g., GSE 1: *I can write grammatically correct simple sentences*; GSE 3: *I can write simple sentences that are grammatically correct*; GSE 2: *I can write simple sentences with proper punctuation*) as well as items that were related to identifying grammatically correct sentences (e.g., GSE 24: *I can identify grammatically incorrect simple sentences*). Similarly, the items were negative loadings included items that were related to revising, identifying, and writing grammatical sentences (e.g., GSE 40: *When revising, I can effectively improve punctuation problems*; GSE 25: *I can identify grammatically incorrect complex sentences*; GSE 5: *I can write grammatically correct simple sentences*; GSE 40: *When revising my essay, I can improve problems with punctuation*). Overall, the distribution of items with positive and negative loadings did not suggest a second dimension and indicated that the items in the Grammar Self-Efficacy scale were measuring one single construct: Grammar Self-Efficacy.

Table 16. *Item Residual Loadings for Grammar Self-Efficacy*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
GSE 1	.70	48.2	.85	.82
GSE 3	.68	46.8	1.25	1.19
GSE 2	.63	44.7	.81	.82
GSE 24	.32	46.8	1.02	1.02
Negative loadings				
GSE 4	−.18	53.7	.91	.92
GSE 26	−.23	49.7	1.00	1.04
GSE 5	−.33	56.1	1.12	1.12
GSE 39	−.48	50.1	.98	.99
GSE 25	−.50	53.6	.99	.96
GSE 40	−.56	50.3	1.01	.99

Note. MNSQ = mean square; *N* = 170.

After evaluating the dimensionality of the items, the rating scale functioning was examined. As shown in Table 17, each category of the 5-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -19.3 in Category 1 and to 16.1 in Category 5, and the Outfit MNSQ statistic (.98) was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories and the category thresholds had a separation greater than 3.69 CHIPS (for a 5-point scale). Therefore, the 5-point rating scale was considered optimal for this construct as it met all the criteria proposed by Linacre (1999, 2006).

Table 17. *Category Functioning Statistics for the 5-point Grammar Self-Efficacy Scale*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Not confident	79 (5)	-19.3	.98	None	(-25.96)
2 Slightly confident	457 (27)	-7.5	.97	-20.87	-12.71
3 Somewhat confident	632 (37)	1.1	.97	-4.42	.85
4 Confident	451 (26)	8.6	.92	6.21	12.75
5 Very confident	101 (6)	16.1	1.26	19.08	(24.28)

Next, the item fit statistics were inspected. The point-measure correlation for the construct was high, as they ranged from .74 to .80. This indicated that each of the items was highly correlated with the rest of the scale and that they were plausibly measuring one construct. All the items had Infit MNSQ and Outfit MNSQ statistics within the .50-1.5 criterion with Infit MNSQ values ranging from .81-1.25 and Outfit MNSQ values from .82-1.19 (See Table 18).

Table 18. *Rasch Item Statistics and Inter-Item Correlation for Grammar Self-Efficacy*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
GSE 5	56.1	.6	1.12	1.2	1.12	1.0	.74
GSE 4	53.7	.6	.91	-.8	.92	-.7	.80
GSE 25	53.6	.6	.99	-.1	.96	-.3	.80
GSE 40	50.3	.6	1.01	.1	.99	-.1	.76
GSE 39	50.1	.6	.98	-.2	.99	-.1	.77
GSE 26	49.7	.6	1.00	.0	1.04	.4	.76
GSE 1	48.2	.6	.85	-1.5	.82	-1.7	.79
GSE 3	46.8	.6	1.25	2.2	1.19	1.7	.76
GSE 24	46.8	.6	1.02	.2	1.02	.2	.77
GSE 2	44.7	.6	.81	-1.9	.82	-1.7	.78

Note. *N* = 172. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 4 displays the Wright map for Grammar Self-Efficacy. The CHIPS scale is displayed on the left side of the figure. Persons with higher levels of grammar self-efficacy and items that are more difficult to endorse are placed higher on the map. Conversely, persons with lower levels of grammar self-efficacy and items that are easier to endorse are towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (50.0) indicated that the items were targeting this group of students and were neither too difficult nor too easy them. The most difficult item to endorse was GSE 5 (*I can write grammatically correct complex sentences*) with a difficulty estimate of 56.1*,* while the easiest item to endorse was GSE 2 (*I can write simple sentences with proper punctuation*) with a difficulty estimate of 44.7. An inspection of the empirical item hierarchy indicated that the level of complexity of the sentences that students were required to write or identify determined the difficulty of the items. The difficult to endorse items focus on grammatically complex sentences (GSE 5: *I can write grammatically correct complex sentences;* GSE 25: *I can identify grammatically correct complex sentences*). The items in the middle focus more on identifying or revising grammatical problems in general not specifically easy or complex problems (GSE 26: *I can identify punctuation problems;* GSE 40*: When revising I can effectively improve punctuation problems;* GSE39*: When revising I can effectively improve grammar problems*). On the other hand, the easier to endorse items focus on writing and identifying grammatically simple sentences (GSE 3: *I can write grammatically correct simple sentences;* GSE 24: *I can identify grammatically incorrect simple sentences*). The general pattern for the item difficulty appears to be a progression from writing easy sentences, to identifying general grammatical problems, to writing and identifying complex sentences.

The Rasch person reliability estimate was high at .92, while the Rasch item reliability estimate was higher at .97, meeting the .80 criterion. The person separation index was 3.34, indicating that the participants were divided into three distinct groups in terms of their ability estimates. The separation index was 5.57, indicating that there were five levels of item difficulty.

```
------------------------------------------------------------------------------
More confident | More difficult to endorse items
persons        |
               |
 70           T+
            #  |
           ##  |
          .##  |
          ###  |
           .#  |
 60      .### S+
         ####  |
     .#######  |T GSE 5: write grammatically correct complex sentences
      .######  |
         ####  |S GSE 4: write complex sentences with proper punctuation
               |  GSE 25: identify grammatically incorrect complex sentences
        #####  |
 50########## M+M GSE 40: effectively improve punctuation problems
               |  GSE 39: effectively improve grammar problems
               |  GSE 26: identify punctuation problems
      .######  |  GSE 1: write sentences using parts of speech correctly
        .####  |S GSE 3: write grammatically correct simple sentences
               |  GSE 24: identify grammatically incorrect simple sentences
         .###  |  GSE 2: write simple sentences with proper punctuation
          ###  |T
           .#  |
 40      #### S+
           ##  |
         .###  |
               |
          .##  |
              T|
 30        .#  +
            .  |
               |
               |
               |
            .  |
               |
 20            +
Less confident |Easier to endorse items
Persons        |
------------------------------------------------------------------------------
```

Figure 4. Wright map for Grammar Self-Efficacy. Each # is 2 persons; Each **.** is 1 person; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit on one page.

Self-Assessment Self-Efficacy

Rasch analysis was conducted for the twelve items that subsumed in the Self-Assessment Self-Efficacy construct. The PCA of item residuals was examined to assess the dimensionality of the items. The results are summarized in Table 19. The Rasch measures explained 55.2% of the variance (eigenvalue = 15.1), which exceeded the 50% criterion. The eigenvalue for the first contrast was 2.3 and accounted for 8.5% of the unexplained variance. This was below 3.0 criterion eigenvalue for the first contrast and below the 10% criterion for the variance in the first contrast. Person estimates were produced for the PCA items residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .76, which is slightly below the .80 criterion (Elwood, 2011). Therefore, the item residual loadings were examined.

Table 19. *Rasch Standardized Residual Variance Results for Self-Assessment Self-Efficacy*

	Eigenvalue	Percent of variance
Total raw variance in observations	27.3	100.0%
Raw variance explained by measures	15.3	56.1%
Raw variance explained by persons	15.1	55.2%
Raw Variance explained by items	.2	.9%
Raw unexplained variance (total)	12.0	43.9%
Unexplained variance in first contrast	2.3	8.5%
Unexplained variance in second contrast	2.1	7.8%
Unexplained variance in third contrast	1.5	5.4%
Unexplained variance in fourth contrast	1.1	4.1%
Unexplained variance in fifth contrast	1.0	3.7%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals loadings indicated that neither the item residuals with positive loadings nor the item residuals with negative loadings formed patterns that could suggest a second dimension (See Table 20). The item residuals with positive loadings included items that began with the phrase *I can tell when* and described different problems with an essay (e.g., SASE 31: *I can tell when the topic sentences of my essay are weak*, SASE 32: *I can tell when the thesis of my essay is weak*). The item residuals with negative loadings were more varied and included items that had words like *assess, tell when, and identify* different problems in an essay (e.g., SASE 36: *I can accurately assess the organization of my essay*, SASE 38: *I can tell if my essay provides a superficial discussion of the topic*, SASE 29: *I can identify irrelevant ideas in my essay*). Taken together, there was no significant evidence that the items measured a second dimension of the construct.

Table 20. *Item Residual Loadings for Self-Assessment Self-Efficacy*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
SASE 31	.75	47.9	1.11	1.09
SASE 32	.67	48.8	1.06	1.05
SASE 30	.53	48.4	1.01	.98
SASE 27	.15	51.5	1.26	1.35
Negative loadings				
SASE 28	−.09	50.7	.94	.91
SASE 29	−.11	50.4	.83	.83
SASE 37	−.18	49.0	1.29	1.26
SASE 33	−.18	49.6	.94	.91
SASE 34	−.19	49.9	.77	.77
SASE 38	−.30	50.8	.98	.96
SASE 35	−.56	51.7	.76	.73
SASE 36	−.70	51.2	.97	.95

Note. MNSQ = mean square; *N* = 170.

After assessing the dimensionality of the items, the rating scale functioning was examined. As shown in Table 21, each category of the 5-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -20.7 in Category 1 to 10.8 in Category 5, and the Outfit MNSQ statistic (1.29) was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories and the category thresholds had a separation greater than 3.69 CHIPS (for a 5-point scale). Therefore, the 5-point rating scale was considered optimal for this construct.

Table 21. *Category Functioning Statistics for the 5-point Self-Assessment Self-Efficacy Scale*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Not confident	71 (3)	-21.0	1.56	None	(-29.11)
2 Slightly confident	524 (26)	-8.4	.90	-24.06	-14.66
3 Somewhat confident	923 (45)	1.7	.96	-5.19	1.27
4 Confident	487 (24)	8.0	.91	7.81	14.68
5 Very confident	41 (2)	10.9	1.27	21.44	(26.61)

Next, the item fit statistics were inspected (see Table 22). The point-measure correlations for the respective items were relatively strong, as they ranged from .70 to .78. This was an indication of the plausible dimensionality of the construct, as each of the items was highly correlated with the whole scale. All the items had Infit MNSQ and Outfit MNSQ statistics within the .50-1.5 criterion (Infit MNSQ, .76 to 1.26 and Outfit MNSQ, .73 to 1.35).

Figure 5 displays the Wright map for Self-Assessment Self-Efficacy. The CHIPS scale is displayed on the left side of the figure. Persons with higher levels of Self-Assessment Self-Efficacy and items that are more difficult to endorse are placed higher on the map. Conversely, persons with lower self-assessment self-efficacy and items that are easier to endorse are towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (50.00) indicated that the items were adequately targeting this group and were neither too difficult or too easy for the participants.

Table 22. *Rasch Item Statistics and Inter-Item Correlation for Self-Assessment Self-Efficacy*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
SASE 35	51.7	.6	.76	-2.5	.73	-2.6	.77
SASE 27	51.5	.6	1.26	2.3	1.35	2.9	.70
SASE 36	51.2	.6	.97	-.2	.95	-.4	.70
SASE 38	50.8	.6	.98	-.2	.96	-.3	.74
SASE 28	50.7	.6	.94	-.5	.91	-.8	.74
SASE 29	50.4	.6	.83	-1.6	.83	-1.6	.74
SASE 34	49.9	.6	.77	-2.3	.77	-2.2	.78
SASE 33	49.6	.6	.94	-.6	.91	-.8	.77
SASE 37	49.0	.6	1.29	2.5	1.26	2.2	.70
SASE 32	48.8	.6	1.06	.6	1.05	.5	.76
SASE 30	48.4	.6	1.01	.1	.98	-.1	.74
SASE 31	47.9	.6	1.11	1.0	1.09	.8	.77

Note. *N* = 172. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

The three most difficult items to endorse were SASE 35 (*I can tell when ideas in my essay are not in logical order)* with a difficulty estimate of 51.7, SASE 27 (*I can tell when ideas in my essay are not in logical order*) with a difficulty estimate of 51.5, and SASE 36 (*I can accurately assess the organization of my essay*). The easiest item to endorse was SASE 31 (I can tell when the topic sentences of my essay are weak). An inspection of the empirical item hierarchy indicated the level of specificity of the features of the essays that students needed to identify determined the difficulty of the items. The most difficult to endorse items asked for confidence on assessing holistic aspects of an entire essay (e.g., SASE 27: *I can tell when the ideas in my essay are not in logical order*; SASE 36: *I can accurately assess the organization of my essay*). The

```
-----------------------------------------------------------------------------
More confident     |  More difficult to endorse items
persons            |
 70              T+
                   |
              ##   |
               #   |
              ##   |
           .####   |
 60          .##  S+
        .#######   |
           #####   |
        .#######   |
           .####   |
     ###########   |S SASE 35: accurately assess quality of my essay
                   |  SASE 27: tell when ideas are not in logical order
                   |  SASE 36: accurately assess organization
                   |  SASE 38: tell if superficial discussion of topic
 50          ###  M+M SASE 28: tell when ideas are not well connected
                   |  SASE 29: identify irrelevant ideas
                   |  SASE 34: tell when conclusion is not effective
                   |  SASE 33: identify weak concluding sentences
         #######   |S SASE 37: tell when tone is not academic
                   |  SASE 32: tell when thesis is weak
                   |  SASE 30: tell when introduction is not engaging
                   |  SASE 31: tell when topic sentences are weak
             .##   |
        .#######   |
             .##   |
              ##   |
 40           ##  S+
              .#   |
               #   |
           #####   |
                   |
               #   |
 30            .  T+
               #   |
               .   |
                   |
               .   |
                   |
                   |
 20            .   +
Less confident     |Easier to endorse items
persons            |
-----------------------------------------------------------------------------
```

Figure 5. Wright map for Self-Assessment Self-Efficacy. Each # is 2 persons; Each . is 1 person; M = Mean; S = 1 standard deviation from the mean; T = 2 standard deviations from the mean.

items close the mean focused on assessing both abstract and more specific features of an essay (SASE 38: *I can tell if my essay provides a superficial discussion of the topic;* SASE 29: *I can identify irrelevant ideas in my essays;* SASE 34: *I can tell when the conclusion of my essay is not effective*; SASE 33: *I can identify weak concluding sentences in my essays*). On the other hand, the easy to endorse items dealt with assessing more specific parts of the essays (SASE 32: *I can tell when the thesis of my essay is weak;* SASE 31: *I can tell when the topic sentences of my essay are weak*). The general pattern for the item difficulty appears to be the progression from being able to self-assess specific features of an essay, to being able to assess more holistic and complex features.

The Rasch person reliability estimate was excellent at .92, exceeding the .80 criterion, while the Rasch item reliability estimate was adequate .72, but not meeting the criterion of .80. The person separation index was 3.41, indicating that the participants were divided into three distinct groups in terms of their ability estimates. The separation index was 1.62, indicating that there was only one level of item difficulty.

Revision Self-Efficacy

Rasch analysis was conducted for the ten items subsumed in this factor. The Rasch PCA of item residuals was examined to assess the unidimensionality of the items. The results are summarized in Table 23. The Rasch measures explained 62.8% of the variance (eigenvalue = 16.9), which exceeded the 50% criterion. The eigenvalue for the first contrast was 1.9 and accounted for 7.1% of the unexplained variance. This was below the 3.0 eigenvalue criterion for the first contrast, and below the 10% criterion for the variance in the first contrast. Person estimates were produced for the PCA items residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .83, meeting the .80 criterion (Elwood, 2011), but the item residuals loadings were examined for confirmation.

Table 23. *Rasch Standardized Residual Variance Results for Revision Self-Efficacy*

	Eigenvalue	Percent of variance
Total raw variance in observations	26.9	100.0%
Raw variance explained by measures	16.9	62.8%
Raw variance explained by persons	14.1	52.3%
Raw Variance explained by items	2.8	10.5%
Raw unexplained variance (total)	10.0	37.2%
Unexplained variance in first contrast	1.9	7.1%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals loadings indicated that neither the item residuals with positive loadings nor the item residuals with negative loadings formed patterns that could suggest a second dimension (See Table 24). The item residuals with positive loadings included items related effectively improving problems various features of an essay, such as topic sentences (e.g., RSE 41), concluding sentences (e.g., RSE 46) and focus (e.g., RSE: 43). The item residuals with negative loadings included items related to improving problems with logical order (e.g., RSE 50), depth of analysis (e.g., 48), and overall organization (e.g., RSE: 49) among other features. Therefore, the results indicated that the items in the Revision Self-Efficacy scale were measuring one construct.

Table 24. *Item Residual Loadings for Revision Self-Efficacy*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
RSE 46	.65	49.1	1.14	1.12
RSE 41	.64	48.0	1.18	1.17
RSE 43	.35	49.1	1.00	.97
RSE 45	.15	48.0	1.02	1.04
RSE 42	.06	52.0	1.08	1.06
Negative loadings				
RSE 47	−.24	49.3	.94	.93
RSE 44	−.28	49.5	1.02	1.01
RSE 48	−.45	53.0	.74	.73
RSE 50	−.53	51.2	1.11	1.15
RSE 49	−.55	50.8	.70	.69

Note. MNSQ = mean square; *N* = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 25, each category of the 5-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -22.1 in Category 1 to 17.9 in Category 5, and the Outfit MNSQ statistic (1.15) was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories, and the category thresholds had a separation greater than 3.69 CHIPS (for a 5-point scale). Therefore, the 5-point rating scale was considered optimal for this construct.

Table 25. *Category Functioning Statistics for the 5-point Revision Self-Efficacy Scale*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Not confident	64 (4)	-22.1	1.15	None	(-30.75)
2 Slightly confident	408 (26)	-11.3	.96	-25.66	-17.31
3 Somewhat confident	771 (45)	-.9	.93	-8.91	-.77
4 Confident	434 (24)	10.7	.95	7.35	17.30
5 Very confident	43 (3)	17.9	1.39	27.22	(32.26)

Next, the item fit statistics were inspected. The point-measure correlations for the items were high, as they ranged from .76 to .85. This was an indication of the plausible dimensionality of the construct as each of the items was highly correlated with the whole scale. The Infit MNSQ and Outfit MNSQ for all items were within the .50-1.5 criterion with Infit MNSQ values ranging from .70 to 1.18 and Outfit MNSQ values from .69 to 1.17 (See Table 26).

Table 26. *Rasch Item Statistics and Inter-Item Correlation for Revision Self-Efficacy*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
RSE 48	53.0	.7	.74	-2.6	.73	.6	.85
RSE 42	52.0	.7	1.08	-.8	1.06	-2.7	.79
RSE 50	51.2	.7	1.11	1.0	1.15	1.3	.78
RSE 49	50.8	.7	.70	-3.0	.69	-3.0	.85
RSE 44	49.5	.7	1.02	.2	1.01	.1	.82
RSE 47	49.3	.7	.94	-.5	.93	-.5	.80
RSE 43	49.1	.7	1.00	-.0	.97	-.2	.80
RSE 46	49.1	.7	1.14	1.3	1.12	1.1	.77
RSE 41	48.0	.7	1.18	1.6	1.17	1.4	.76
RSE 45	48.0	.7	1.02	.2	1.04	.4	.79

Note. *N* = 172. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 6 displays the Wright map for the Revision Self-Efficacy scale. The CHIPS scale is on the left side of the figure. Persons with higher levels of revision self-efficacy and items that are more difficult to endorse are placed higher on the map. Conversely, persons with lower revision self-efficacy and items that are easier to endorse are located towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (50.0) indicated that the items were adequately targeting this group, and that the items were not either too difficult or easy for the participants. The most difficult item to endorse was RSE 48 (*I can effectively improve problems with depth of analysis*, while the easiest items to endorse items were RSE 45 (*I can effectively improve problems with*

```
------------------------------------------------------------------------------
More confident    |  More difficult to endorse items
persons           |
   80             +
                  |
                  |
               #  |
               #  |
                  |
               . T|
   70             +
            ####  |
                  |
             .##  |
            .###  |
            ####  |
   60        .## S+
              .#  |
          .#####  |
           #####  |
             ###  |T RSE 48: improve problems with depth of analysis
            .###  |S RSE 42: improve problems with coherence
                  |  RSE 50: improve problems with logical order
   50   .####### M+M RSE 49: improve problems with overall organization
                  |  RSE 44: improve problems with analysis of quotes
                  |  RSE 47: improve problems with the quality of the essay
                  |S RSE 43: improve problems with focus
                  |  RSE 46: improve problems with concluding sentences
                  |  RSE 41: improve problems with topic sentences
                  |  RSE 45: improve problems with quote integration
          .#####  |T
            ####  |
          ######  |
         .######  |
   40      .####  +
               # S|
              ##  |
             ###  |
                  |
            .###  |
   30          .  +
              .#  |
                 T|
               #  |
                  |
               .  |
                  |
   20             +
Less confident    |  Easier to endorse items
Persons           |
-----------------------------------------------------------------------------
```

Figure 6. Wright map for Revision Self-Efficacy. Each # is 2 persons; Each · is 1 person. M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit on one page.

quote integration) and 41 (*I can effectively improve problems with topic sentences*), both with a difficulty estimate of 48.0. An inspection of the empirical item hierarchy indicated that the level of specificity of the essay features that the participants were required to identify determined the complexity of the items. The difficult to endorse items required identification of more abstract features of an essay, such as coherence and depth of analysis, which are often difficult for students to grasp (RSE 48: *I can effectively improve problems with depth of analysis*; RSE 42: *I can effectively improve problems with coherence*). The items in the middle focus on improving abstract and more specific features of an essay (RSE 44: *I can effectively improve problems with analysis of quotes;* RSE 47: *I can effectively improve problems the quality of my essay*). On the other hand, the easy to endorse items focused on improving less abstract and more specific parts of an essay (RSE 45: *I can effectively improve problems with quote integration*; RSE 41: *I can effectively improve problems topic sentences*). The items close to the mean focused on improving more abstract features of an essay (e.g., RSE 50: *I can effectively improve problems with depth of analysis;* RSE 44: *I can effectively improve problems with analysis of quotes;* RSE: 50: *I can effectively improve problems with logical order*). The general pattern for the item difficulty appears to be a progression from improving specific problems in an essay, to improving more abstract and complex problems.

The Rasch person reliability estimate was good at .87, meeting the .80 criterion, while the Rasch item reliability estimate was adequate at .79, but not meeting the criterion. The person separation index was 2.57, indicating that the participants were divided into two distinct groups in terms of their ability estimates. The separation index was low 1.93, indicating that there were two levels of item difficulty.

Summary of Preliminary Results for Academic Writing Self-Efficacy

Exploratory Factor analyses and Rasch analyses were conducted to assess the dimensionality of the subscales in the Academic Writing Self-Efficacy instrument. The EFA reduced the seven constructs that were originally hypothesized to four main constructs: Writing Self-Efficacy, Grammar Self-Efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy. The Rasch analyses results confirmed the four-factor solution and with the exception of the Writing Self-Efficacy scale for which one item (WSE 19) had infit values outside the criterion range and was therefore deleted from further analyses, the other three subscales retained the structure derived from EFA. In addition, all the subscales met the all criteria for the Rasch rating scale model, and confirmed that all the subscales for Academic Writing Self-Efficacy formed unidimensional constructs.

Goal Orientation

To assess the three main types of goal orientation (mastery, performance-approach, and performance-avoidance), I adapted the goal orientation scale from the Patterns of Adaptive Learning Survey (Midgley et al., 2000). The 14-item questionnaire consisted of three scales, each measuring a type of goal-orientation. The dimensionality of Goal Orientation was examined through EFA and Rasch analysis. Hereafter, I describe the initial data screening procedures, the results of EFA, and the results of

Rasch analyses including item dimensionality, item-fit, category function, person/item reliability and separation.

Initial Data Screening

Prior to analysis, Goal Orientation was examined through various SPSS programs for accuracy of data entry, and missing values. Of a total of 213 participants, 172 responded to the questionnaire. No missing values were found in the data for the 172 participants.

Goal Orientation Factor Analysis Results

After the initial data screening, an Exploratory Factor analysis with Maximum Likelihood extraction and direct oblimin rotation was conducted to assess the dimensionality of the Goal Orientation instrument. The scree plot, minimum eigenvalues of 1.0, and item loadings of no less than .45 (Stevens 2002) were used as the criteria for selecting the factors. The Kaiser-Meyer-Olkin (KMO = .90) indicated sampling adequacy for the analysis, and the Bartlett's test of sphericity χ^2 (91) = 1978.809, $p < .001$ indicated that correlations between the items were adequate to conduct the analysis.

The exploratory factor analysis yielded a 2-factor solution that accounted for 74% of the variance and had eigenvalues of 3.80 and 6.50 for the first and second factor, respectively. The Scree Plot (See Figure 7) indicated a clear inflection after the second factor. The solution indicated a different arrangement of items from what was originally hypothesized (See Table 27).

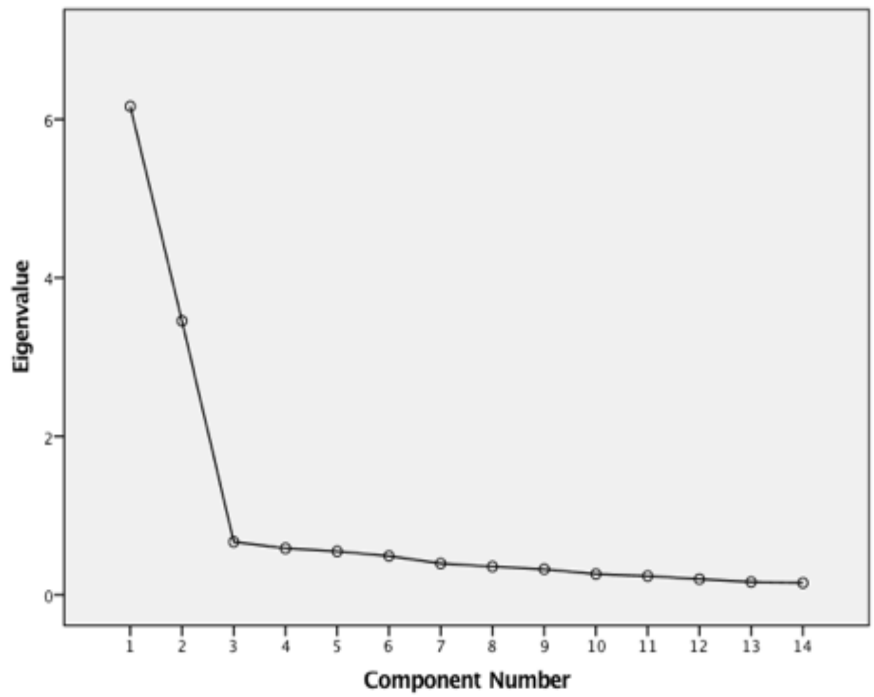

Figure 7. Scree plot for Goal Orientation.

The first factor, Mastery, remained unchanged, with all the original items (GO 1, GO 4, GO 7, GO 10, GO 13) loading on it. The loadings were strong ranging from .79 to .89. All the items assessed mastery goal-orientation in the writing class. Representative items included item 1 (*It is important to me that I learn a lot of academic writing skills in this class*) and item 4 (*One of my goals in this writing class is to learn as much as I can about academic writing*). An additional EFA conducted to assess the dimensionality of the 5 items yielded a one-component solution with strong loadings (.66-.74) that accounted for 76.64% of the variance.

The second factor, Performance-Avoidance, which originally included items GO 3, GO 6, GO 9, GO 12 and GO 14, gained all five items from the Performance-Approach scale (GO 2, GO 5, GO 8, GO 11). Representative items included Item 7 (*One of my goals in the writing class is to keep others from thinking I am not smart)* and (*One of my goals is to show others that I am good at writing* essays); therefore, this factor was re-labeled *Approach-Avoidance.* The EFA conducted to assess the dimensionality the nine items in this scale, yielded a one-factor solution with strong loadings (.57-.83) that accounted for 72.32% of the total variance.

Table 27. *14-Item Goal Orientation Scale Rotated Pattern Matrix*

Item	Mastery	Approach-Avoidance
GO 2*		.75
GO 3		.82
GO 5*		.86
GO 6		.88
GO 8*		.77
GO 9		.79
GO 11*		.69
GO 12		.90
GO 14		.91
GO 1	.82	
GO 4	.89	
GO 7	.83	
GO 10	.78	
GO 13	.84	
% of Variance	27.32	46.84
Eigenvalue	3.80	6.50
Reliability	.87	.88

Note. N = 172, % of Var = % of variance accounted for; Extraction Method: Principal components analysis; Rotation method: Oblimin with Kaiser Normalization. Items marked with an asterisk changed from their original subscales. Underlined loadings indicate the item did not achieve the cutoff value of .45 used in the study.

To summarize, the results of the exploratory factor analysis indicated that the participants clearly hold a mastery goal orientation. However, the participants did not seem to distinguish between performance-approach and approach-avoidance orientation, as the items originally designed to measure performance goal-orientation and approach-avoidance goal orientation combined to form only one construct: Approach-Avoidance goal orientation. As a result, only two factors Mastery goal orientation and Approach-Avoidance goal orientation were identified (See Table 28). To confirm the findings of the EFA, Rasch analysis was conducted on the two factors. I describe the results in the next section.

Table 28. *Comparison of Structure of Academic Writing Self-Efficacy*

Before EFA Structure		After EFA Structure	
Original Scale Label	Items	New Scale Label	Items
Mastery GO	1, 2, 3, 4, 5	Mastery	1, 2, 3, 4, 5
Per-Approach GO	6, 7, 8, 9	Approach-Avoidance	6, 7, 8, 9, 10,
Per-Avoidance GO	10, 11, 12, 13		11, 12, 13, 14

Note. EFA = Exploratory Factor Analysis; Per-Approach GO = Performance-Approach Goal Orientation; Per-Avoidance GO = Performance-Avoidance Goal Orientation.

Goal Orientation Rasch Analysis Results

The dimensionality of the two constructs identified through factor analysis was further re-assessed through Rasch analysis using WINSTEPS. As mentioned in the Methods chapter, five significant procedures of Rasch analysis were examined: item dimensionality, category function, Rasch fit statistics, Wright map, and item/person reliability and separation. Hereafter, I provide a detailed explanation of the results for the Goal Orientation scales: Mastery Goal-Orientation and Approach-Avoidance Goal-Orientation.

Mastery Goal Orientation

The original five items loading on the mastery scale were analyzed using the Rasch rating scale model. When examining the rating scale two problems were found: Category 1 (*Not true)* had an outfit MNSQ of 3.14, exceeding the criterion upper limit of 1.50, and categories 2 and 3 were not 3.69 CHIPS apart (See Table 29). The three categories also had a small number of responses. These results indicated that the original category had to be modified to meet the criteria. Therefore, categories 1, 2, and 3 were collapsed (recorded as 11145) for optimal functioning. After collapsing the categories, the observed measures were properly ordered, the Outfit MNSQ value met the criterion of less than 2, the threshold measures were properly ordered and increased with the rating scale categories, and the category thresholds had a separation greater than 6.37 CHIPS (for a 3-point scale).

Table 29. *Category Functioning Statistics for the 5-point Mastery Goal Orientation Scale*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Not true	101 (12)	-1.8	1.07	None	(-5.57)
2 Slightly true	0 (0)		.00	Null	-3.15
3 Somewhat true	0 (0)		.00	Null	-1.32
4 Almost true	219 (25)	2.7	1.08	-5.42	1.24
5 Very true	540 (63)	7.9	.86	5.42	(10.37)

After modifying the rating scales, the Rasch PCA of items residuals was conducted. The results are summarized in Table 30. The Rasch measures explained 54.1% of the variance (eigenvalue = 5.9), which exceeded the 50% criterion. The eigenvalue for the first contrast was 1.6 and accounted for 15.2% of the unexplained variance. This was below the 3.0 criterion for the first contrast eigenvalue, but was in excess of the 10% criterion for the unexplained variance in the first contrast. Person estimates were produced for the PCA of items residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .70, which was slightly below the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined.

Table 30. *Rasch Standardized Residual Variance Results for Mastery Goal Orientation*

	Eigenvalue	Percent of variance
Total raw variance in observations	10.9	100.0%
Raw variance explained by measures	5.9	54.1%
Raw variance explained by persons	4.0	36.6%
Raw Variance explained by items	1.9	17.4%
Raw unexplained variance (total)	5.0	45.9%
Unexplained variance in first contrast	1.6	15.2%
Unexplained variance in second contrast	1.3	12.1%
Unexplained variance in third contrast	1.1	9.9%
Unexplained variance in fourth contrast	1.0	8.7%
Unexplained variance in fifth contrast	.0	.0%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals (See Table 31) indicated that all the item residuals with negative loadings were related to learning and mastering writing skills (e.g., MGO 1: *It is important to me that I learn academic skills in this class*, MGO 2: *One of my goals is to learn as much as I can*; MGO 3: *One of my goals is to master a lot of new academic skills*). The item residuals with positive loadings were composed of two items stating a desire to *thoroughly understand* and *improve* academic writing skills (MGO 4 and MGO 5, respectively). However, as all the items indicated an orientation towards different levels of mastering the material, and the value for the first contrast of the item residuals was 1.9, indicating one dimension, the items were considered to form a unidimensional construct in spite of the slightly different patterns in the grouping of the items. Taken together, the results indicated that there was no significant second dimension measured by the items in the scale.

Table 31. *Item Residual Loadings for Mastery Goal Orientation*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
MGO 4	.89	51.8	1.04	1.12
MGO 5	.15	48.7	1.01	.91
Negative loadings				
MGO 3	-.20	50.8	.87	.94
MGO 1	-.33	48.5	1.21	1.18
MGO 2	-.73	50.2	1.06	.97

Note. MNSQ = mean square; *N* = 170.

Next, the item fit statistics were inspected. The point-measure correlations for the items were adequate, as they ranged from .65 to .75. This was an indication of the plausible dimensionality of the construct, as each of the items was reasonably well correlated with the whole scale. The Infit MNSQ and Outfit MNSQ for all items were within the .50-1.5 criterion with Infit MNSQ values ranging from .87 to 1.21 and Outfit MNSQ values from .94 to 1.18 (See Table 32).

Table 32. *Rasch Item Statistics and Inter-Item Correlation for Mastery Goal Orientation Scale*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
MGO 4	51.8	.4	1.04	.3	1.12	.7	.75
MGO 3	50.8	.4	.87	-.8	.94	-.3	.74
MGO 2	50.2	.5	1.06	.4	.97	-.1	.71
MGO 5	48.7	.5	1.01	.1	.91	-.3	.68
MGO 1	48.5	.6	1.21	1.0	1.18	.8	.65

Note. *N* = 172. SE = Standard Error. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 8 displays the Wright map for Mastery Goal Orientation. The CHIPS scale is displayed on the left side of the figure. Persons with higher mastery goal orientation and items that are more difficult to endorse are placed higher on the map, while persons

```
------------------------------------------------------------------------------
  More mastery     | More difficult to endorse items
  Oriented persons |
  100 ###########  +
                   |
                   |
                   |
                   |
                   |
   90              +
                   |
                   |
                   |
                   |
                   |
   80              +
                   |
                   |
                   |
                   |
                   |
                   |
   70              +
                   |
                   |
                  T|
                   |
             .####  |
   60             S+
               .#  |
                   |
                # M|
               .#  |T
             .###  |S MGO 3: master new academic writing skills
                   |  MGO 4: important I understand academic writing work
   50         .##  +M MGO 2: learn as much as I can about academic writing
               .# S|S MGO 1: important that I learn academic writing skills
                   |  MGO 5: important that I improve academic writing skills
                .  |T
                .  |
                  T|
                   |
   40              +
Less mastery       |Easier to endorse items
oriented persons   |
------------------------------------------------------------------------------
```

Figure 8. Wright map for Mastery Goal-Orientation. Each # is 6 persons; each **.** is 1 to 5 persons; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit on one page.

with lower mastery goal orientation and items that are easier to endorse are towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (54.5) indicate that the items were relatively easy for most of the participants. The most difficult item to endorse was MGO 4 (*It is important to me that I thoroughly understand my academic writing class work)* with a difficulty estimate of 51.8*,* while the two easiest items to endorse were MGO 1 (*It is important to me that I learn academic writing skills in this class*) with a difficulty estimate of 48.5 and MGO 5 (*It is important to me that I improve my academic writing skills in this class*) with a difficulty estimate of 48.7. An inspection of the empirical item hierarchy indicated that the level of mastery described in each item determined the difficulty of the items. The difficult to endorse items implied higher levels of achievement (e.g., MGO 4: *It is important to me that I thoroughly understand the writing class work*; MGO 3: *One of my goals is to master a lot of new academic writing skills in this class*); whereas the easy to endorse items and the items close to the mean implied focus on lower levels of achievement (e.g., MGO 2:*One of my goals in this writing class is to learn as much as I can;* MGO 1: *It is important to me that I learn academic writing skills in this class*). The general pattern for the item difficulty appears to be a progression from improving writing skills to mastering those skills.

The Rasch person reliability estimate was low (.49), not meeting the criterion of .80, while the Rasch item reliability estimate was good at .84, meeting the criterion. The person separation index was less than the recommended value of two (.98), indicating that the participants did not form distinct groups in terms of their ability estimates. The separation index was 2.32, indicating that there were two levels of item difficulty.

```
-----------------------------------------------------------------------------
  More mastery     | More difficult to endorse items
  Oriented persons |
  100 ###########  +
                   |
                   |
                   |
                   |
                   |
   90              +
                   |
                   |
                   |
                   |
                   |
   80              +
                   |
                   |
                   |
                   |
                   |
                   |
   70              +
                   |
                   |
                  T|
                   |
           .####   |
   60             S+
              .#   |
                   |
               # M|
              .#   |T
            .###   |S MGO 3: master new academic writing skills
                   |  MGO 4: important I understand academic writing work
   50        .##   +M MGO 2: learn as much as I can about academic writing
              .# S|S MGO 1: important that I learn academic writing skills
                   |  MGO 5: important that I improve academic writing skills
               .   |T
               .   |
                  T|
                   |
   40              +
Less mastery       |Easier to endorse items
oriented persons   |
-----------------------------------------------------------------------------
```

Figure 9. Wright map for Mastery Goal-Orientation. Each # is 6 persons; each **.** is 1 to 5 persons; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit on one page.

Approach-Avoidance Goal Orientation

The original nine items that loaded to this construct were analyzed using Rasch rating scale model. When examining the rating scale functioning, it was found that Category 5 (*Very True*) had a small number of responses and the Outfit MNSQ (= 1.65) exceeded the criterion range. Therefore, Category 5 was collapsed to Category 4 (recorded as 12344) for optimal functioning (See Table 33). After collapsing the categories, the observed measures were properly ordered, the Outfit MNSQ value met the criterion of less than 2. The threshold measures were properly ordered and increased with the rating scale categories, and the category thresholds had a separation greater than 5.00 CHIPS (for a 4-point scale).

Table 33. *Category Functioning Statistics for the 5-point Approach-Avoidance Goal Orientation Scale*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Not true	613 (41)	-12.6	.90	None	(-14.28)
2 Slightly true	406 (27)	-4.4	.76	-8.75	-4.96
3 Somewhat true	327 (23)	2.7	.92	-.82	4.61
4 true	172 (11)	4.0	1.59	9.57	14.89

After modifying the rating scales, the Rasch PCA of items residuals was conducted. The results are summarized in Table 34. The Rasch measures explained 62.1% of the variance (eigenvalue = 14.8), which exceeded the 50% criterion. The eigenvalue for the first contrast was 1.9 and accounted for 7.9% of the unexplained variance. This was below the 3.0 criterion for the eigenvalue of the first contrast and below the 10% criterion for the variance in the first contrast. Person estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .81, meeting the .80 criterion (Elwood, 2011), but the item residuals loadings were examined for confirmation.

Table 34. *Rasch Standardized Residual Variance Results for Approach Avoidance Goal Orientation*

	Eigenvalue	Percent of variance
Total raw variance in observations	23.8	100.0%
Raw variance explained by measures	14.8	62.1%
Raw variance explained by persons	10.0	42.0%
Raw Variance explained by items	4.8	20.2%
Raw unexplained variance (total)	9.0	37.9%
Unexplained variance in first contrast	1.9	7.9%
Unexplained variance in second contrast	1.6	6.8%
Unexplained variance in third contrast	1.4	5.8%
Unexplained variance in fourth contrast	1.2	5.0%
Unexplained variance in fifth contrast	.9	3.9%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals loadings indicated that neither the item residuals with positive loadings nor the item residuals with negative loadings formed patterns that could suggest a second dimension (See Table 35). The item residuals with positive loadings included items that emphasized avoidance and approach orientations (e.g., AAGO 1: *It is important to me to avoid looking stupid in class*; AAGO 7: *One of my goals is to show others that writing is easy for me*). The item residuals with negative loadings also included items with avoidance and approach orientation (AAGO 4: *One of my goals is to avoid looking like I have trouble writing*; AAGO 8: *One of my goals is to look smart in comparison to others*). Therefore, all the results indicated that the items in the Approach-Avoidance scale formed a single construct.

Table 35. *Item Residual Loadings for Approach Avoidance Goal Orientation*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
AAGO 1	.65	45.1	1.17	1.17
AAGO 7	.60	48.0	1.43	1.43
AAGO 5	.18	45.9	1.15	1.12
AAGO 6	.16	53.7	1.18	1.12
Negative loadings				
AAGO 3	−.14	51.3	.78	.73
AAGO 2	−.41	49.5	1.00	1.01
AAGO 9	−.51	53.3	.75	.69
AAGO 8	−.52	52.6	.83	.75
AAGO 4	−.56	50.5	.75	.78

Note. MNSQ = mean square; *N* = 170.

Next, the item fit statistics were inspected. The point-measure correlations for the items were high, as they ranged from .76 to .84. This indicated that each of the items in the scale was highly correlated with the whole scale, and it was an indication of the plausible unidimensionality of the construct. The Infit MNSQ and Outfit MNSQ for all items were within the .50-1.5 criterion with Infit MNSQ values ranging from .75 to 1.43 and Outfit MNSQ values from .82 to 1.43 (See Table 36).

Table 36. *Rasch Item Statistics and Inter-Item Correlation for Approach-Avoidance Goal Orientation Scale*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
AAGO 6	53.7	.6	1.18	1.4	1.12	.8	.75
AAGO 9	53.3	.6	.75	-2.2	.69	-2.2	.82
AAGO 8	52.6	.6	1.21	-1.5	.75	-1.8	.82
AAGO 3	51.3	.6	.83	-2.0	.73	-2.1	.83
AAGO 4	50.5	.6	.78	-2.3	.78	-1.8	.84
AAGO 2	49.5	.6	1.00	.1	1.01	.1	.81
AAGO 7	48.0	.6	1.43	3.4	1.43	3.1	.76
AAGO 5	45.9	.6	1.15	1.3	1.12	1.0	.81
AAGO 1	45.1	.6	1.17	1.4	1.17	1.3	.81

Note. *N* = 172. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 10 displays the Wright map for Approach-Avoidance Goal Orientation. The CHIPS scale is displayed on the left side of the figure. Persons with higher levels of approach-avoidance goal orientation and items that are more difficult to endorse are placed higher on the map, while persons with lower levels of approach-avoidance goal orientation and items that are easier to endorse are towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (47.00) indicate that the items were difficult to endorse for a fair number of participants. The most two most difficult items to endorse were AAGO 6 (*One of my goals is to show I am good at writing essays*) with a difficulty estimate of 53.7*,* and AAGO 9 (*One of my goals is to look smart in comparison to others*) with a difficulty estimate of 53.3. The two easiest items to endorse were AAGO 1 (*It is important to me to avoid looking stupid in class*) with a difficulty estimate of 45.1 and AAGO 5 (*It is important to me that others think I am good at writing essays*) with a difficulty estimate of 45.9. An inspection of the empirical item hierarchy indicated that difficult to endorse items measured students desire to give a good impression of themselves to others (e.g., AAGO 6: *One of my goals is to show I am good at writing essays*; AAGO 8: *One of my goals is to look smart in comparison to others*). The items close in the middle focused on avoiding giving a bad impression to others (AAGO 3: *It is important to me to avoid making the teacher think I know less than others*; AAGO 4: *One of my goals is to avoid looking like I have trouble writing*), whereas the easy to endorse items focused on how others perceived the respondents

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-------------------------------------------------------------------------------------
 More performance- |  More difficult to endorse items
 approach oriented |
 persons           |
70          #  +
                   |
                .  |
                  T|
                #  |
               .#  |
   60          .#  +
               .#  |
            #####  |T
              ### S|
              ###  |S AAGO 6: show I am good at writing essays
                   |  AAGO 8: look smart in comparison to others
                   |  AAGO 9: important that I look smart compared to others
            #####  |  AAGO 3: avoid making teacher think I know less than others
   50       .####  +M AAGO 4: avoid looking like I have trouble writing essays
                   |   AAGO 2: keep others from thinking I am not smart
            #####  |  AAGO 7: show others writing is easy for me
            ##### M|S
                   |  AAGO 1: important to avoid looking stupid in class
            #####  |  AAGO 5: important that others think I am good at writing essays
         .#######  |T
            .####  |
   40         .##  +
             .### S|
               ##  |
                   |
           ######  |
                   |
   30        .###  +
                  T|
                   |
                   |
                   |
                   |
                   |
   20              +
                   |
                   |
                   |
                   |
                   |
   10              +
                   |
                   |
                   |
                   |
                   |
    0############# +
 Less performance- | Easier to endorse items
 approach oriented |
 persons           |
-------------------------------------------------------------------------------------
```

Figure 10. Wright map for Approach-Avoidance Goal Orientation. Each # is 2 persons; Each **.** is 1 person; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit in one page.

(AAGO 5: *It is important to me that others think I am good at writing essays*; AAGO 1: *It is important to me to avoid looking stupid in class*). The general pattern for the item difficulty appears to be a progression from avoiding giving a bad impression to others, to proving superior skills in comparison to others.

The Rasch person reliability estimate was good at .86, meeting the .80 criterion while the Rasch item reliability estimate was high at .95, also meeting the criterion of .80. The person separation index was 2.43, indicating that there were two distinct groups in terms of their ability estimates. The separation index was 4.44, indicating that there were four levels of item difficulty.

Summary of Preliminary Results for Goal Orientation

Exploratory Factor analyses and Rasch analyses were conducted to first assess and subsequently confirm the dimensionality of the subscales for the Goal Orientation construct. The Goal Orientation construct was initially hypothesized to be composed of three types of goal orientation: mastery, performance-approach, and performance avoidance. The results of EFA, however, indicated that the participants in the study did not distinguish between the performance-approach goal orientation and performance avoidance orientation goal orientation, as the items for these two subscales merged to create a single approach-avoidance construct. The Rasch analysis confirmed the structure of the approach-avoidance construct. As the category functioning statistics were not meeting some of the criteria, the scales had to be collapsed for better functioning. After these modifications, the Rasch analyses confirmed that the items in the mastery goal orientation subscale and the items in the approach-avoidance subscale formed unidimensional constructs.

Writing Attitude

The 6-item Writing Attitude questionnaire was designed to measure the participants' overall attitudes towards writing. As with the other Likert scales instruments, Exploratory Factor analysis and Rasch analyses were conducted to first assess and subsequently confirm the validity and dimensionality of the items subsumed under this construct. Hereafter, I describe the initial data screening procedures, the results of EFA, and the results of the Rasch measurement analyses including item dimensionality, item-fit, category function, person/item reliability and separation.

Writing Attitude Initial Data Screening

Prior to the analysis, Writing Attitude was examined through various SPSS programs for accuracy of data entry, and missing values. Of a total of 213 participants enrolled in the classes that participated in the study, only 172 responded to this questionnaire. There were no cells with missing data in the sample, and univariate and multivariate outliers were not found in this data set.

Writing Attitude Factor Analysis Results

After the initial data screening, an Exploratory Factor analysis with Maximum Likelihood extraction and direct oblimin rotation was conducted to assess the dimensionality of the Writing Attitude instrument. The scree plot, minimum eigenvalues of 1.0, and item loadings of no less than .45 (Stevens, 2002) were used as the criteria for selecting the factors. The Kaiser-Meyer-Olkin (KMO = -.83) indicated sampling adequacy for the analysis, and the Bartlett's test of sphericity χ^2 (15) = 568.662, $p < .001$ indicated that correlations between the items were enough to conduct the analysis.

The EFA solution yielded a one-factor component that accounted for 56.94% of the variance with an eigenvalue of 3.73. The Scree Plot (See Figure 11) shows a clear inflection after the first factor. The six items had strong loadings ranging from .57 to .85 (See Table 37), suggesting the items formed a unidimensional construct. Representative items from the scale included WA 1 (*Academic writing is easy*) and WA 5 (*Academic writing is enjoyable*). The results of the EFA were also confirmed through Rasch analyses.

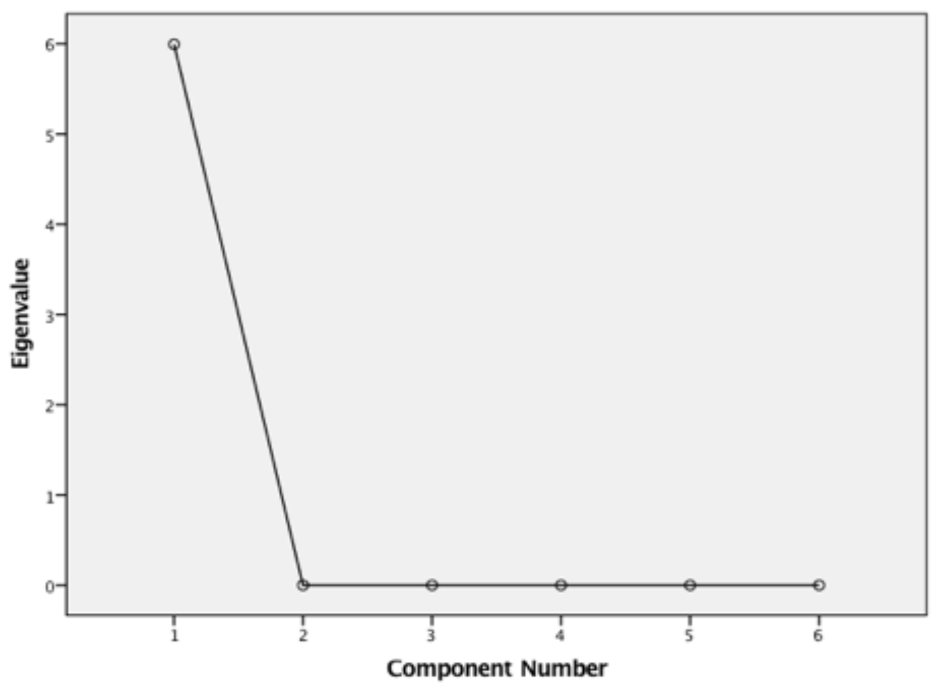

Figure 11. Scree plot for Writing Attitude.

Table 37. *Rotated Factor Matrix for Academic Writing Attitude*

Item	Loadings
WA 4	.85
WA 5	.82
WA 2	.80
WA 3	.72
WA 6	.70
WA 1	.57
% of Variance	56.94%
Eigenvalue	3.73
Reliability	.82

Note. N = 172; Extraction Method: Principal components analysis; Rotation method: Oblimin with Kaiser Normalization.

Writing Attitude Rasch Analysis Results

The Rasch PCA of item residuals was examined to re-assess the unidimensionality of the items. The PCA results confirmed that the items formed a unidimesional construct. The results are summarized in Table 38. The Rasch measures explained 64.2% of the variance (eigenvalue = 9.0), which exceeded the 50% criterion. The eigenvalue for the first contrast was 1.9 and accounted for 13.5% of the unexplained variance. This was below the 3.0 eigenvalue criterion for the first contrast, but slightly exceeding the 10% criterion for the variance in the first contrast. Person estimates were produced for the PCA items residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .76, which was slightly below the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined.

An inspection of the item residuals loadings (See Table 39) indicated that all the item residuals with positive loadings related to feelings about writing academic essays (e.g., WA 5: I enjoy writing academic essays; WA 2: Writing academic essays is interesting); while the item residuals with negative loadings included items associated with the value of writing. (e.g., WA 3: Writing academic essays has value to me; WA 6: Writing academic essays is rewarding). However, as the construct of Writing Attitude was operationally defined as feelings of interest and value towards writing, it was considered that the positive and negative items did not represent a second dimension, but only two aspects of one dimension: Writing Attitude. Therefore, the results were interpreted as indicating that the items in the Writing Attitude scale formed a unidimensional construct.

Table 38. *Rasch Standardized Residual Variance Results for Writing Attitude*

	Eigenvalue	Percent of variance
Total raw variance in observations	14.0	100.0%
Raw variance explained by measures	9.0	64.2%
Raw variance explained by persons	5.3	37.9%
Raw Variance explained by items	3.7	26.3%
Raw unexplained variance (total)	5.0	35.8%
Unexplained variance in first contrast	1.9	13.5%
Unexplained variance in second contrast	1.4	10.2%
Unexplained variance in third contrast	.9	6.8%
Unexplained variance in fourth contrast	.7	5.2%
Unexplained variance in fifth contrast	.0	.1%

Note. All statistics are based on Rasch CHIPS.

Table 39. *Item Residual Loadings for Writing Attitude*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
WA 5	.76	57.9	1.01	.98
WA 4	.39	53.2	.81	.78
WA 2	.39	51.9	.96	.96
Negative loadings				
WA 6	−.68	43.6	1.14	1.09
WA 3	−.74	43.4	1.07	1.10

Note. MNSQ = mean square; *N* = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 40, each category of the 4-points scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -13.8 in Category 1 to 13.6 in Category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The threshold measures were properly ordered increasing with the rating scale categories, and the category thresholds had a separation greater than 5 CHIPS (for a 4-point scale). Therefore, the 4-point rating scale was considered optimal for this construct.

Table 40. *Category Functioning Statistics for the 4-point Writing Attitude Scale*

	Count (%)	Observed average	Outfit MNSQ	Structure calibration	Category measure
1 Not at all true	156 (18)	-13.8	1.08	None	(-17.83)
2 Slightly true	290 (34)	-5.0	1.00	-12.61	-6.51
3 To some extent	282 (33)	4.0	1.00	-.28	6.37
4 Definitely true	127 (15)	13.6	.90	12.89	(18.07)

Next, the item fit statistics were inspected. The point-measure correlation for five of the items was high, as they ranged from .74 to .83. This indicated that each of the items was relatively highly correlated with the whole scale and that the items were possibly measuring one construct. With the exception of WA 1 (*Academic Writing is Easy*), which also had an acceptable point-measure correlation (.40), all the items were within the Infit MNSQ and Outfit MNSQ .50-1.5 criterion (See Table 41). To investigate whether WA 1 (*Academic Writing is Easy*) should be deleted from subsequent analysis, nine persons (5% of the total sample) with the most unexpected responses were temporarily deleted and the analysis was re-run. The statistics for WA 1 did not improve: Infit MNSQ = 1.55 and Outfit MNSQ = 2.13. The Pearson correlation between person measures with positive and negative loadings was also calculated to assess the impact of deleting WSE 19 on the person measures. The Pearson correlation for the person measures with and without WA 1 dropped slightly from .69 to .62, suggesting that the item should not be excluded. However, a conceptual inspection of the items indicated that WA 1 differed from the other items in that it did not describe feelings or value towards writing, but instead it described a cognitive evaluation of the act of writing in English. As such, it did not match the operational definition of writing attitudes used in the current study. Therefore, a decision was made to eliminate WA 1 from further analyses.

Table 41. *Rasch Item Statistics and Inter-Item Correlation for Writing Attitude*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
WA 1	62.7	.8	1.88	5.4	1.88	2.8	.40
WA 5	54.1	.6	.86	-1.3	.84	-1.3	.74
WA 4	50.1	.6	.73	-2.9	.70	-3.1	.81
WA 2	49.1	.6	.79	2.2	.77	-2.3	.76
WA 6	42.1	.6	1.12	1.1	1.12	1.0	.70
WA 3	42.0	.6	.92	-.7	.95	-.4	.75

Note. *N* = 172. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

With the exclusion of item WA 1, all the remaining items subsumed under the Writing Attitude construct had infit MNSQ and outfit MNSQ statistics within the range of .50 and 1.50 (See Table 42).

Table 42. *Rasch Item Statistics and Inter-Item Correlation for Writing Attitude Without Item WA 1*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
WA 5	57.9	.7	1.01	.1	.98	-.1	.75
WA 4	53.2	.6	.81	-1.9	.78	-2.1	.83
WA 2	51.9	.6	.96	-.3	.96	-.4	.76
WA 6	43.6	.6	1.14	1.3	1.09	.8	.74
WA 3	43.4	.6	1.07	.6	1.10	.9	.74

Note. *N* = 172. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 12 displays the Wright map for Writing Attitude. The CHIPS scale is displayed on the left side of the figure. Persons who have a more positive attitude towards writing and items that are more difficult to endorse are placed higher on the map. Conversely, persons who have a less positive attitude and items that are easier to endorse are towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (49.00) indicated that the items were adequately targeting this group and were neither too difficult or too easy for the participants. The most difficult item to endorse was WA 5 (*I enjoy writing academic essays)* with a difficulty estimate of 57.9*,* while the easiest item to endorse was WA 3 (*Writing academic essays has value to me*) with a difficulty estimate of 43.4. An inspection of the empirical item hierarchy indicated that the difficulty of the items was determined by whether the items described feelings towards writing or beliefs about the value of writing. The difficult to endorse items assessed the participants' feelings towards writing academic essays (e.g., WA 5: *I enjoy writing academic essays*; WA 4: *I look forward to writing academic essays*), whereas the easy

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  Persons with more  |  More difficult to endorse items
  positive writing   |
  Attitude           |
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   70                +
                    T|
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                ###  |
                     |T
   60      .#######  +
                    S|  WA 5: I enjoy writing academic essays
         ##########  |S
                     |
             ######  |  WA 4: I look forward to writing academic essays
           ########  |  WA 2: Writing academic essays is interesting
   50                +M
          ######### M|
                     |
            .######  |
        ###########  |S WA 6: Writing academic essays is rewarding
                     |  WA 3: Writing academic essays has value to me
                     |
   40      .####### S+
                     |T
               ####  |
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             ######  |
                     |
   30               T+
                  #  |
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                     |
                     |
   20                +
   Persons with less |  Easier to endorse items
   positive writing  |
   Attitudes         |
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Figure 12. Wright map for Writing Attitude. Each # is 2 persons; Each . is 1 person; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit in one page.

to endorse items assessed the value of academic writing (e.g., WA 6: *Writing academic essays is rewarding*; WA 3: *Writing academic essays has value to me*). Thus, the general pattern for the difficulty of the items appears to be a progression from appreciating the value of writing, to expressing positive feelings towards writing academic essays to expressing positive feelings about writing.

The Rasch person reliability estimate was good at .81, while the Rasch item reliability estimate was excellent at .99, both meeting the criterion of .80. The person separation index was 2.07, indicating that the participants were divided into two distinct groups in terms of their ability estimates. The item separation index was 8.70, indicating that there were eight levels of item difficulty.

Summary of Preliminary Results for Writing Attitude

Exploratory Factor analysis and Rasch analyses were conducted to assess the dimensionality of the Writing Attitude construct. The results of EFA confirmed a 6-items structure. However, Rasch analysis indicated that one item that assesses the difficulty level of the act of writing (WA 1) did not have fit statistics within the range criterion used in the current study. In addition, this item did not match the conceptualization of the construct as feelings towards writing and the value of writing. The item was therefore deleted from further analysis. The Rasch analyses confirmed that the remaining five items for this scale formed a unidimensional construct.

Self-Regulated Learning Strategy Use

SRL strategy use was assessed through the administration of three identical questionnaires for drafts 1, 2, and 3 of the essay. The questionnaires used a dichotomous scale (1= *yes;* 0 = *no*) and included nine questions that required students to indicate the strategies they had or had not used to achieve a particular goal. Question 1 asked about strategy use to ensure they understood essay requirements before writing; question 2, strategies for making writing the draft less difficult before writing, question 3, strategies to motivate themselves to begin writing; question 4, strategies to monitor writing while writing; question 5, strategies to adjust learning environment while writing; question 6, strategies to solve problems while writing; question 7, strategies to enhance motivation while writing; question 8, strategies to assess their writing after completing the draft; and question 9; strategies used to complete the draft on time. Based on the focus of each of the questions, I gave each set of strategies a different label to facilitate understanding: Understand Requirements, Reduce Task Difficulty, Increase Motivation to Write, Monitor Writing, Adjust Environment, Solve Problems, Increase Motivation to Continue Writing, Assess Writing, and Time Management. Hereafter, I use these labels to describe the Rasch analyses results.

Prior to conducting Rasch, a composite score for strategy use was obtained by adding the participants' responses for all three drafts. For example, if a participant answered 1, 0, and 1 for a particular strategy in drafts 1, 2 and 3, respectively, the composite score for this participant on this strategy was 2. As a result of producing a composite score, the original dichotomous scale changed to a 4-point scale (0 = *Did not use at all;* 1 = *Used a little;* 2 = *Used some;* 3 = *Used a lot*). The composite scores were used for Rasch analyses.

Self-Regulated Learning Strategy Use Initial Data Screening

The data was examined for accuracy of data entry, and missing values using SPSS. Of the 172 participants with complete data sets for previous questionnaires, 164 responded to all three drafts questionnaires, seven had responded to the questionnaires for only two drafts, and one did not complete any questionnaires. The participant with missing values for all three drafts was eliminated from the study. As eliminating seven more participants would greatly reduce the sample size, for the seven participants who responded to only two drafts, the sum of their responses to the two drafts were multiplied by 1.5 and used as values for the missing draft. Therefore, with the elimination of that one participant, the total sample size for this analysis was 171.

Self-Regulated Learning Strategy Use Rasch Analysis Results

Understand requirements. The Rasch PCA of item residuals was conducted to assess the unidimensionality of this construct. The results are summarized in Table 43. The Rasch measures explained 70.0% of the variance (eigenvalue = 21.0), which exceeded the 50% criterion. The eigenvalue for the first contrast was 2.5 and accounted for 8.5% of the unexplained variance. This was below the 3 criterion for eigenvalue of the first contrast and below the 10% criterion for the variance in the first contrast. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was fair at .45, but below the .80 criterion (Elwood, 2011), suggesting the presence of a second dimension. Therefore, the item residuals loadings were examined.

Table 43. *Rasch Standardized Residual Variance Results for Understanding Requirements*

	Eigenvalue	Percent of variance
Total raw variance in observations	30.0	100.0%
Raw variance explained by measures	21.0	70.0%
Raw variance explained by persons	7.9	26.4%
Raw Variance explained by items	13.1	43.6%
Raw unexplained variance (total)	9.0	30.0%
Unexplained variance in first contrast	2.5	8.5%
Unexplained variance in the second contrast	1.8	5.9%
Unexplained variance in third contrast	1.1	3.7%
Unexplained variance in fourth contrast	1.0	3.2%
Unexplained variance in fifth contrast	.8	2.6%

Note. All statistics are based on Rasch CHIPS.

An inspection of the items residuals with positive loadings and negative loadings indicated that neither the items residuals with positive loadings nor the items residuals with negative loadings formed a specific pattern that could suggest a second dimension (See Table 44). The item residuals with positive loadings included three items that focused on interacting with others such as friends, classmates, or a study group to be able to understand requirements (UR 1, UR 2, UR 9, respectively). The item residuals with negative loadings included items that described individual efforts to understand requirements as well as asking other people, such as the teacher or tutor for help (e.g., UR 5: *I reviewed the readings by myself*; UR 6: *I reviewed essay prompt*; UR 4: *I asked a tutor for help*). As the items in the scale were not intended to assess the use of a specific type of strategy, but the use of different possible strategies to achieve a goal, Understand Requirements, and considering that the items met all other criteria for unidimensionality, it was concluded that the items formed a unidimensional construct, in spite of the low disattenuated correlation.

Table 44. *Item Residual Loadings for Understanding Requirements*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
UR 1	.64	51.7	.93	.88
UR 9	.64	61.6	1.15	1.11
UR 2	.61	53.6	.86	.84
Negative loadings				
UR 3	-.11	53.8	1.03	1.45
UR 4	−.23	57.2	1.09	1.22
UR 8	−.50	47.7	1.08	1.33
UR 7	−.51	42.8	1.10	.70
UR 5	−.54	41.4	.86	1.59
UR 6	−.63	40.0	.71	.85

Note. MNSQ = mean square; *N* = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 45, each category of the 4-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -6.1 in Category 1 to 8.9 in Category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories. The category thresholds between Category 1 and 2 and between Category 3 and 4 had a separation of at least 5.00 CHIPS, meeting the criterion for a 4-points scale, but the separation threshold for Category 2 and Category 3 was only 3.57 CHIPS apart. However, considering that all the other criteria for rating scale functioning were met, a decision was made not to collapse Category 2 and 3, as useful information about the respondents' use of SRL may be lost by collapsing the categories. Therefore, the 4-point rating scale was considered adequate, but not optimal for this construct.

Table 45. *Category Functioning Statistics for the 4-point Understand Requirements*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Did not use at all	437 (28)	-6.1	1.11	None	(-7.25)
2 Used a little	206 (13)	-1.4	.87	-.43	-1.77
3 Used Some	169 (11)	2.4	1.30	1.32	1.98
4 Used a lot	727 (47)	8.9	1.11	-.90	(6.98)

Next, the item fit statistics were inspected. The point-measure correlation for the items varied greatly with values from .29 to .72. This indicated that while some of the items were highly correlated with the whole scale, others were not. With the exception of UR 5 (*I reviewed readings by myself*), the Infit MNSQ and Outfit MNSQ values for all other items were within the .50 -1.5 criterion (See Table 46).

Table 46. *Rasch Item Statistics and Inter-Item Correlation for Understand Requirements*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
UR 9	61.6	.7	1.15	.8	1.11	.5	.49
UR 4	57.2	.4	1.09	.7	1.22	1.2	.52
UR 3	53.8	.4	1.03	.3	1.45	2.9	.50
UR 2	53.6	.4	.86	-1.4	.84	-1.2	.72
UR 1	51.7	.4	.93	-.7	.88	-.9	.70
UR 8	47.7	.4	1.08	.7	1.33	1.5	.50
UR 7	42.8	.7	1.10	.5	.70	-.8	.42
UR 5	41.4	.8	.86	-.5	1.59	1.4	.29
UR 6	40.0	1.0	.71	-1.0	.85	-.2	.35

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

To investigate whether UR 5 should be deleted from subsequent analysis, 9 persons (5% of the total sample size of 171) who gave the most unexpected responses were temporarily deleted and the analysis was re-run. The statistics for UR 5 improved with an Infit MNSQ of .57 and Outfit MNSQ of .21. Therefore, the item was retained, as the misfit values appeared to have been caused by a few unexpected responses.

The Wright map for Understand Requirements is displayed in Figure 13. The CHIPS scale is displayed on the left side of the figure. Persons reporting more use of strategies and items that are more difficult to endorse are placed higher on the map. Conversely, persons reporting less use of strategies and items that are easier to endorse are located towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (52.60) indicate that for a fair number of respondents the items were easy to endorse. The most difficult item to endorse was UR 9 (*I joined a study group*), while the easiest item to endorse was UR 6 (*I reviewed essay prompt by myself*). An inspection of the empirical item hierarchy indicated that the difficulty order was mainly determined by whether the students exercise individual effort or seek someone else's help. The easy to endorse items (e.g., UR 5: *I reviewed readings by myself;* UR 7: *I reviewed relevant handouts*) involved individual effort. The items around the middle described both self-revision of the requirements and asking others for help (e.g., UR 8: *I reviewed ARS*; UR1: *I talked to friends*), whereas the difficult to endorse items (e.g., UR 3: *I asked a teacher for help*; UR 4: *I asked a Teaching Learning Center Tutor for help*) involved interaction with someone else. The respondents perceived closeness to the person they asked for help also seemed to have influenced the difficulty level as they found asking a TLC tutor for help (UR 4) more difficult than asking teachers and friends (UR 3, UR 1). Therefore, the general pattern for the item difficulty appears to be the progression from individual attempts to understand the requirements seeking, to seeking assistance from others, and to opting for joining a study group.

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   Persons using more| More difficult to endorse strategies
   strategies        |
   70                +
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                  .  |
                 .# T|  UR 9: joined study group
   60            ##  +
                 .#  |
           .####### S|S UR 4: asked TLC tutor
            .######  |
         ########## M|  UR 3: asked teacher
                     |  UR 2: asked classmates
         .#########  |  UR 1: talked to friends
   50          .###  +M
          .######## S|  UR 8: reviewed ARS
               .###  |
                  #  |
                    T|S UR 7: reviewed relevant handouts
                  #  |  UR 5: reviewed readings myself
   40                +  UR 6: reviewed essay prompt
                     |
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                     |T
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Persons using less   |  Easier to endorse strategies
strategies           |
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Figure 13. Wright map for Understand Requirements. Each # is 3 persons; each **.** is 1-2 persons; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit in one page.

The Rasch person reliability estimate was low at .66, not meeting the .80 criterion, while the Rasch item reliability estimate was excellent .99, exceeding the .80 criterion. The person separation index was 1.39, indicating that the participants were divided into one group in terms of their ability estimates. The item separation index was high at 11.17, indicating a wide spread of items.

Reduce task difficulty. A Rasch PCA of item residuals was conducted to assess the unidimensionality of the ten items subsumed under the Reduce Task Difficulty construct. The results are summarized in Table 47. The Rasch measures explained 43.8% of the variance (eigenvalue = 7.0), which was slightly below the 50% criterion. The eigenvalue for the first contrast was 2.2 and accounted for 13.5% of the unexplained variance. This was below the 3.0 criterion for the eigenvalue in the first contrast but slightly in excess of the 10% criterion for the variance in the first contrast. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was low at .36, suggesting the presence of a second dimension, and not meeting the .80 criterion (Elwood, 2011). Therefore, the item residual loadings were examined.

Table 47. *Rasch Standardized Residual Variance Results for Reduce Task Difficulty*

	Eigenvalue	Percent of variance
Total raw variance in observations	16.0	100.0%
Raw variance explained by measures	7.0	43.8%
Raw variance explained by persons	3.0	18.7%
Raw Variance explained by items	4.0	25.1%
Raw unexplained variance (total)	9.0	56.2%
Unexplained variance in first contrast	2.2	13.5%
Unexplained variance in second contrast	1.4	9.0%
Unexplained variance in third contrast	1.4	8.7%
Unexplained variance in fourth contrast	1.2	7.3%
Unexplained variance in fifth contrast	.9	5.5%

Note. All statistics are based on Rasch CHIPS.

An inspection of the items with positive and negative residuals loadings did not indicate a distinct pattern (See Table 48). The item residuals with positive loadings included items that described seeking help from others, as well as planning (e.g., RTD 3: *I discussed ideas with the teacher;* RTD 6: *I checked the schedule and decided on the best times to write*). The item residuals with negative loadings were varied and focused on discussing ideas with others, planning, and reflecting on the difficulty of the task (e.g., RTD 2: *I talked to my friend about ideas for the essay*; RTD 5: *I made a plan to work on different parts on different days*; RTD 1: *I asked myself how difficult it would be to complete the draft*). As the items were intended to assess the use of different possible strategies to achieve the goal of reducing task difficulty, and considering that the items met all most of the other criteria for unidimensionality, it was concluded that the items formed a unidimensional construct, Reduce Task Difficulty, in spite of the low disattenuated correlation.

Table 48. *Item Residual Loadings for Reduce Task Difficulty*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
RT 6	.63	49.2	.84	.71
RT 8	.62	47.2	1.05	1.02
RT 9	.61	45.5	1.09	.81
RT 7	.54	48.8	.77	.70
Negative loadings				
RT 4	−.14	48.8	1.01	.96
RT 5	−.23	50.9	.90	.98
RT 1	−.41	51.5	1.21	1.14
RT 3	−.45	54.7	.99	1.20
RT 2	−.53	53.3	1.21	1.21

Note. MNSQ = mean square; N = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 49, each category of the 4-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -1.7 in Category 1 to 5.3 in Category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories. The category thresholds between Category 1 and 2 and between Category 3 and 4 had a separation of at least 5.00 CHIPS, meeting the criterion for a 4-points scale, but the separation threshold for Category 2 and Category 3 was only 3.74 CHIPS apart. However, considering that all the other criteria for rating scale functioning were met, a decision was made not to collapse Category 2 and 3, as useful information about the respondents' use of SRL may be lost by collapsing the categories. Therefore, the 4-point rating scale was considered adequate, but not optimal for this construct.

Table 49. *Category Functioning Statistics for Reduce Task Difficulty*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Did not use at all	270 (18)	-1.7	1.09	None	(-7.10)
2 Used a little	215 (14)	-.3	.81	.16	-1.86
3 Used Some	286 (19)	2.6	1.02	.13	1.88
4 Used a lot	767 (50)	5.3	1.08	-.29	(7.07)

Next, the item fit statistics were inspected. The point-measure correlation for the items was fairly adequate ranging from .44 to .60. This indicated that each of the items was fairly well correlated with the whole scale and plausibly measuring one construct.

The Infit MNSQ and Outfit MNSQ values for all the items were within the .50 -1.5 criterion (see Table 50).

Table 50. *Rasch Item Statistics and Inter-Item Correlation for Reduce Task Difficulty*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
RTD3	54.7	.4	.99	-.1	1.20	1.5	.53
RTD2	53.3	.4	1.21	2.2	1.21	1.7	.54
RTD1	51.5	.4	1.21	2.1	1.14	1.1	.56
RTD5	50.9	.4	.90	-1.0	.98	-.1	.56
RTD6	49.2	.4	.84	-1.6	.71	-2.0	.59
RTD4	48.8	.4	1.01	.1	.96	.2	.50
RTD7	48.8	.4	.77	-2.1	.70	-2.0	.60
RTD8	47.2	.5	1.05	.4	1.02	.2	.44
RTD9	45.5	.6	1.09	.6	.81	-.7	.44

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 14 displays the Wright map for Reduce Task Difficulty. displays the Wright map for Reduce Task Difficulty. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (52.00) indicate that the items were fairly easy for this group of participants. The most difficult item to endorse was RTD 3 (*I discussed ideas with the teacher*), while the easiest item to endorse was RTD 9 (*I ensured that the working space was comfortable*). An inspection of the empirical item hierarchy indicated that the difficulty order was mainly determined by type of strategy they used to achieve the goal of making the task easier. The easy to endorse items included strategies for monitoring the environment (e.g., RTD 9: *I ensured my working space was comfortable;* RTD 8: *I found a quiet place without distractors*; RTD 7: *I planned to write at a time that I can concentrate*).

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-------------------------------------------------------------------------------
Persons using        |  More difficult to endorse strategies
more strategies      |
  100           .#   +
                     |
                     |
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                     |
                     |
   90                +
                     |
                     |
                     |
                     |
                     |
   80                +
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                     |
                     |
                     |
                     |
                     |
   70                +
                     |
                     |
                     |
                     |
                .#   |
   60               T+
               ###   |
           .###### S|
        .#########   |T RTD 3: discussed ideas with teacher

          ######## M|S RTD 2: talked to friends about essay ideas
        ##########   |  RTD 1: asked myself how difficult it would be
                     |  RTD 5: made a plan to work on different parts on
                                different days
   50   ########## S+M RTD 6: checked schedule and decided on best times to
                                write
              .###   |  RTD 4: visualized draft
                        RTD 7: planned to write at a time when I can
                                concentrate
                .#   |S RTD 8: found a quiet place without distractors
                ## T|T RTD 9: ensured working space was comfortable
                     |
                     |
   40                +
Persons using        |
fewer strategies     | More difficult to endorse strategies
-------------------------------------------------------------------------------
```

Figure 14. Wright map for Reduce Task Difficulty. Each # is 3 persons; each **.** is 1-2 persons; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit in one page.

The items around middle focused on making a plan (e.g., RTD 6: *I checked scheduled and decided on the best times to writing*; RTD 5: *I made a plan to work on* *different parts on different days*), whereas the more difficult to endorse items involved self-reflection and discussing ideas with someone else (e.g., RTD 1: *I asked myself how difficult it would be*; RTD 2: *I talked to friends about essay ideas;* RTD 3*: I discussed ideas with the teacher*). Therefore, the general pattern for the item difficulty appears to be a progression from adjusting the environment to planning time, and to discussing ideas with others.

The Rasch person reliability estimate was poor at .63, below the .80 criterion, while the Rasch item reliability estimate was excellent at .98, meeting the .80 criterion. The person separation index was 1.32, indicating that the participants were divided into one group in terms of their ability estimates. The separation index was high at 6.28, indicating six groups in terms of item difficulty estimates.

Increase motivation to write. A Rasch PCA of item residuals was conducted to assess the unidimensionality of the nine items in this question. The results are summarized in Table 51. The Rasch measures explained 58.2% of the variance (eigenvalue = 11.6), which exceeded the 50% criterion. The eigenvalue for the first contrast was 1.7 and accounted for 9.4% of the unexplained variance. This was below the 3.0 eigenvalue criterion for the first contrast and below the 10% criterion for the variance in the first contrast. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was adequate at .68, indicating that the person measures had more than half of their variance in common, and not meeting the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined for confirmation.

Table 51. *Rasch Standardized Residual Variance Results for Increase Motivation to Write*

	Eigenvalue	Percent of variance
Total raw variance in observations	16.7	100.0%
Raw variance explained by measures	9.7	58.2%
Raw variance explained by persons	5.1	30.6%
Raw Variance explained by items	4.6	27.5%
Raw unexplained variance (total)	7.0	41.8%
Unexplained variance in first contrast	1.7	9.4%
Unexplained variance in second contrast	1.4	8.2%
Unexplained variance in third contrast	1.2	7.5%
Unexplained variance in fourth contrast	1.0	6.0%
Unexplained variance in fifth contrast	.9	5.4%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals loadings indicated that neither the items residuals with positive loadings nor the items residuals with negative loadings formed distinctive patterns that could suggest a second dimension (See Table 52). The items residuals with positive loadings were related to reminders of the grades or points for the essay as well as reminders of the consequences of not writing (e.g., IMW 5: *I reminded myself of my grade goal for this class*; IMW 8: *I reminded myself of my grade goal for the essay*; IMW 4: *I thought about the consequences if I did not begin writing*). The items residuals with negative loadings were more varied including self-talk, reminders, as well as promises (e.g., IMW 6: *Self-talk: "You can do it"*; IMW 1: *I reminded myself that draft 1 is important to write a good essay*; IMW 3: *I promised myself a reward after finishing*). Taking all the results together, the items were considered to form a unidimensional scale, as the distribution of the items with positive and negative loadings did not indicate the presence of a contradictory dimension.

Table 52. *Item Residual Loadings for Increase Motivation to Write*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
IM 5	.71	49.2	.61	.53
IM 2	.51	46.6	.73	.49
IM 8	.50	49.7	.73	.77
IM 4	.10	48.0	1.70	2.30
Negative loadings				
IM 1	−.04	44.1	.80	.79
IM 3	−.53	58.7	1.10	1.33
IM 6	−.65	53.3	1.17	1.21

Note. MNSQ = mean square; *N* = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 53, each category of the 4-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -3.8 in category 1 to 7.6 in category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories. The category thresholds between Category 1 and 2 and between Category 3 and 4 had a separation of at least 5.00 CHIPS, meeting the criterion for a 4-points scale, but the separation threshold for Category 2 and Category 3 was only 4.00 CHIPS apart. However, considering that all the other criteria for rating scale functioning were met, a decision was made not to collapse Category 2 and 3, as useful information about the respondents' use of SRL may be lost by collapsing the categories. Therefore, the 4-point rating scale was considered adequate, but not optimal for this construct.

Table 53. *Category Functioning Statistics for Increase Motivation to Write*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Did not use at all	171 (14)	-3.8	1.15	None	(-7.59)
2 Used a little	118 (10)	-.3	.75	-.70	-1.97
3 Used some	158 (11)	3.5	1.03	.37	2.03
4 Used a lot	750 (47)	7.7	1.30	.32	(7.50)

Next, the item fit statistics were inspected. The point-measure correlations for seven of the items were adequate to high, as they ranged from .51 to .76. This indicated that each of the items was fairly well correlated with the whole scale, and it was an indication of the plausible unidimensionality of the construct. With the exception of IMW 7 (*I waited until the last day to begin writing*), the Infit MNSQ and Outfit MNSQ values for all other items were within the .50 -1.5 criterion (See Table 54). To investigate whether IMW 7 should be deleted from subsequent analysis, 9 persons (5% of the total sample size of 171), who gave the most unexpected responses for the item, were temporarily deleted and the analysis was re-run. The statistics for IMW 7 did not improve as IMW 7 had an Infit MNSQ value of 1.40 and Outfit MNSQ of 2.85. The Pearson correlation between person measures with positive and negative loadings was also calculated to assess the impact of deleting WSE 19 on the person measures. The Pearson correlation for the person measures with and without item IMW 7 increased from .51 to .62, suggesting the item should be excluded. In addition, a conceptual examination of IMW 7 indicated that, unlike other items, IMW7 described a maladaptive strategy (waiting until the last day before the deadline to begin writing). Therefore, the item was deleted from subsequent analysis and the analysis was rerun.

After deleting IMW 7, item IMW 4 (*I thought about the consequences if I did not begin writing*) had infit and outfit MNSQ values outside the criterion range of 0.5 and 1.5 (See Table 55). Item IMW 4 had an infit MNSQ value of 1.70 and outfit MNSQ value of 2.30. To determine whether IMW 4 had to be deleted from subsequent analyses, 9 persons with the most unexpected responses for item IMW 4 were temporarily deleted and the analysis was rerun. The statistics for IMW 4 improved with an Infit MNSQ value of 1.63 and Outfit MNSQ value of 1.64, but were still slightly above the criterion level. Nonetheless, IMW 4 was retained because, unlike IMW 7, item IMW 4 described a strategy to motivate the respondents to begin writing. In addition, IMW 2 (*I reminded myself that the points count towards the final grade)* had outfit values below the .05 criterion. However, this item was retained, as such values are “less productive but not degrading” (Linacre, n.d.).

Table 54. *Rasch Item Statistics and Inter-Item Correlation for Increase Motivation to Write*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
IMW7	57.5	.4	1.60	4.8	2.48	6.1	.29
IMW3	54.8	.4	.88	-1.2	.93	-.4	.52
IMW6	52.1	.4	1.09	.8	1.01	.1	.50
IMW8	48.9	.5	.67	-2.3	.58	-2.3	.42
IMW5	48.4	.5	.59	-2.0	.44	-2.2	.72
IMW4	47.3	.5	1.50	3.0	1.50	1.8	.50
IMW2	46.1	.6	.64	-2.5	.36	-2.4	.70
IMW1	45.0	.6	.81	-1.0	.78	-.6	.49

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Table 55. *Rasch Item Statistics and Inter-Item Correlation for Increase Motivation to Write Without IMW 7*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
IMW 3	57.5	.5	1.10	.8	1.33	1.7	.77
IMW 6	53.6	.4	1.17	1.4	1.21	1.3	.73
IMW 8	49.7	.5	.73	-2.3	.77	-1.2	.71
IMW 5	49.2	.5	.61	-3.4	.53	-2.5	.73
IMW 4	48.0	.5	1.70	4.0	2.30	4.0	.49
IMW 2	46.6	.6	.73	-1.7	.49	-2.1	.65
IMW 1	45.5	.7	.81	-1.0	.78	-.6	.60

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 15 displays the Wright map for Increase Motivation to Write. The CHIPS scale is displayed on the left side of the figure. Persons using more strategies to increase their motivation to write and items that are more difficult to endorse are placed higher on the map. Conversely, the persons using fewer strategies and the items that are easier to endorse are located towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (56.10) indicated that the items were easy to endorse for a fair number of participants. The most difficult item to endorse was IMW 3 (*I promised myself a reward*)*,* while the easiest item to endorse was IMW 1 (*I reminded myself that draft 1 is important to write a good essay*). An inspection of the empirical item hierarchy indicated that the easy to endorse items focused on reminders of the value of the writing the essay (e.g., IMW 1: *I reminded myself that draft 1 is important to write a good essay;* and IMW 2: *reminded myself that points for the draft count towards the final grade*). The items in the middle were more varied and included reminders of the grade

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-------------------------------------------------------------------------------
Persons using more   |  More difficult to endorse strategies
Strategies           |
                     |
  100  .############ +
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                     |
   90                +
                     |
                     |
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                     |
   80                +
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                     |
                     |
   70                +
                     |
                     |
                    T|
                     |
          .####      |
   60    .#####     S+
         .#####      |T IMW 3: promised myself a reward after finishing
           ####      |
            ###     M|
         ######      |S IMW 6: self-talk: "You can do it"
         .#####      |
   50      ####     S+M IMW 8: reminded myself of my grade goal for essay
            .##      |  IMW 5: reminded myself of my grade goal for class
                        IMW 4: thought about consequences
            .##      |S IMW 2: reminded myself that points count towards final
                                grade
              .     T|  IMW 1: reminded myself that draft 1 is important to
                                write good essay
              .      |
              .      |T
   40                +
Persons using less   | Easier to endorse items
strategies
-------------------------------------------------------------------------------
```

Figure 15. Wright map for Increase Motivation to Write. Each # is 3 persons: Each . is 1 to 2 persons; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been annotated to fit in one page.

of the essay (IMW 6), whereas the difficult to endorse items focused on self-encouragement and self-rewards (IMW 6: *I told myself "You can do it"*; IMW 3: *I* *promised myself a reward after finishing the draft*). The general pattern for the item difficulty appears to be a progression from reminders about the intrinsic value of begging to write the essay, to reminders about the extrinsic value of writing the essay, to promising rewards.

The Rasch person reliability estimate was poor at .61, not meeting the .80 criterion, while the Rasch item reliability estimate was excellent .98, meeting the .80 criterion. The person separation index was 1.25, indicating that the participants were divided into one group in terms of their ability estimates. The separation index was high at 6.69, indicating six groups in terms of item difficulty.

Monitor writing. A Rasch PCA of item residuals was conducted to assess the dimensionality of the 14 items in this construct. The results are summarized in Table 56. The Rasch measures explained 48.9% of the variance (eigenvalue = 13.4), which was slightly below the 50% criterion. The eigenvalue for the first contrast was 2.0 and accounted for 7.2% of the unexplained variance. This was below the 3.0 criterion for the eigenvalue in the first contrast and below the 10% criterion for the variance in the first contrast. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .75, slightly below the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined.

Table 56. *Rasch Standardized Residual Variance Results for Monitor Writing*

	Eigenvalue	Percent of variance
Total raw variance in observations	27.4	100.0%
Raw variance explained by measures	13.4	48.9%
Raw variance explained by persons	8.0	29.1%
Raw Variance explained by items	5.4	19.7%
Raw unexplained variance (total)	14.0	51.1%
Unexplained variance in first contrast	2.0	7.2%
Unexplained variance in second contrast	1.7	6.1%
Unexplained variance in third contrast	1.3	6.1%
Unexplained variance in fourth contrast	1.3	4.6%
Unexplained variance in fifth contrast	1.1	4.0%

Note. All statistics are based on Rasch CHIPS.

An inspection of the items residuals loadings indicated that neither the positive loadings nor the items with negative item residuals loadings formed distinctive patterns that could suggest a second dimension (see Table 57). The majority of the item residuals with positive loadings were related to pausing to check some aspect of writing (e.g., MW 4: *I paused to check the relationship between ideas*; MW 3: I paused to check grammar), but also included MW 10 (*I looked at topic sentence to check paragraph focus*). The item residuals with negative loadings were varied to include verbalizing, reminders about the value of the task, and pausing to check features of the essay (e.g., MW 2: I verbalized parts of essay structure; MW13: I reminded myself of the essay purpose; MW 8: I paused to check for plagiarism). All items involved different ways of monitoring writing. Taking all the results together, there was no indication that the items formed a secondary dimension.

Table 57. *Item Residual Loadings for Monitor Writing*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
MW 4	.70	47.0	.85	.87
MW 5	.69	48.3	.67	.57
MW 6	.39	50.4	.89	.76
MW 3	.35	49.3	.89	1.15
MW 10	.23	47.4	.74	.96
MW 9	.16	48.0	.81	.78
MW 7	.13	50.5	1.59	1.40
MW11	.02	48.7	.67	.52
Negative loadings				
MW 8	−.08	48.9	1.09	1.04
MW 14	−.16	52.1	1.03	1.09
MW 12	−.22	49.7	.97	1.02
MW 1	−.27	48.7	1.25	1.07
MW 13	−.41	54.4	1.26	1.35
MW 2	−.52	56.7	1.38	1.36

Note. MNSQ = mean square; *N* = 171.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 58, each category of the 4-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -2.2 in category 1 to 9.4 in category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories, and all the category thresholds had a separation of 5 CHIPS; the minimum separation required for a 4-point rating scale. Therefore, the 4-point rating scale was considered optimal for this construct.

Table 58. *Category Functioning Statistics for the 4-point Monitor Writing*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Did not use at all	151 (7)	-2.4	1.40	None	(-9.22)
2 Used a little	229 (10)	.6	.81	-2.96	-2.56
3 Used some	468 (21)	4.7	.91	-.13	2.52
4 Used a lot	1420 (63)	9.7	.98	3.10	(9.28)

Next, the item fit statistics were inspected. The point-measure correlations for all the items were adequate between .52 and .67. This indicated that the items were strongly correlated with the whole scale, and they plausibly formed a single construct. With the exception of item MW 7 (*I paused to check vocabulary*), the Infit MNSQ and Outfit MNSQ values for all other items were within the .50-1.5 criterion (See Table 59).

Table 59. *Rasch Item Statistics and Inter-Item Correlation for Monitor Writing*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
MW 2	56.7	.4	1.38	3.3	1.36	2.5	.64
MW 13	54.4	.5	1.26	2.2	1.35	2.4	.63
MW 14	52.1	.6	.97	-.2	1.02	.2	.64
MW 7	50.5	.5	1.59	3.9	1.40	2.0	.52
MW 6	50.4	.6	.89	-.8	.76	-1.4	.64
MW 12	49.7	.5	.99	.3	.96	-.1	.61
MW 3	49.2	.6	.86	-1.0	1.11	.6	.61
MW 8	48.9	.6	1.09	.6	1.04	.2	.57
MW 1	48.7	.6	1.25	1.7	1.07	.4	.53
MW 11	48.7	.6	.67	-2.5	.52	-2.7	.67
MW 5	48.3	.6	.67	-2.4	.57	-2.2	.64
MW 9	48.0	.6	.81	-1.3	.78	-1.0	.58
MW 10	47.4	.5	.72	-1.9	.91	-.3	.60
MW 4	47.0	.5	.85	-.9	.87	-.4	.64

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

To investigate whether MW 7 should be deleted from subsequent analysis 9 persons (5% of the total sample size of 171) who gave the most unexpected responses for MW 7 were temporarily deleted and the analysis was re-run. The statistics for MW 7 greatly improve with an Infit MNSQ value of 1.29 and Outfit MNSQ value of 1.04; therefore, the item was retained.

Figure 16 displays the Wright map for Monitor Writing. The CHIPS scale is displayed on the left side of the figure. Persons using more strategies to monitor writing and items that are more difficult to endorse are placed higher on the map. Conversely, persons using fewer strategies and items that are easier to endorse are located towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (57.90) indicate that the items were fairly easy for most of the respondents. The most difficult item to endorse was MW 2 (*I verbalized parts of essays and purpose*), while the easiest item to endorse was MW 4 (*I paused to check the relationship between ideas*). An inspection of the empirical item hierarchy indicated that the level of difficulty of the strategy described in the item was the factor that determined the difficulty order of the items. The easy to endorse items (MW 4: *I paused to check the relationship between ideas;* MW 18: *I looked at topic sentence to check the paragraph focus;* MW 9: *I paused to check the relevance of the ideas in the paragraph, respectively*) involved pausing to monitor more abstract aspects of the paragraphs that the respondents could not covertly observe in their paragraphs. The items in the middle were related to both abstract and specific aspects of the paragraphs (e.g., MW 7: *I paused to check vocabulary*; MW 6: *I paused to check for redundancy*; MW 12: *I kept rewriting sentences until satisfied*); whereas the difficult to endorse items such as MW 14, MW 3

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-----------------------------------------------------------------------------
  Persons using more |  More difficult to endorse strategies
  Strategies         |
  100      ########  +
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   90                +
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   80                +
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   70                +
                    T|
            .######  |
                     |
            #######  |
           .####### S|
   60         .####  +
       ############  |
            ####### M|  MW 2:  verbalized parts of essays and purpose
        ###########  |T MW 13: reminded myself of essay purpose
               ####  |S
          .######## S|  MW 14: reminded myself audience unfamiliar with
                                topic
   50           ###  +M MW 7:  paused to check vocabulary
                     |  MW 6:  paused check for redundancy
                     |  MW 12: kept rewriting sentences until satisfied
                .##  |  MW 3:  paused to check grammar
                     |  MW 8:  paused to check plagiarism
                     |  MW 1:  relied on knowledge of essay structure
                     |  MW 11: paused to think best way to express idea
                     |  MW 5:  paused check ideas for relevance
                     |  MW 9:  paused to check quote relevance
                  .  |S MW 10: looked at topic sentence to check paragraph
                               focus
                     |  MW 4:  paused to check relationship between ideas
                .## T|T
                     |
                     |
   40             #  +
Persons using less   | Easier to endorse strategies
strategies
-----------------------------------------------------------------------------
```

Figure 16. Wright map for Monitor Writing. Each # is 2 persons; each **.** is 1 person; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Write map has been attenuated to fit in one page.

vocabulary; MW 6: *I paused to check for redundancy*; MW 12: *I kept rewriting sentences until satisfied*); whereas the difficult to endorse items such as MW 14, MW 3, and MW 2 (*I reminded myself that the audience is not familiar with the topic; I reminded myself of the essay purpose, I verbalized parts of an essay and purpose as*) described features of the essay that require more cognitive effort as well as knowledge and understanding of essay writing. The general pattern for the item difficulty appears to be a progression from monitoring quality of ideas, to monitoring more abstract and specific features, to using more cognitive strategies to monitor writing.

The Rasch person reliability estimate was fair at .72, but below the criterion level of .80, while the Rasch item reliability estimate was excellent .95, meeting the criterion level. The person separation index was 1.60, indicating that the participants were divided into one group in terms of their ability estimates. The separation index was high at 4.36, indicating four groups in terms of item difficulty.

Adjust environment. A Rasch PCA of item residuals was conducted to assess the unidimensionality of the five items for this question. The results are summarized in Table 60. The Rasch measures explained 60.5% of the variance (eigenvalue = 6.1), which exceeded 50% criterion. The eigenvalue for the first contrast was 1.6 and accounted for 15.5% of the unexplained variance. This was below the 3.0 eigenvalue criterion in the first contrast, but in excess of the criterion value of 10% for the variance in the first contrast. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was acceptable at .48, but below the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined.

Table 60. *Rasch Standardized Residual Variance Results for Adjust Environment*

	Eigenvalue	Percent of variance
Total raw variance in observations	10.1	100.0%
Raw variance explained by measures	6.1	60.5%
Raw variance explained by persons	2.7	26.6%
Raw Variance explained by items	3.4	33.9%
Raw unexplained variance (total)	4.0	39.5%
Unexplained variance in first contrast	1.6	15.5%
Unexplained variance in second contrast	1.3	12.5%
Unexplained variance in third contrast	1.0	10.1%
Unexplained variance in fourth contrast	.1	1.3%
Unexplained variance in fifth contrast	.0	.0%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals loadings (See Table 61) indicated that the item residuals with positive loadings were related to adding something to the environment to make it more conducive to write (e.g., AE 1: *I listened to favorite music to help me concentrate*) while the item residuals with negative loadings were related to avoiding distractors (AE 5: *I chose a quiet place without distractors*; AE 2: *I put the telephone away to avoid distractions*). They formed two distinctive patters, but instead of suggesting a contradictory dimension, they represented different types of strategies to make the environment more conducive to writing. Therefore, as all the items described different ways in which the respondents could adjust their writing environment to make it more conducive to writing, and considering that the items met all the other criteria for unidimensionality, it was determined that, in spite of the low disattenuated correlation the items formed a fundamentally, the items did not indicate the presence of a contradictory dimension, but instead formed a unidimensional construct to adjust environment.

Table 61. *Item Residual Loadings for Adjust Environment*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
AE 1	.91	56.0	1.05	1.40
AE 4	.13	42.9	1.47	1.54
Negative loadings				
AE 2	−.59	53.6	.82	.84
AE 5	−.61	47.5	.91	.84

Note. MNSQ = mean square; *N* = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 62, each category of the 4-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -3.7 in Category 1 to 7.2 in Category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories. The category thresholds between Category 1 and 2 and between Category 3 and 4 had a separation of at least 5.00 CHIPS, meeting the criterion for a 4-points scale, but the separation threshold for Category 2 and Category 3 was only 3.68 CHIPS apart. However, considering that all the other criteria for rating scale functioning were met, a decision was made not to collapse Category 2 and 3, as useful information about the respondents' use of SRL may be lost by collapsing the categories. Therefore, the 4-point rating scale was considered adequate, but not optimal for this construct.

Table 62. *Category Functioning Statistics for the 4-point Adjust Environment*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Did not use at all	158 (23)	-3.7	1.21	None	(-6.83)
2 Used a little	74 (11)	-1.1	1.25	.98	-1.89
3 Used some	105 (15)	2.4	.89	-.88	1.79
4 Used a lot	347 (51)	7.2	1.32	-.10	(7.00)

Next, the item fit statistics were inspected. The point-measure correlations for all the items were low to adequate, ranging from .36-.58. This indicated that some of the items were poorly correlated with the rest of the scale. With the exception of AE 3 (*I answered calls, emails, and texts* while writing), the Infit MNSQ and Outfit MNSQ values for all other items were within the .50-1.5 criterion (See Table 63). To investigate whether AE 3 should be deleted from subsequent analysis, 9 persons (5% of the total sample size of 171) who gave most unexpected responses for AE 3 were temporarily deleted and the analysis was re-run. The statistics for AE 3 did not improve with an Infit MNSQ value of 1.22 and Outfit MNSQ value of 1.58. The Pearson correlation between person measures with positive and negative loadings was also calculated to assess the impact of deleting WSE 19 on the person measures. The Pearson correlation for the items measures with and without item AE 3 decreased from .37 to .28, suggesting the item should not be excluded. However, a conceptual examination of AE 3 indicated that, unlike other items, AE 3 described a maladaptive strategy (*I answered all the calls, mails, texts while writing*) that does not lead to an environment that is conducive for writing. Therefore, the item was deleted from subsequent analyses. After deleting AE 3, item AE 4 (*I had all the relevant materials* *closed to me*) had an Outfit MNSQ value of 1.54, slightly over the upper level criterion of 1.5 (See Table 64). After temporarily deleting, 9 (5% of the total sample of 171) of the persons with the most unexpected responses, the AE 4 Outfit MNSQ values greatly improved to 1.06, so the item was retained.

Table 63. *Rasch Item Statistics and Inter-Item Correlation for Adjust Environment*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
AE1	53.6	.3	.69	-2.1	.84	-1.5	.58
AE3	53.2	.3	1.32	3.7	1.63	4.9	.21
AE2	51.9	.3	1.00	.1	1.02	.2	.38
AE5	47.4	.4	.93	-.5	.86	-.7	.49
AE4	43.9	.7	1.18	.7	.88	-.3	.42

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Table 64. *Rasch Item Statistics and Inter-Item Correlation for Adjust Environment Without AE 3*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
AE 1	56.0	.4	1.05	.7	1.40	2.3	.58
AE 2	53.6	.4	.82	-1.4	.84	-1.2	.66
AE 5	47.5	.5	.91	-.6	.84	-.8	.58
AE 4	42.9	.8	1.47	1.8	1.54	1.6	.36

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 17 displays the Wright map for Adjust Environment. The CHIPS scale is displayed on the left side of the figure. Persons using more strategies to adjust the environment and more difficult to endorse items are towards the top of the map. Conversely, persons using fewer strategies and items that are easier to endorse are

```
------------------------------------------------------------------------------
 Persons using more  |  More difficult to endorse strategies
 Strategies          |
  100          ###   +
                     |
                     |
                     |
                     |
                     |
   90                +
                     |
                     |
                     |
                     |
                     |
   80                +
                     |
                     |
                     |
                     |
                     |
   70                +
                     |
                     |
                     |
                     |
                     |
   60          ### T+T
                     |
             ##### S|  AE 1: listened to favorite music to help concentrate
     #############   |S
          .####### M|  AE 2: put telephone away to avoid distractions
           #######   |
   50   .########### S+M
                     |
              .###   |
                     |
                 #   |  AE 5: chose quiet place without distractors
                 # T|S
                     |  AE 4: had all relevant materials close to me
                 .   |
   40            .   +T
                     |
                     |
                     |
                     |
   30                +
Persons using less   | Easier to endorse items
   strategies        |
------------------------------------------------------------------------------
```

Figure 17. Wright map for Adjust Environment. Each # is 3 persons; each . is 1 to 2 persons; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit in one page.

located toward the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates

(53.40) indicate that for a fair number of respondents, the items were easy to endorse. The most difficult item to endorse was AE 1 (*I listened to my favorite music to help me concentrate),* while the easiest item to endorse was AE 4 (*I had all relevant material close to me*). An inspection of the empirical item hierarchy indicated a clear difference between the easy and difficult items; students were more willing to use strategies that involve simple demands (e.g., AE 4: *I had all the relevant materials close to me;* AE 5: *I chose a quiet place without distractors*). On the other hand, students were less willing to use strategies that described more difficult demands (e.g., AE 2: *I put the telephone away to avoid distractors;* AE 1: *I listened to my favorite music to help me concentrate*). Therefore, the general pattern for the item difficulty appears to be a progression from adjusting aspects of the environment that are not personally important to the respondents to aspects that are more personally valued, such as the telephone.

The Rasch person reliability estimate was poor at .48, and below the .80 criterion, while the Rasch item reliability estimate was excellent at .99, exceeding the .80 criterion. The person separation index was .97, indicating that the participants did not form a distinctive group in terms of their ability estimates. The separation index was high at 9.52, indicating nine groups in terms of item difficulty.

Solve problems. A Rasch PCA of item residuals was conducted to assess the unidimensionality of the five items for this question. The results are summarized in Table 65. The Rasch measures explained 56.4% of the variance (eigenvalue = 6.5), which exceeded the 50% criterion. The eigenvalue for the first contrast was 1.7 and accounted for 14.9% of the unexplained variance. This was below the 3.0 eigenvalue criterion in the first contrast, but slightly exceeding the 10% criterion for the variance in the first contrast. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was low at .36 and not meeting the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined.

Table 65. *Rasch Standardized Residual Variance Results for Solve Problems*

	Eigenvalue	Percent of variance
Total raw variance in observations	11.5	100.0%
Raw variance explained by measures	6.5	56.4%
Raw variance explained by persons	1.8	15.4%
Raw Variance explained by items	4.7	40.9%
Raw unexplained variance (total)	5.0	43.6%
Unexplained variance in first contrast	1.7	14.9%
Unexplained variance in second contrast	1.4	11.8%
Unexplained variance in third contrast	1.0	8.8%
Unexplained variance in fourth contrast	.9	7.5%
Unexplained variance in fifth contrast	.1	.6%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals loadings indicated that neither the item residuals with positive loadings nor the item residuals with negative loadings formed distinctive patterns that may suggest a contradictory dimension (see Table 66). The item residuals with positive loadings focused on either ignoring the problem and continue writing or trying to find a solution (SP 4 and SP 5, respectively). The item residuals with negative loadings were more varied and included calling, emailing, or texting a friend, making a memo to deal with the problem at a later time, and emailing the teacher to ask for help (SP 2, SP 3, and SP 1 respectively). All the items indicated different ways of solving problems. Therefore, given that other criteria were met, and that the items all described ways in which the respondents could solve problems, the items were considered to form a unidimensional construct.

Table 66. *Item Residual Loadings for Solve Problems*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
SP 4	.83	52.3	1.27	1.32
SP 5	.49	40.6	1.23	1.32
Negative loadings				
SP 1	−.10	55.8	.78	.89
SP 3	−.48	50.8	.81	.74
SP 2	−.73	50.4	.94	.98

Note. MNSQ = mean square; N = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 67, each category of the 4-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -4.9 in category 1 to 5.5 in category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories. The category thresholds between Category 1 and 2 and between Category 3 and 4 had a separation of at least 5.00 CHIPS, meeting the criterion for a 4-points scale, but the separation threshold for Category 2 and Category 3 was only 3.69 CHIPS apart. However, considering that all the other criteria for rating scale functioning were met, a decision was made not to collapse Category 2 and 3, as useful information about the respondents' use of SRL may be lost by collapsing the categories. Therefore, the 4-point rating scale was considered adequate, but not optimal for this construct.

Table 67. *Category Functioning Statistics for Solve Problems*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Did not use at all	355 (42)	-4.9	.93	None	(-6.98)
2 Used a little	144 (17)	-2.0	1.12	-.44	-1.85
3 Used some	116 (14)	.3	1.14	-.10	1.84
4 Used a lot	240 (28)	5.5	.98	-.34	(7.00)

Next, the item fit statistics were inspected. The point-measure correlations for all the items were adequate (.30 to .60). This indicated that some items correlated with the rest of the scale fairly higher than other items. The Infit MNSQ and Outfit MNSQ values for all the items were within the .50 -1.5 criterion (See Table 68).

Table 68. *Rasch Item Statistics and Inter-Item Correlation for Solve Problems*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
SP 1	55.7	.5	.78	-1.4	.89	-.4	.49
SP 4	52.3	.4	1.27	2.5	1.32	2.1	.33
SP 3	50.8	.3	.81	-2.3	.74	-2.4	.60
SP 2	50.4	.3	.94	-.7	.98	-.1	.57
SP 5	40.7	.7	1.23	1.1	1.32	1.2	.30

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 18 displays the Wright map for Solve Problems. The CHIPS scale is displayed on the left side of the figure. Persons using more strategies to solve problems and more difficult to endorse items are towards the top of the map. Conversely, persons using fewer strategies and items that are easier to endorse are located towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (49.20) indicate that

```
-------------------------------------------------------------------------------
Persons using more   |  More difficult to endorse strategies
strategies           |
  100             .  +
                     |
                     |
                     |
                     |
   90                +
                     |
                     |
                     |
                     |
   80                +
                     |
                     |
                     |
                     |
                     |
                     |
   70                +
                     |
                     |
                     |
                     |
                     |
   60             .  +T
                  .  |
                  .  |  SP 1: emailed teacher and asked for help
                  . T|S
                 ##  |
             .##### S|  SP 4: ignored and continued writing
   50          .### M+M SP 3: made memo to ask someone later
                        SP 2: called, emailed, texted friend
       .###########  |
                .## S|
                     |S
                .## T|
                  .  |
   40                +T SP 5: tried to find a solution by myself
                     |
                     |
                     |
                     |
                     |
   30                +
Persons using less   |Easier to endorse strategies
Strategies           |
-------------------------------------------------------------------------------
```

Figure 18. Wright map for Solve Problems. Each # is 6 persons; Each **.** is 1 to 5 persons; M = Mean; S = 1 SD from the mean; T = 2 SDs. The map has been attenuated to fit in one page.

the items were targeting the respondents and were not too easy or difficult to endorse. The most difficult item to endorse was SP 1 (*I emailed the teacher and asked for help*), while the easiest item to endorse was SP 5 (*I tried to find a solution by myself*). An inspection of the empirical item hierarchy indicated a clear difference between the easy and difficult to endorse items, and the items gathered around the mean. The easy items involved an immediate individual effort to solve the problem exemplified by item SP 5 (*I tried to find a solution by myself*). The items in the middle focused on asking for help or planning to find a solution later (e.g., SP 4: *I ignored and continued writing*; SP 2: *I called, emailed, texted a friend*), whereas the difficult to endorse items involved asking someone else for help or not immediately dealing with the problem. Therefore, the general pattern for the item difficulty appears to be a progression from attempting to solve the problem, to finding a solution later, to asking the teacher for help.

The Rasch person reliability estimate was poor at .24, not meeting the .80 criterion, while the Rasch item reliability estimate was excellent at .99, meeting the .80 criterion. The person separation index was also low at .55, indicating that the participants were not divided into distinct groups in terms of their ability estimates. The separation index was high at 9.96, indicating nine groups in terms of item difficulty.

Increase motivation to continue writing. A Rasch PCA of item residuals was conducted to assess the unidimensionality of the 11 items for this question. The results are summarized on Table 69. The Rasch measures explained 49.6% of the variance (eigenvalue = 8.8), which was slightly below the 50% criterion. The eigenvalue for the first contrast was 2.0 and accounted for 11.3% of the unexplained variance. This was below the 3.0 criterion for the eigenvalue in the first contrast and slightly exceeding the

10% criterion for variance in the first contrast. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .60, below the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined.

Table 69. *Rasch Standardized Residual Variance Results for Increase Motivation to Continue Writing*

	Eigenvalue	Percent of variance
Total raw variance in observations	17.8	100.0%
Raw variance explained by measures	8.8	49.6%
Raw variance explained by persons	4.4	24.4%
Raw Variance explained by items	4.5	25.1%
Raw unexplained variance (total)	9.0	50.4%
Unexplained variance in first contrast	2.0	11.3%
Unexplained variance in second contrast	1.6	8.9%
Unexplained variance in third contrast	1.2	6.5%
Unexplained variance in fourth contrast	1.1	6.0%
Unexplained variance in fifth contrast	.9	5.2%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals loadings indicated that neither the positive nor the negative item residuals loadings formed specific patterns that could suggest a contradictory dimension (See Table 70). The items residuals with positive loadings included thinking about consequences, reminders of the extrinsic and intrinsic value of the writing task, and self-talk (e.g., IMW 7: *I thought of the consequences if I did not persevere*; IMW 4: *I reminded myself that points count towards the final grade*; IMW 8: *I told myself it is a good opportunity to improve skills*). The items residuals with negative loadings were also varied and included items related to taking a break, promising rewards, and self-talk (e.g., IMW 5: *I stopped to drink or eat something*;

IMW 2: *I took a break*; IMW 1: *I told myself "I can do it*"). All the items indicated different ways of increasing motivation to continue writing. Therefore, given that other criteria for dimensionality were met, and considering that all items described strategies to achieve the goal of increasing motivation to write, it was determined that the items formed a unidimensional scale.

Table 70. *Item Residual Loadings for Increase Motivation to Continue Writing*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
IM 7	.67	47.9	1.10	1.12
IM 4	.62	48.2	.90	.82
IM 6	.60	44.7	.98	.64
IM 8	.36	48.8	.72	.63
Negative loadings				
IM 1	−.08	50.8	.69	.62
IM 10	−.12	52.2	.98	.86
IM 3	−.40	55.6	.99	1.03
IM 2	−.45	48.9	1.23	1.47
IM 5	−.54	52.8	1.40	1.48

Note. MNSQ = mean square; *N* = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 71, each category of the 4-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -2.5 in Category 1 to 6.3 in Category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scale categories. The category thresholds between Category 1 and 2 and between Category 3 and 4 had a separation of at least 5.00 CHIPS, meeting the criterion for a 4-points scale, but the separation threshold for Category 2 and Category 3 was only 3.60

CHIPS apart. However, considering that all the other criteria for rating scale functioning were met, a decision was made not to collapse Category 2 and 3, as useful information about the respondents' use of SRL may be lost by collapsing the categories. Therefore, the 4-point rating scale was considered adequate, but not optimal for this construct.

Table 71. *Category Functioning Statistics for Increase Motivation to Continue Writing*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Did not use at all	248 (16)	-2.5	.94	None	(-6.82)
2 Used a little	168 (11)	.7	1.14	.67	-1.80
3 Used some	238 (15)	2.6	.91	.02	1.80
4 Used a lot	885 (58)	6.3	1.14	-.69	(6.82)

Next, the item fit statistics were inspected. The point-measure correlations for the items were adequate to good, as they ranged from .30 to .68. With the exception of IMCW 5, IMCW 9, and IMCW 11, the Infit MNSQ and Outfit MNSQ values for all other the items were within the .50 -1.5 criterion (See Table 72). To investigate whether IMCW 9, IMCW 5, and IMCW 11 should be deleted from subsequent analysis, 9 persons (5% of the total sample size of 171), who gave unexpected responses for each of the items, were temporarily deleted and the analysis was re-run. The statistics for IMCW 9 and IMCW 11 did not improve. IMCW 9 had an Infit MNSQ statistic of 1.38, but an Outfit MNSQ value of 1.62, while item IMCW 11 had an Infit MNSQ of .94, but the Outfit MNSQ was 2.95. On the other hand, IMCW 5 statistics improved to an Outfit MNSQ of 1.50, suggesting the items fit was affected by unexpected responses of a few respondents. A careful examination of items IMCW 9 and IMCW 11 revealed that these two items were not describing strategies to improve motivation. IMCW 9 (*I kept writing* *without worrying about the quality of the essay*) described a behavior rather than a strategy to boost motivation. Similarly, item IMCW 11 (*I gave up and stopped writing*) described loss of motivation rather than ways to maintain it. The Pearson correlation between person measures with positive and negative loadings was also calculated to assess the impact of deleting IMCW 9 and IMCW 11 on the person measures. The Person correlation for the person measures with and without the items increased from .46 to .48. Therefore, the items were deleted from subsequent analysis, but item IMCW 3 (*I promised myself a reward*) was retained. After the exclusion of IMCW 9 and IMCW 11, all the items had MNSQ Infit and MNSQ outfit statistics in the criterion range of .5 to 1.5 (See Table 73).

Table 72. *Rasch Item Statistics and Inter-Item Correlation for Increase Motivation to Continue Writing*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation
IMCW11	59.3	.6	1.08	.5	2.64	4.5	.17
IMCW9	53.8	.4	1.39	3.8	1.67	4.1	.31
IMCW3	53.3	.4	.86	-1.5	.85	-1.2	.66
IMCW5	51.1	.4	1.15	1.5	1.30	2.2	.45
IMCW10	50.6	.4	.96	-.4	.86	-1.1	.66
IMCW6	43.7	.6	.91	-.4	.60	-1.4	.51
IMCW4	47.0	.4	.87	-1.0	.78	-1.1	.59
IMCW2	47.6	.4	1.17	1.4	1.17	.9	.42
IMCW8	47.6	.4	.71	-2.5	.56	-2.7	.68
IMCW1	49.4	.4	.69	-3.2	.66	-2.5	.66
IMCW7	46.7	.5	1.00	.2	.88	-.5	.53

Note. N = 171.

[a]Pt-measure correlation = Point-measure correlation.

Table 73. *Rasch Item Statistics and Inter-Item Correlation for Increase Motivation to Continue Writing without items 9 and 11*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
IMCW 3	55.6	.4	.99	.0	1.03	.2	.72
IMCW 6	44.7	.7	.98	.0	.64	-1.2	.45
IMCW 10	52.2	.4	.98	-.1	.86	1.0	.68
IMCW 5	52.8	.4	1.40	3.5	1.48	4.6	.49
IMCW 2	48.9	.4	1.23	1.8	1.47	1.1	.45
IMCW 8	48.8	.4	.72	-2.4	.63	-2.7	.63
IMCW 1	50.8	.4	.69	-3.1	.62	-2.5	.69
IMCW 4	48.2	.5	.90	-.7	.82	-.8	.56
IMCW 7	47.9	.5	1.10	.7	1.12	.6	.49

Note. N = 171.
[a]Pt-measure correlation = Point-measure correlation.

Figure 19 displays the Wright map for Increase Motivation to Continue Writing. The CHIPS scale is displayed on the left side of the figure. Persons using more strategies to motivate themselves to continue writing and more difficult to endorse items are towards the top of the map. Conversely, persons using fewer strategies and items that are easier to endorse are located towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (55.50) indicate that for a fair number of respondents, the items were relatively easy to endorse. The most difficult item to endorse was IMCW 3 (*I promised myself a reward*), while the easiest item to endorse was IMCW 6 (*I reminded myself it is something I have to do*). An inspection of the empirical item hierarchy indicated that the easy to endorse items focused on reminders of positive or negative consequences of not increasing motivation to write, exemplified by items IMCW 6, IMCW 7, and IMCW 4 (*I reminded myself it is something I have to do; I*

```
-------------------------------------------------------------------------------
 Persons using more  |  More difficult to endorse strategies
 Strategies          |
                     |
  100       #######  +
                     |
                     |
                     |
                     |
                     |
   90                +
                     |
                     |
                     |
                     |
                     |
   80                +
                     |
                     |
                     |
                     |
                     |
                     |
   70                +
                     |
                     |
                     |
                     |
          .##### T|
   60                +
         ####### S|
   #############  |T
       .########  |  IMCW 3:  promised myself a reward
     ########### M|S IMCW 6:  reminded it is something I have to do
   .############  |  IMCW 10: told myself "I can do it"
                     IMCW 5:  stopped to drink or eat something
   50     ######### S+M
          ########  |  IMCW 2:  took a break
                     IMCW 8:  told myself it is good opportunity to improve
                              skills
                     IMCW 1:  told myself could rest
                     IMCW 4:  reminded myself point count for grade
                 #  |S
                ## T|  IMCW 7:  thought of the consequences if not persevere
                 .  |T
                 .  |
   40                +
Persons using less   | Easier to endorse strategies
strategies
-------------------------------------------------------------------------------
```

Figure 19. Wright map for Increase Motivation to Continue Writing. Each # is 2 persons; Each **.** is 1 person; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit in one page.

thought about the consequences if I did not persevere; I reminded myself that points for the draft count for the grade). The items in the middle were related to taking a break or using self-talk to enhance motivation (e.g., IMCW 1: *I told myself I could rest*; IMCW 2: *I took a break*; IMCW 10: *I told myself " I can do it*"); whereas the difficult to endorse items focused on stopping the work to satisfy physical needs and providing emotional encouragement to maintain motivation as exemplified by IMCW 5 (*stopped to eat or drink something*) and IMCW 3 (*I promised myself a reward)*. The general pattern for the items difficulty seems to be a progression from strategies to remind the respondents about the value of persevering, to taking breaks, and to promising rewards.

The Rasch person reliability estimate was poor at .62, not meeting the .80 criterion, while the Rasch item reliability estimate was excellent at .98, meeting the .80 criterion. The person separation index was low at 1.28, indicating that the participants were divided into one distinct group in terms of their ability estimates. The separation index was high at 6.25, indicating six groups in terms of item difficulty.

Assess writing. A Rasch PCA of item residuals was conducted to assess the unidimensionality of the twelve items for this question. The results are summarized on Table 74. The Rasch measures explained 48.2% of the variance (eigenvalue = 9.3), which was slightly below the 50% criterion. The eigenvalue for the first contrast was 2.0 and accounted for 11% of the unexplained variance. This was below the 3.0 criterion for the eigenvalue in the first contrast, but slightly exceeding the 10% criterion for variance in the first contrast. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .71, below the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined.

Table 74. *Rasch Standardized Residual Variance Results for Assess Writing*

	Eigenvalue	Percent of variance
Total raw variance in observations	19.3	100.0%
Raw variance explained by measures	9.3	48.2%
Raw variance explained by persons	3.8	19.7%
Raw Variance explained by items	5.5	28.5%
Raw unexplained variance (total)	10.0	51.8%
Unexplained variance in first contrast	2.1	11.0%
Unexplained variance in second contrast	1.3	6.9%
Unexplained variance in third contrast	1.3	6.7%
Unexplained variance in fourth contrast	1.2	6.5%
Unexplained variance in fifth contrast	1.2	6.2%

Note. All statistics are based on Rasch CHIPS.

An inspection of the item residuals with positive and negative loadings indicated that neither the items residuals with positive loadings nor the items residuals with negative loading formed distinctive patterns that suggested a contradictory dimension (See Table 75). The item residuals with positive loadings included self-talk, reading the written product and asking someone to check the work (e.g., AW 9: *I told myself "well done"*; AW 11: *I felt satisfied with what I had written*; AE 1: *I quickly read what I had written*). The item residuals with negative loadings were also varied and included items related to making revisions, distancing from the written product, reading the written product aloud, and assessing understanding of essay requirement (e.g., AW 6: *I let the draft sit for a while*; AW 2: *I read and revised obvious problems*, AW 7: *I asked myself if the essay met the requirements*). All the items were different ways of assessing the written product. Therefore, given that other criteria for dimensionality were met, the items were considered to form a unidimensional construct.

Table 75. *Item Residual Loadings for Assess Writing*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
AW 9	.71	53.3	.85	.76
AW 10	.66	49.6	1.34	1.34
AW 11	.23	51.1	1.00	.99
AW 1	.21	46.4	1.32	1.50
AW 5	.04	55.1	1.08	1.18
Negative loadings				
AW 7	−.07	46.0	1.01	1.00
AW 4	−.31	51.3	.94	.88
AW 2	−.45	45.5	.75	.66
AW 6	−.56	51.0	.98	.96
AW 3	−.69	50.6	.79	.73

Note. MNSQ = mean square; N = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 76, each category of the 4-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -3.4 in Category 1 to 5.0 in Category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The threshold measures were properly ordered and increased with the rating scales. The category thresholds between Category 1 and 2 and between Category 3 and 4 had a separation of at least 5.00 CHIPS, meeting the criterion for a 4-points scale, but the separation threshold for Category 2 and Category 3 was only 3.69 CHIPS apart. However, considering that all the other criteria for rating scale functioning were met, a decision was made not to collapse Category 2 and 3, as useful information about the respondents' use of SRL may be lost by collapsing the categories. Therefore, the 4-point rating scale was considered adequate, but not optimal for this construct.

Table 76. *Category Functioning Statistics for Assess Writing*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Did not use at all	384 (22)	-3.5	1.09	None	(-8.12)
2 Used a little	343 (20)	-1.0	.98	1.66	-2.10
3 Used some	343 (20)	2.1	.86	.60	2.23
4 Used a lot	640 (37)	5.0	1.01	1.06	(8.02)

Next, the item fit statistics were inspected. The point-measure correlations for the items were acceptable, as they ranged from .34 to .68. This indicated each item was fairly adequately correlated with the whole scale. With the exception of AW 12 (*I saved a copy of the draft but did not revise*) and AW 8 (*I felt happy with what I had written even if it was of bad quality*), the Infit MNSQ and Outfit MNSQ values for all other the items were within the .50-1.5 criterion (See Table 77). To investigate whether these items should be deleted from subsequent analysis, 9 persons (5% of the total sample size of 171) who gave unexpected responses for each of the items were temporarily deleted and the analysis was re-run. The statistics for AWP 12 and AWP 8 did not improve. AWP 12 had an Infit MNSQ value of 1.42, but the Outfit MNSQ value was 1.65, while AWP had an Infit MNSQ statistic of 1.02, but an Outfit MNSQ value of 1.63. These items were designed to describe different strategies that allow students to assess their final product. However, when carefully examined, AWP 12 did not describe a strategy conducive to assessment of the written product; it was more of a undesirable behavior as it did not lead to any revision. At the same time, AWP 8, assessed the

Table 77. *Rasch Item Statistics and Inter-Item Correlation for Assess Writing*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
AWP8	54.5	.4	1.25	2.1	1.84	4.7	.38
AWP5	53.8	.4	.89	-1.0	.93	-.5	.54
AWP9	52.2	.4	.82	-2.0	.75	-2.3	.68
AWP2	45.6	.5	.76	-2.0	.68	-2.0	.56
AWP3	50.0	.4	.75	-3.0	.70	-3.0	.66
AWP12	51.4	.4	1.53	5.0	1.68	5.1	.32
AWP11	50.4	.4	.88	-1.3	.85	-1.4	.59
AWP10	49.1	.4	1.15	1.6	1.11	1.0	.48
AWP1	46.3	.4	1.16	1.4	1.27	1.6	.39
AWP7	45.9	.4	.93	-.5	.93	-.4	.47
AWP4	50.6	.4	.91	-1.0	.86	-1.3	.62
AWP6	50.3	.4	.88	-1.3	.84	-1.5	.59

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

feelings of the writer about having finished the task, but did not describe an assessment of the written product. The Pearson correlation between person measures with positive and negative loadings was also calculated to assess the impact of deleting WSE 19 on the person measures. The Pearson correlation for the person measures with and without items AWP 12 and AWP 8 increased from .47 to .56. Therefore, AWP 12 and AWP 8 were deleted from subsequent analyses. With the exclusion of items AWP 12 and AWP 8 all the remaining items had Infit MNSQ values within the .51-1.50 criterion (See Table 78).

Figure 20 displays the Wright map for Assess Writing. The CHIPS scale is displayed on the left side of the figure. Persons using more strategies and items that are more difficult to endorse are place higher on the map. Conversely, persons with lower self-efficacy and items that are easier to endorse are located towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using

Table 78. *Rasch Item Statistics and Inter-Item Correlation for Assess Writing Without Items 8 and 12*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-measure correlation[a]
AWP 5	55.1	.4	1.08	.7	1.18	1.2	.56
AWP 9	53.3	.4	.85	-1.6	.76	-2.0	.71
AWP 4	51.3	.4	.94	-.6	.88	-1.0	.66
AWP 11	51.1	.4	1.00	.0	.99	.0	.60
AWP 6	51.0	.4	.98	-.2	.96	-.3	.61
AWP 3	50.6	.4	.79	-2.3	.73	-2.5	.69
AWP 10	49.6	.4	1.34	3.2	1.34	2.5	.50
AWP 1	46.4	.5	1.32	2.5	1.50	2.7	.41
AWP 7	46.0	.5	1.01	.1	1.00	.1	.50
AWP 2	45.5	.5	.75	-2.1	.66	.59	.56

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

CHIPS, and the mean for the person ability estimates (51.70) indicate that the items were fairly easy for the majority of the respondents. The most difficult item to endorse was AWP 5 (*I asked someone to check my draft*), while the easiest item to endorse was AWP 2 (*I read and revised obvious problems*). An inspection of the empirical item hierarchy indicated that the easy to endorse items described simple revision strategies that involved interacting with the written text (e.g., AW 2: *I read and revised obvious problems*; AE 1: *I quickly read what I had written*; AW 3: *I read, marked and revised*). The items the middle required additional time to assess the written product (e.g., AW 6: *I let the draft sit for a while*; AW 3: *I read, marked, and revised the draft;* AW 4: *I read the draft aloud to find mistakes*); whereas the more difficult to endorse items involved emotional responses about the quality of the final written product (e.g., AW 11: *I felt satisfied with what I had written*; AW 9: *I told myself "well done" "be proud"*). In general, the item difficulty appears to be a progression from quickly revising the written product, to spending more time and effort on revision, to seeking assistance from other persons with the revision of the draft.

```
--------------------------------------------------------------------------------
Persons using       | More difficult to endorse strategies
more strategies     |
100            .#   +
                    |
                    |
                    |
                    |
                    |
 90                 +
                    |
                    |
                    |
                    |
                    |
 80                 +
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                    |
                    |
                    |
                    |
                    |
 70                 +
                    |
                    |
                    |
                .   |
                    |
 60             #  T+
               .##  |
             .####  |T
             #### S|  AW 5:  asked someone to check draft
        .########  |S AW 9:  told myself "well done" "be proud"
         .####### M|  AW 4:  read draft aloud to find mistakes
                   |  AW 11: felt satisfied with what I had written
                   |  AW 6:  let the draft sit for a while
 50   .##########  +M AW 3:  read, marked, and revised the draft
                   |  AW 10: told myself "next time you will do a better job"
        .#######   |
           .##### S|S AW 1:  quickly read what I had written
                   |  AW 7:  ask myself if essay met requirements
               .#  |  AW 2:  read and revised obvious problems
               .# T|T
               .#  |
 40                +
 Persons using     |  More difficult to endorse items
 fewer strategies  |
--------------------------------------------------------------------------------
```

Figure 20. Wright map for Assess Writing. Each # is 3 persons; Each **.** is 1 to 2 persons; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Write map has been attenuated to fit in one page.

The Rasch person reliability was fair at .76, but below the .80 criterion, while the Rasch item reliability estimate was excellent at .98, exceeding the .80 criterion. The person separation index was low at 1.78, indicating that the participants were divided into nearly two groups in terms of their ability estimates. The separation index was high at 6.80, indicating six groups in terms of item difficulty.

Time management. A Rasch PCA of item residuals was conducted to assess the unidimensionality of the five items in this construct. The results are summarized on Table 79. The Rasch measures explained 32.3% of the variance (eigenvalue = 1.9), which was much lower than the 50% criterion. The eigenvalue for the first contrast was 1.8 and accounted for 13.0% of the unexplained variance. This was below the 3.0 criterion for the eigenvalue in the first contrast, but slightly exceeding 10% criterion for the unexplained variance in the first contrast. Person measure estimates were produced for the PCA of item residuals with positive and negative loadings to calculate the disattenuated correlation between the person ability estimates. The correlation was .45, which was below the .80 criterion (Elwood, 2011). Therefore, the item residuals loadings were examined.

An inspection of the item residuals with positive and negative loadings indicated a pattern in the groupings of the residuals (See Table 80). The item residuals with positive loadings were related to completing the task just before the deadline (e.g., TM 1: *I stayed up all night*; TM 2: *I spent the entire day before the deadline writing*), while the item residuals with negative loadings focused on carefully planning the time (e.g., TM 5: *I carefully planned time available*; TM 3: *I wrote different parts at different times*). However, all the items described different ways of managing time, and were considered to be different aspects of managing time rather than a contradictory dimension. Taking into account that other fit criteria had been met and considering that the scale was intended to describe different strategies to complete the task, all four items were retained, and it was determined that the items formed a unidimensional construct.

Table 79. *Rasch Standardized Residual Variance Results for Time Management*

	Eigenvalue	Percent of variance
Total raw variance in observations	5.9	100.0%
Raw variance explained by measures	1.9	32.3%
Raw variance explained by persons	.6	10.2%
Raw Variance explained by items	1.3	22.2%
Raw unexplained variance (total)	4.0	67.7%
Unexplained variance in first contrast	1.8	31.0%
Unexplained variance in second contrast	1.1	18.5%
Unexplained variance in third contrast	1.1	18%
Unexplained variance in fourth contrast	.0	.3%
Unexplained variance in fifth contrast	.0	.2%

Note. All statistics are based on Rasch CHIPS.

Table 80. *Item Residual Loadings for Time Management*

Item	Loading	Measure	Infit MNSQ	Outfit MNSQ
Positive loadings				
TM 1	.80	52.6	1.19	1.20
TM 2	.55	49.7	.75	.72
Negative loadings				
TM 5	−.61	48.8	.98	.93
TM 3	−.72	49.0	1.11	1.13

Note. MNSQ = mean square; *N* = 170.

After assessing the unidimensionality of the items, the rating scale functioning was examined. As shown in Table 81, each category of the 4-point scale had more than 10 observations, meeting the criterion of minimum count per category. The average category measures increased with the rating scale categories, progressing from -2.0 in Category 1 to 2.8 in category 4, and the Outfit MNSQ statistic was less than the 2.0 criterion. The category threshold measures were properly ordered an increased with the rating scales. The category thresholds between Category 1 and 2 and between Category 3 and 4 had a separation of at least 5.00 CHIPS, meeting the criterion for a 4-points scale, but the separation threshold for Category 2 and Category 3 was only 4.14 CHIPS apart. However, considering that all the other criteria for rating scale functioning were met, a decision was made not to collapse Category 2 and 3, as useful information about the respondents' use of SRL may be lost by collapsing the categories. Therefore, the 4-point rating scale was considered adequate, but not optimal for this construct.

Table 81. *Category Functioning Statistics for the 4-point Time Management Scale*

	Count (%)	Observed measure	Outfit MNSQ	Structure calibration	Category measure
1 Did not use at all	178 (26)	-2.0	.98	None	(-7.67)
2 Used a little	130 (19)	-.6	.84	-.40	-2.16
3 Used some	171 (25)	1.2	1.13	-.92	1.98
4 Used a lot	204 (30)	2.8	1.03	1.33	(7.92)

Next, the item fit statistics were inspected. The point-measure correlations for all the items varied greatly, as they ranged from .16 to .64. This indicated that while some items correlated well with the whole scale, others did not. This was expected as the items describe different strategies to achieve the same goal. With the exception of TM 4, (*I could not complete the draft by the deadline*) the Infit MNSQ and Outfit MNSQ values for all other the items were within the .50 -1.5 criterion (See Table 82). To investigate whether TM 4 should be deleted from subsequent analysis, 9 persons (5% of the total sample size of 171) who gave unexpected responses the item were temporarily deleted and the analysis was run again. The statistics for TM 4 did not improve with an Infit MNSQ value of 1.04 and an Outfit MNSQ value of 2.18. The Pearson correlation between person measures with positive and negative loadings was also calculated to assess the impact of deleting WSE 19 on the person measures. The Pearson correlation for the person measures with and without TM 4 decreased from .37 to .35. However, a conceptual examination of TM 4 indicated that, unlike other items, TM 4 did not describe a strategy to complete conducive to complete the draft on time, instead it described failure to complete the draft and lack of strategy use to achieve the intended goal. Therefore, the item TM 4 was deleted from further analyses. With the exclusion of TM 4, all other items had fit statistics in the range of .05 and 1.50 (See Table 83).

Table 82. *Rasch Item Statistics and Inter-Item Correlation for Time Management*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-Measure correlation[a]
TM 4	54.1	.4	1.21	1.6	2.10	5.3	.16
TM 1	51.2	.4	1.02	.3	1.00	.1	.47
TM 2	48.7	.3	.68	-4.2	.67	-2.8	.64
TM 3	48.1	.3	1.02	.3	1.02	.2	.47
TM 5	47.9	.4	1.00	.3	.98	-.1	.53

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Table 83. *Rasch Item Statistics and Inter-Item Correlation for Time Management without item TM 4*

Item	Measure	SE	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Pt-Measure correlation[a]
TM 1	52.6	.4	1.19	1.9	1.20	1.7	.44
TM 2	49.7	.4	.75	-3.0	.72	-2.9	.63
TM 3	48.9	.4	1.11	1.2	1.13	1.2	.52
TM 5	48.8	.4	.98	-.2	.93	-.6	.61

Note. *N* = 171. All statistics are based on Rasch CHIPS.
[a]Pt-measure correlation = Point-measure correlation.

Figure 21 displays the Wright map for Time Management. The CHIPS scale is displayed on the left side of the figure. Persons using more strategies and items that are more difficult to endorse are placed higher on the map. Conversely, persons using fewer strategies and items that are easier to endorse are located towards the bottom of the figure. The mean for the item difficulty estimates, set at 50.00 by default when using CHIPS, and the mean for the person ability estimates (50.30) indicate that the items were targeting this group of respondents and were neither too difficult or easy to endorse. The most difficult item to endorse was TM 1 (*I stayed up all night*), while the easiest item to endorse was TM 5 (*I carefully planned the time I had available*). An inspection of the empirical item hierarchy indicated that the easier to endorse items involved careful planning of time (e.g., TM 5: *I carefully planned the time I had available*; and TM 3: *I wrote different parts of the drafts on different days*), and the item in the middle involved completing the draft one day before the deadline (e.g., TM 2: *I spent the entire day before the deadline writing*); whereas the most difficult item involved completing the draft at the very last minute (e.g., TM 1: *I stayed up all night*). The general pattern of item difficulty appears to be a progression from carefully planning the time to complete the draft to waiting until the last minute to complete the draft.

The Rasch person reliability estimate was poor at .34 and below the .80 criterion, while the Rasch item reliability estimate was excellent at .93, exceeding the .80 criterion. The person separation index was also low at .72, indicating that the participants did not form one distinct group in terms of their ability estimates. The separation index was high at 3.74 indicating nearly four groups in terms of item difficulty.

```
------------------------------------------------------------------------------
Persons using more   |  More difficult to endorse strategies
Strategies           |
   60                +
                   . |
                    T|
               .###  |
              .#### S|T TM 1: stayed up all night
       .###########  |S
   50        .###### M+M TM 2: spent entire day before deadline
          ######### S|S TM 3: wrote different parts on different days
                     |  TM 5: carefully planned time available
                .##  |T
                .## T|
                     |
                     |
   40                +
                     |
                     |
                     |
                     |
                     |
   30                +
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                     |
                     |
                     |
   20                +
                     |
                     |

                     |
                     |
                     |
   10                +
                     |
                     |
                     |
                     |
    0            .#  +
                     |
  Persons using      |  Easier to endorse items
  Fewer strategies   |
------------------------------------------------------------------------------
```

Figure 21. Wright map for Time Management. Each # is 4 persons; Each **.** is 1 to 3 persons; M = Mean; S = 1 SD from the mean; T = 2 SDs. The Wright map has been attenuated to fit in one page.

Summary of Rasch Results for Self-Regulated Learning Strategy Use

The unidimensionality of nine constructs describing the use SRL strategies to achieve a certain goal was examined using Rasch analyses. All the scales met the less than .3 criterion for unidimensionality and the inspection of item residual loadings did not reveal any contradictory dimension. However, the disattenuated correlation in most of the constructs was below the criterion value of .80 (Elwood, 2011). This was probably due to the fact that the constructs were not designed to assess the use of one specific type of self-regulatory strategy, but instead they were designed to describe the use of several types of strategies to achieve one common goal.

In addition, in most of the scales, the majority of the items had fit statistics within the .5-1.5 criterion chosen for the current study. Items that were not meeting the .5-1.5 criterion were identified in Increase Motivation to Write (IMW 4), Adjust Environment (AE 3), Increase Motivation to Continue Writing (IMCW 9 and AW 11), Assess Writing (AW 8 and AW 12) and Time Management (TM 4). These items were eliminated from further analyses. Moreover, most of the scales indicated a certain degree of kurtosis for the data. However, as the scales focused on the "use" of SRL strategies, a deviation from a normal distribution is expected (Ullman, 2006), as some respondents will report more use than others. Therefore, considering the nature of the constructs and the fact that most of the items in all the scales met all other criteria for adequate fit, it was concluded that all the items in the scales formed fundamentally unidimensional constructs.

Chapter 4 Summary

In this chapter, I have described in detail the results of Exploratory Factor analyses and Rasch rating scale analyses conducted to assess the dimensionality of all five instruments selected for the current study: Academic Writing Self-Efficacy, Goal-Orientation, Writing Attitude and SRL Strategy Use.

The results indicated a completely different structure from what was initially hypothesized for the Academic Writing Self- Efficacy scale, and for the Goal Orientation scale, while for the Writing Attitude scales, and SRL strategies only some items were lost.

The initial Academic Writing Self-Efficacy scale was hypothesized to be composed of 7 subscales (Sentence-Writing Self-Efficacy, Paragraph-Writing Self-Efficacy, Essay Writing Self-Efficacy, Essay Type Self-Efficacy, Discrete Level Self-Assessment Self-Efficacy, General Level Self, Assessment Self-Efficacy, and Revision Self-Efficacy), but the results of EFA yielded a 4-subscales structure which were labeled Academic Writing Self-Efficacy, Grammar Self-Efficacy, Self-Assessment Self-Efficacy and Revision Self-Efficacy. This structure was confirmed by the Rasch rating scale analyses.

In relation to Goal Orientation, the initial structure included three subscales for each type of goal orientation (Mastery, Performance-Approach, Performance-Avoidance), but the results yielded a 2-subscales structure, which were labeled Mastery Goal Orientation and Approach-Avoidance Goal Orientation. In addition, the Writing Attitude scale lost one item (WA 1), while some of the SRL learning scales (Increase

Motivation to Write, Adjust Environment, Increase Motivation to Continue Writing, Assess Writing, and Time Management also one to two items, as they were eliminated from further analyses as they did not meet the fit criterion chosen for the current study.

Overall, the in spite of the changes in the structure of some of the scales, the results indicated that the items in all the scales formed fundamentally unidimensional constructs. The person measures obtained from Rasch rating scale analyses were use in subsequent structural equation modeling analyses.

CHAPTER 5

RESULTS

In this Chapter, I report the results for the three research questions investigated in the current study. As described in Chapter 2, first, I first discuss the results for the measurement models subsumed under the hypothesized model of L2 writing achievement and subsequently describe the result for the full hypothesized structural equation model. Following this discussion, I describe the results for research questions 2 and 3.

Research Question 1 Results: Relationships in the Hypothesized Model of L2 First-Year Writing Achievement

In this section, I describe the results of the SEM analyses conducted to investigate research question 1, which concerned the hypothesized relationships among TOEFL, Writing Attitude, SRL Strategy Use, Goal Orientation, and Essay Grade. The results are presented in four stages: First, the results of the SRL Strategy Use, Academic Writing Self-Efficacy, and Goal Orientation measurement models are reported. Second, the results of the hypothesized full model of L2 writing achievement are described.

Measurement Models

The first step in the SEM analysis was to assess the validity of the measurement models (Byrne, 2006; Ullman, 2006). Three measurement models—Academic Writing

Self-Efficacy, SRL Strategy Use, and Goal Orientation—were investigated prior to conducting the full latent variable model analysis. Hereafter, I discuss the results for each of them.

Academic Writing Self-Efficacy Measurement Model

The Academic Writing Self-Efficacy measurement model included Self-Efficacy as a latent variable and four measured variables: Writing Self-Efficacy, Grammar Self-Efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy (See Figure 22).

The results indicated that the data for Academic Writing Self-Efficacy fit the measurement model well (See Table 84). Mardia's normalized estimate of 10.37 exceeded 5.0 and a degree of kurtosis was present; thus, the results for robust ML estimation are reported. The goodness-of-fit statistics met multiple criteria for adequate fit. The model Chi-Square was non-significant with χ^2 (6) = 299.99 (p > .05), and the χ^2/df ratio met the criterion value of less than 2 (Hu & Bentler, 1998). The fit indices all had values above .90 (Hu & Bentler, 1999): CFI = .99, RMSEA = .051, 90% CI = .000-.169, and standardized residuals = .007 and .011 were less than .03 for standardized residuals (Byrne, 2006). In addition, all paths were significant and they ranged from .73 to .94 (See Figure 23); therefore, no modifications were made to this model.

The results also provided evidence that Self-Efficacy for Self-Assessment is an indicator of Academic Writing Self-Efficacy. Most measures of writing self-efficacy only include items assessing students' confidence in writing grammatically correct sentences and different parts of an essay and examine their confidence regarding revision skills. Rarely is confidence in their ability to identify areas in need of revision, or self-assessment, included in these measures, even when it is an essential skill if learners are to be successful in revising their written work.

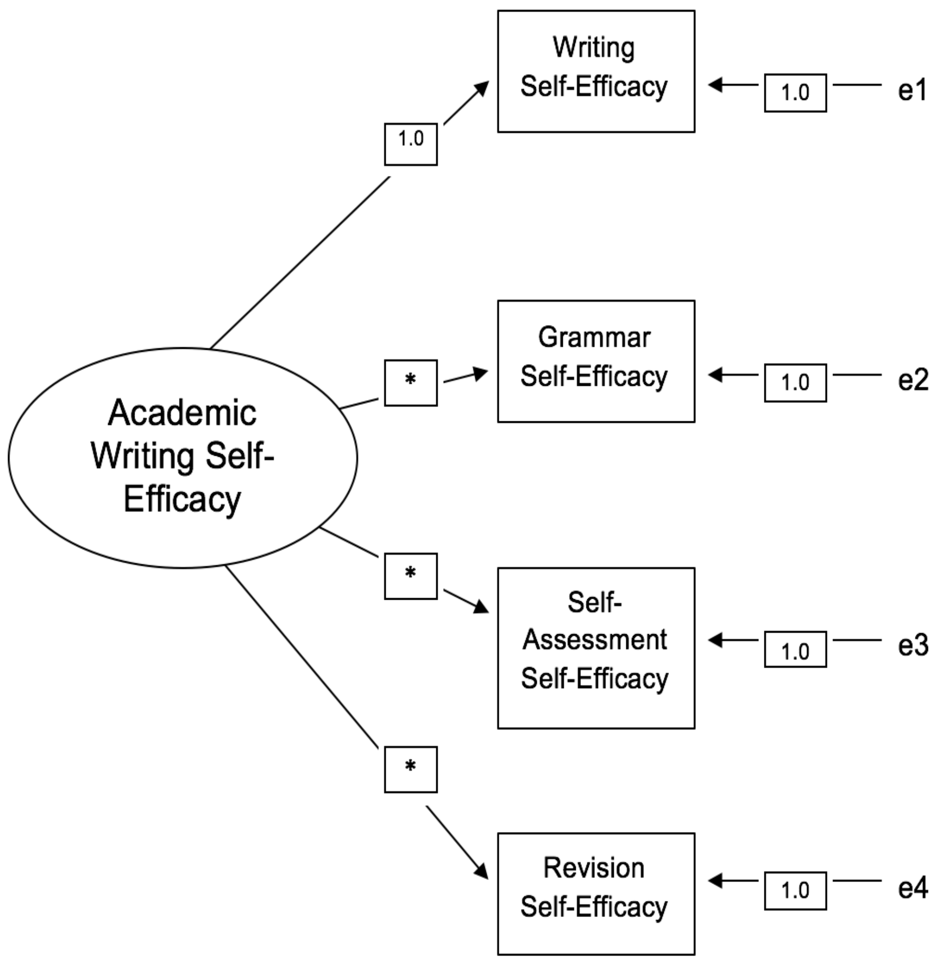

Figure 22. Academic Writing Self-Efficacy measurement model. Circles represent latent variables; squares represent measured variables; small squares with asterisk positioned on the arrows indicate that the parameter is free, while those with the value of 1.0 indicate that the variance was set to 1.0. e represents the error variance for each measured variable. These elements are required in the specification of a SEM measurement model.

To summarize, the Academic Writing Self-Efficacy measurement model yielded adequate goodness-of-fit statistics and statistically significant loadings for all the paths, indicating that it is a valid measure of self-efficacy for academic writing.

Table 84. *Summary of Fit Statistics for Academic Writing Self-Efficacy Measurement Model*

	Original model
Reliability coefficient (rho)	.923
Multivariate Kurtosis	
Mardia's coefficient	11.072
Normalized estimate	10.386
Residuals	
Average absolute standardized residuals	.006
Average off-diagonal absolute standardized residuals	.001
Model χ^2	
Model estimation method	ML (Robust)
Independence model χ^2 (df = 6)	299.991
Satorra-Bentler scales χ^2 (df =2)	2.886
Probability value for χ^2 statistic	.280
χ^2/df ratio	49.998
Fit Indices	
Comparative fit index (CFI)	.990
Incremental fit index (IFI)	.990
Root mean-square error of approximation (RMSEA)	.051
90% CI	.000-.169

Note. N = 170.

Self-Regulated Learning Strategy Use Measurement Model

Originally, the SRL strategy use model was conceptualized as having SRL strategy use as a third order latent variable, and three second-order Strategy Use latent variables; these three latent variables included SRL strategy use Before Writing, SRL strategy use While Writing, and SRL strategy use After Writing (see Figure 23). The original questionnaire developed to measure the use of self-regulatory strategies was organized into three sections—Before Writing, During Writing, and After Writing—to mirror the stages of self-regulation identified in the models of self-regulated learning proposed by Zimmerman and Kitsantas (2007) and Pintrich (2004). In both models, learners are thought to pass through initial, intermediary, and final stages as they engage

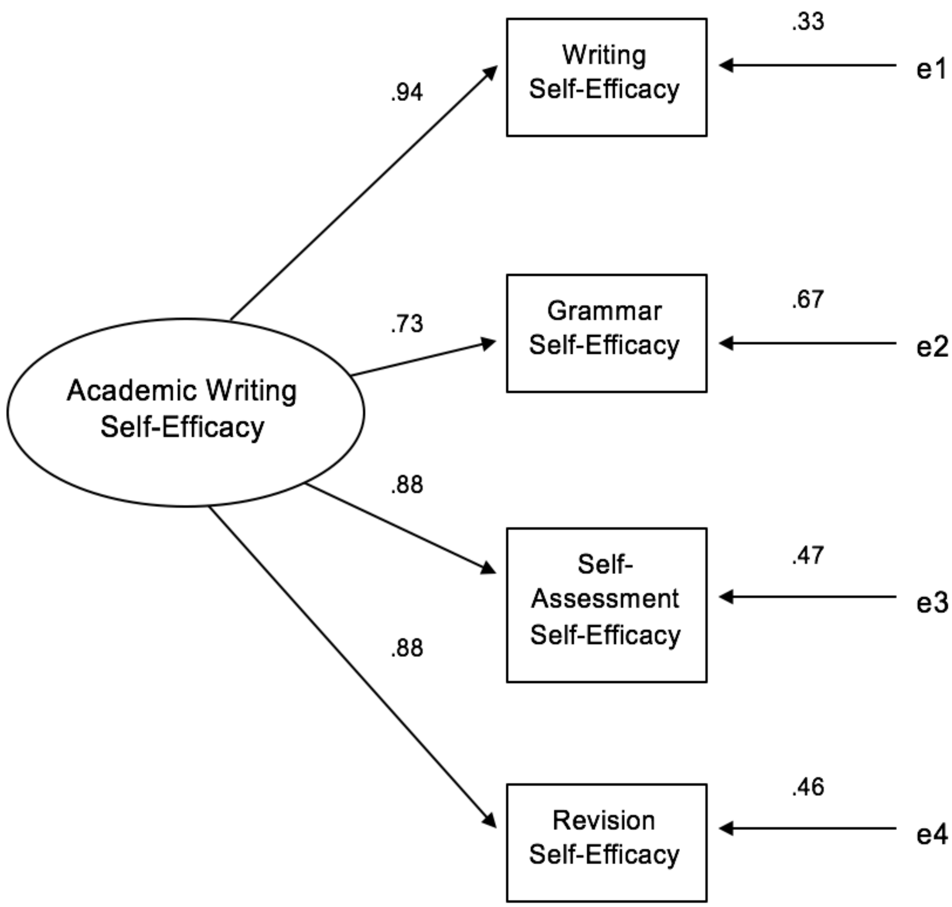

Figure 23. Academic Writing Self-Efficacy measurement model with standardized values for significant paths.

in strategies to regulate the writing task, the environment, their motivation, and self-efficacy, as well as the written products. However, as illustrated by Figure 24,

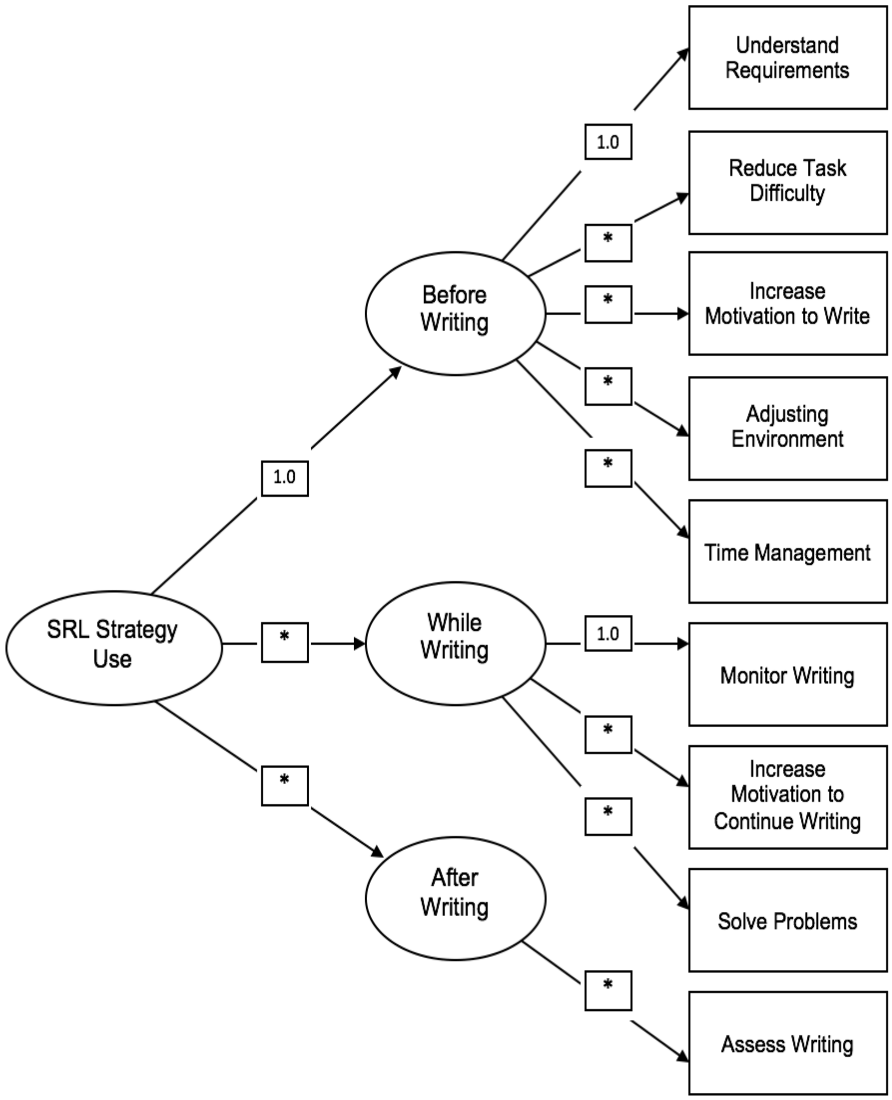

Figure 24. Initial conceptualization of SRL strategy use with three second-order latent variables conceptualized by stages. For the purpose of simplicity, error measures and disturbances are not included.

conceptualizing SRL strategy use in stages results in the latent variable After Writing having only one measured variable, or indicator, which can be considered a violation of SEM principles, as "latent variables are unobservable and require two or more measured indicators" (Ullman, 2006, p. 36). Therefore, the SRL strategy use model was conceptualized differently to ensure that there were at least two measured variables for each second-order latent variable.

Figure 25 displays the modified measurement model for SRL strategy use.

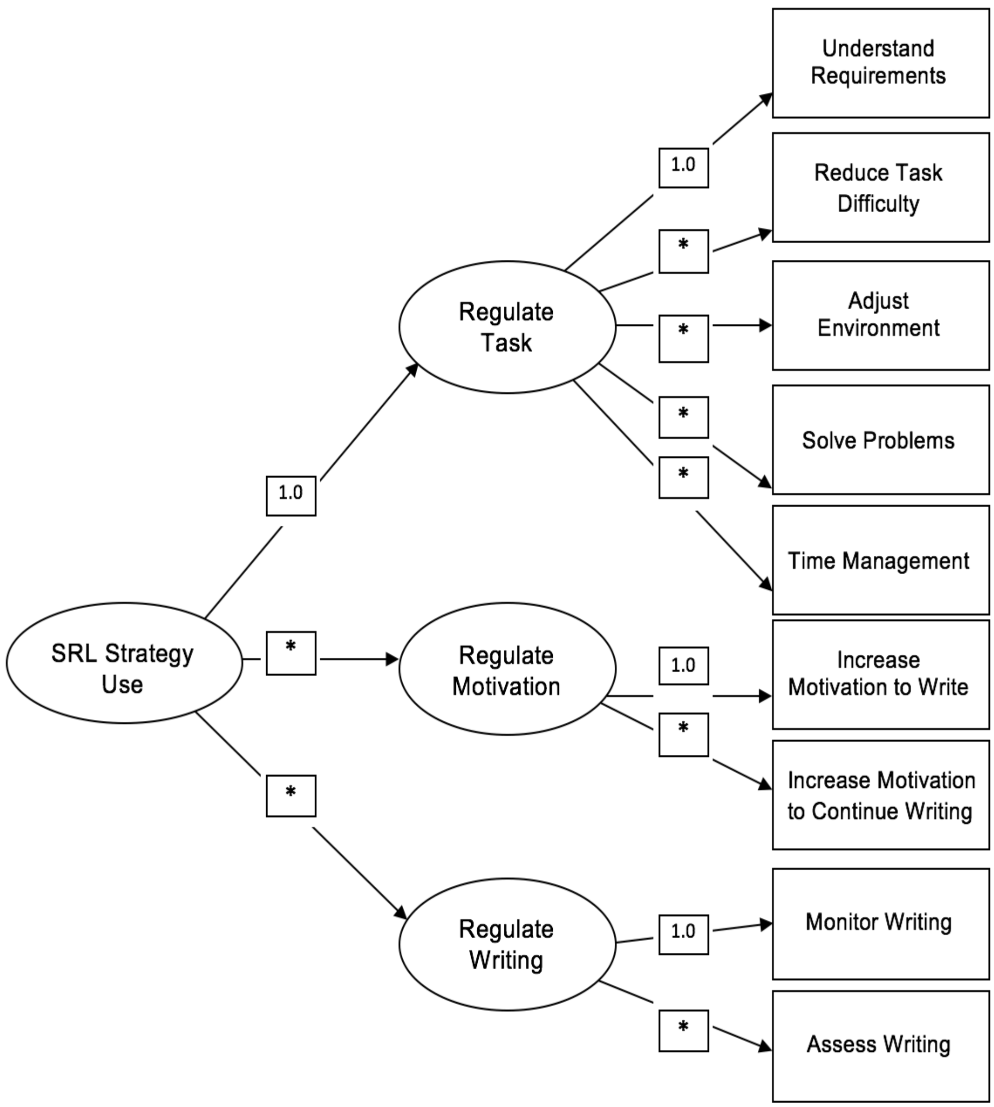

Figure 25. Modified conceptualization of SRL strategy use with three second-order latent variables conceptualized by stages. For the purpose of simplicity, error measures and disturbances are not included.

In addition to the third order SRL strategy use latent variable, it includes three second-order latent variables: Regulate Task, Regulate Motivation, and Regulate Writing. These three latent variables, Regulate Task, Regulate Motivation, Regulate Writing, subsumed under the latent variable SRL Strategy Use correspond to the three areas in which self-regulation can occur and that are identified in Zimmerman and Kitsantas (2007) and Pintrich's (2004) models. The areas of self-regulation described in these models include task, person, behavior, environment, motivation, affect, and written products. Therefore, the theoretical foundations of the models of SRL that form the theoretical basis for the present study support this new conceptualization.

The fit statistics for the modified SRL strategy use model are shown in Table 85.

Table 85. *Summary of Fit Statistics for SRL Strategy Use Measurement Model*

	Original model
Reliability coefficient (rho)	.910
Multivariate Kurtosis	19.161
Mardia's coefficient	8.883
Normalized estimate	
Residuals	.033
Average absolute standardized residuals	.008
Average off-diagonal absolute standardized residuals	
Model χ^2	ML (Robust)
Model estimation method	550.152
Independence model χ^2 (df = 36)	58.320
Satorra-Bentler scales χ^2 (df =24)	.000
Probability value for χ^2 statistic	2.400
χ^2/df ratio	
Fit Indices	
Comparative fit index (CFI)	.930
Incremental fit index (IFI)	.931
Root mean-square error of approximation (RMSEA)	.092
90% CI	.062-.122

Note. *N* = 170

The goodness-of-fit statistics for the SRL strategy use measurement met most of the criteria for adequate fit. The model Chi-square value was significant with χ^2 (36) = 550.15 ($p < .01$), indicating poor fit. However, as the model Chi-square can be influenced by small sample sizes, the result was attributed to the effects of the small sample size in the present study. The $\chi^2/df = 2.43$ which is considered a more reliable indicator of adequate fit (Hu & Bentler, 1998) was slightly over the criterion value of 2: $\chi^2/df = 2.43$. However, all the fit indices exceeded the value of .90 (Hu & Bentler, 1999) CFI = .930, IFI = .931 and the confidence interval was within range: 90% CI = .062-.122. In this case, however, the RMSEA exceeded the criterion value, suggesting mediocre fit (Byrne, 2006). However, as RMSEA is sensitive to small sample sizes, it is possible that the small sample size used in the current study affected the statistic for the RMSEA index. An examination of the results of the Lagrange multiplier test indicated that modifications would only marginally improve model fit. In addition, considering that the standardized path coefficients were all significant ($p < .05$) and reasonably strong, ranging from .59 to .94 (see Figure 26), it was concluded that the model displayed adequate fit.

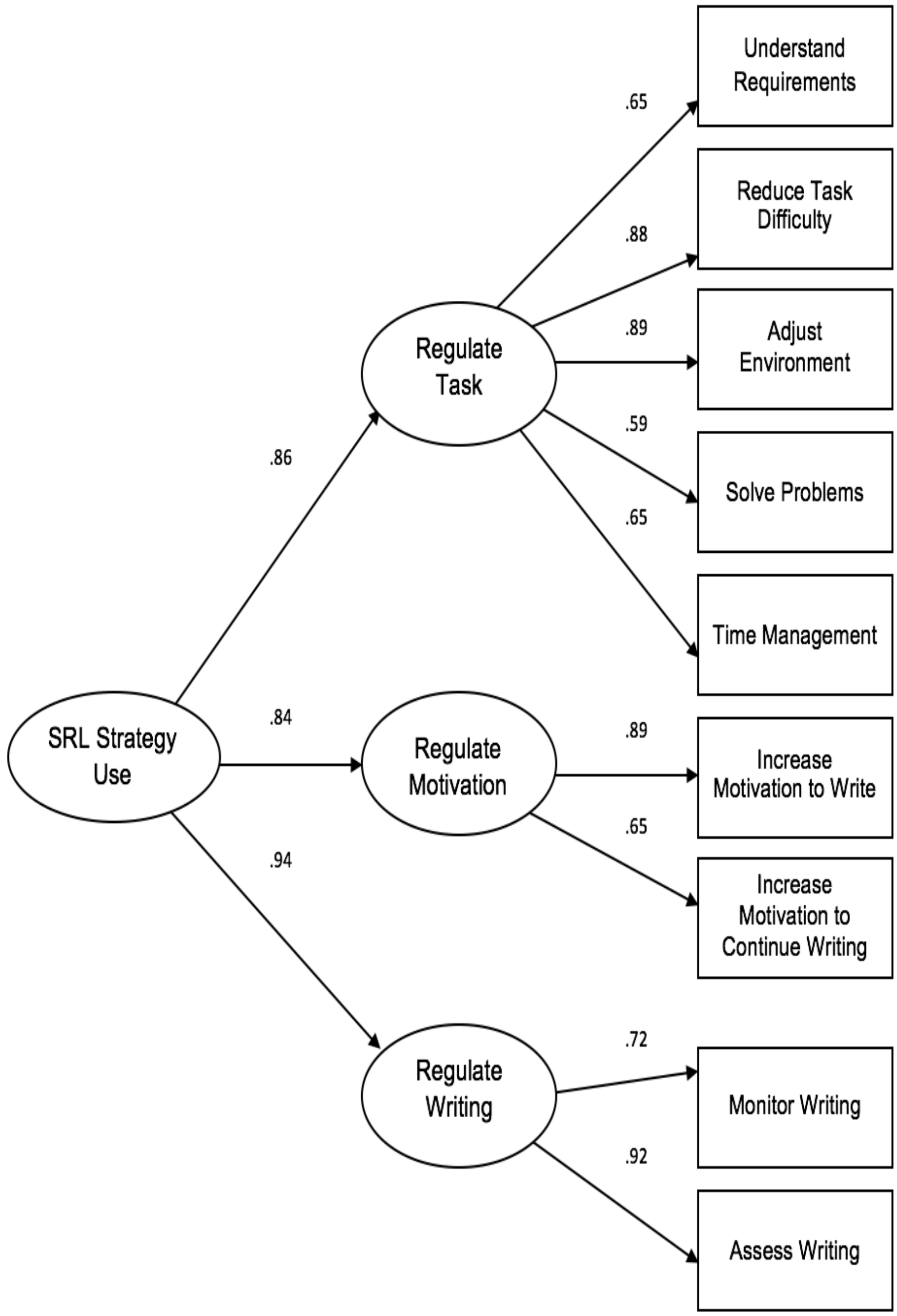

Figure 26. Standardized Solution for SRL strategy use measurement model. Numerical values indicate that path coefficients were significant at $p < .05$.

Goal Orientation Measurement Model

The Goal Orientation measurement model included Goal Orientation as the latent variable and Mastery Goal Orientation and Approach-Avoidance Goal Orientation as the measured variables (see Figure 27). This measurement model is based on the Patterns of Adaptive Learning Survey (Midgley et al., 2000), which includes three scales: mastery, performance-avoidance, and performance-approach; however, for these data the preliminary analyses yielded only two scales, with performance-avoidance and performance-approach combining into a single variable. The Goal Orientation measurement model, as specified in Figure 27, failed to converge and EQS yielded a condition code, possibly due to the fact that it only included only two measured variables. In spite of this problem, this measurement model was retained and included in analysis of the full latent variable model given that the condition code often disappears in the testing of the full structural equation model (Byrne, 2006, p. 203).

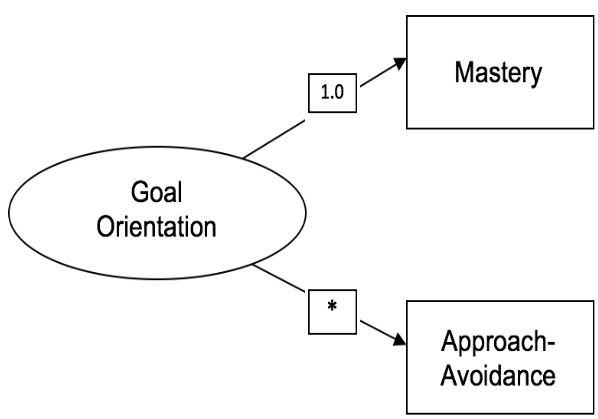

Figure 27. Goal Orientation measurement model. Circles indicate latent variables and squared indicate measured variables.

Summary of Measurement Model Results

The fit of three measurement models included in the hypothesized full latent variable model for the current study was investigated in this section. The results indicated that Academic Writing Self-Efficacy and SRL Strategy Use had adequate goodness-of-fit statistics, indicating that they form valid constructs. However, problems with conversion were encountered when assessing the SRL Strategy Use measurement model. Originally, SRL Strategy Use was conceptualized as having three latent variables: Before Writing, While Writing, and After Writing. However, as the latent variable After Writing had only one measured variable, or indicator, which violates assumptions of SEM, it was necessary to re-conceptualize the SRL Strategy Use measurement model. Following the assumptions of the models of SRL that served as the theoretical basis for the study, the SRL Strategy Use measurement model was re-conceptualized as having three different latent variables: Regulate Task, Regulate Motivation, and Regulate Writing. With these changes, each latent variable subsumed at least two measured variables. In addition, conversion problems were also encountered with the Goal Orientation Measurement model. Following recommendations from Byrne (2006) that conversion problems are likely to disappear when testing the full structural model, no changes were made to Goal Orientation measurement model, and it validity was tested in the analysis of the full latent variable model.

Full Latent Variable Model

In this section, I first review the hypothesized model of L2 writing achievement and remind the reader of the hypotheses that were postulated about the relationships among the variables examined in the present study: English Proficiency, Writing Attitude, Academic Writing Self-Efficacy, Goal Orientation, and SRL Strategy Use. Next, I discuss the modifications I made to the model. Subsequently, I describe the results of results of SEM analysis on the full model.

Full Latent Variable Model and Hypotheses

In the hypothesized Model of L2 First-year Writing Achievement displayed in Figure 28, SRL Strategy Use, Goal Orientation, and Academic Writing Self-Efficacy are latent variables, while Writing Attitude, and TOEFL are the observed variables. Essay Grade is the outcome variable.

Several hypotheses were postulated for the interrelationships among SRL Strategy Use, Academic Writing Self-Efficacy, Goal Orientation, Writing Attitude, Proficiency level, as measured by TOEFL iBT, and Writing Achievement.

Proficiency level indicated by TOEFL iBT directly impacts writing achievement or indirectly impacts it through its influence on Writing Attitude and SRL Strategy Use. Second-language acquisition research has consistently established a positive link between high proficiency writing attitudes and achievement (Yigzaw, 2013). In terms of attitudes, Sasaki and Hirose (1996) found significant differences in the attitudes towards academic writing of students with high and low proficiency scores, indicating a positive relationship between proficiency scores and writing attitude. They also found a positive relationship between proficiency scores and level of writing achievement.

Writing Attitude had a positive impact on SRL Strategy Use. Findings from research in SRL indicate that value beliefs and positive attitudes are related to the use of SRL strategies (Hammann, 2005; Pintrich & De Groot, 1990; Wolters & Pintrich, 1998). Academic Writing Self-Efficacy directly influenced writing achievement, and it exerted an indirect influence through the impact of Goal Orientation, and SRL Strategy Use. In both first- and second-language writing studies, researchers have reported a direct influence of self-efficacy on writing achievement (e.g., Chea & Shumow, 2014; Hetthong & Teo, 2013; Pajares & Valiante, 1997, 1999; Pajares et al., 1999; Pintrich and De Groot, 1990; Prat-Sala and Redford, 2012; Woodrow, 2011; Zimmermann and Bandura, 1994). Research findings also indicate that writing attitudes are positively related to academic writing self-efficacy (e.g., Pajares & Valiante, 1999; Pajares, et al., 2007; Rezaei & Rassaei, 2015), therefore, it is plausible to assume that academic writing self-efficacy also influences writing attitudes. There is also evidence that higher levels of writing self-efficacy beliefs result in more use of SRL strategies (e.g., Pintrich & De Groot, 1990; Zhao & Dong 2011; Zimmerman & Martinez-Pons, 1990) in both first- and second-language writing research. Finally, a relationship between writing self-efficacy and goal orientation has also been reported in writing research (e.g., Chea & Shumow, 2014; Pajares et al., 2000).

Goal Orientation had an indirect impact on writing achievement through the influence of Writing Self-Efficacy and SRL Strategy Use. As discussed in the literature review Findings in writing research indicate that goal orientation predicts writing self-efficacy (e.g. Kaplan, et al., 2009; Pajares & Cheong, 2003; Pajares et al., 2000) and that all three types of goal orientation, mastery, performance-approach, and approach avoidance, (e.g., Tadlock, 2016) are related to SRL strategy use.

SRL Strategy Use mediated the effects of English Proficiency, Writing Attitude, Academic Writing Self-Efficacy, and Goal Orientation, or exerted a direct effect on Essay Grades. In the literature in first- and second-language writing, SRL strategy use has been found to predict writing achievement (Mehrabi et al., 2016; Wolters, 1998, 1999; Zhao & Dong, 2011) and to be related to general English proficiency (e.g., Sasaki & Hirose, 1996), writing attitudes (e.g., Hammann, 2005), academic writing self-efficacy (e.g., Pintrich & De Groot, 1990; Zhao & Dong 2011; Zimmerman & Martinez-Pons, 1990), and goal orientation (Kaplan et al., 2009; Farsani, et al, 2014). Therefore, it is plausible to assume that SRL strategy use will mediate the influence of these variables.

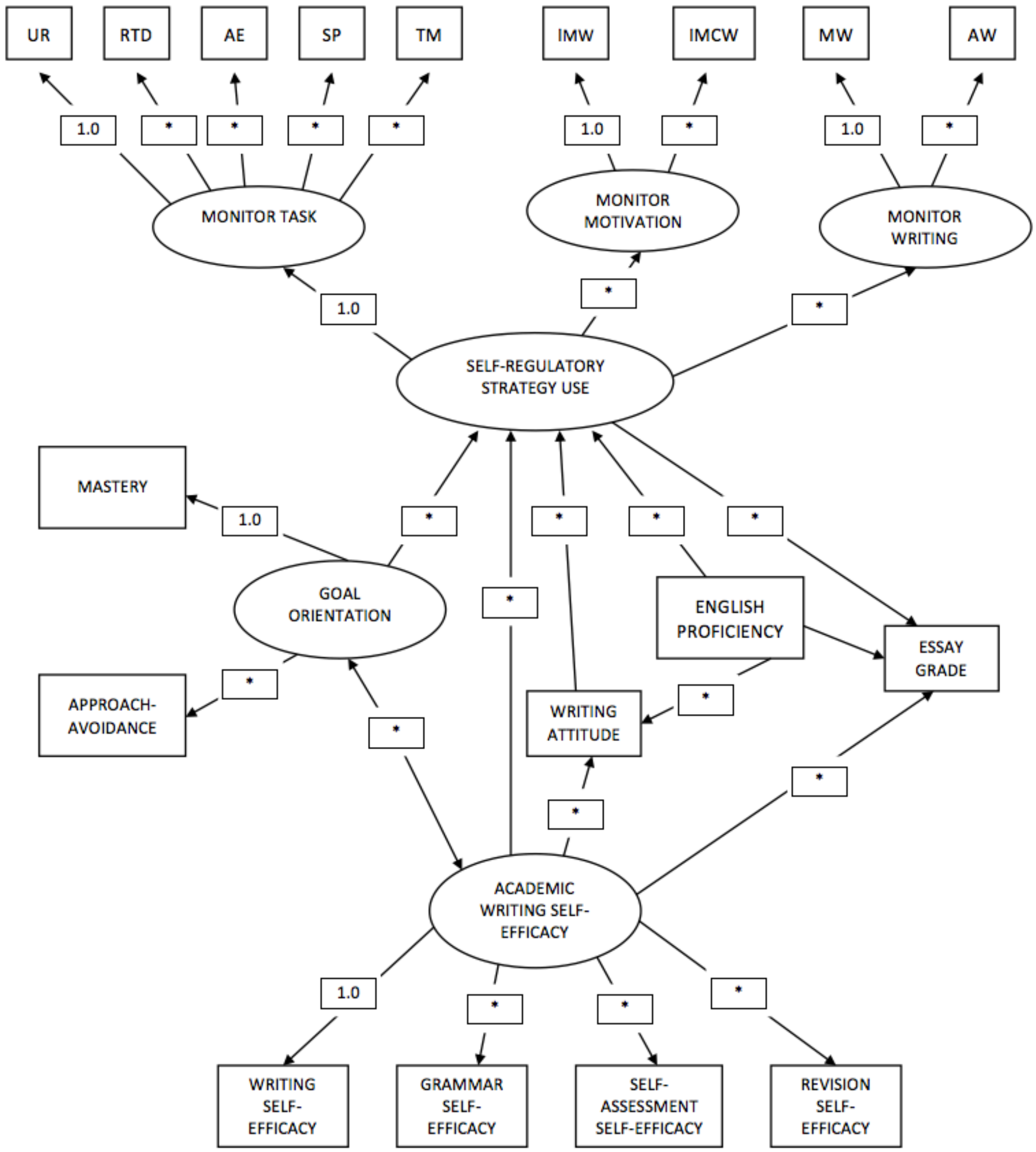

Figure 28. Hypothesized Model of L2 First-Year Writing Achievement specifications. UR = Understand Requirements; RTD = Reduce Task Difficulty; AE = Adjust Environment; SP = Solve Problems; TM = Time Management; IMW = Increase Motivation to Write; IMCW = Increase Motivation to Continue Writing; MW = Monitor Writing; AW = Assess Writing.

Modifications and Results

The initial hypothesized Model of L2 First-year Writing Achievement met multiple criteria for adequate model fit (See Table 86) and the standardized path coefficients indicated that, with the exception of three paths: English Proficiency to Writing Attitude, Academic Writing Self-Efficacy to SRL Strategy Use, and Academic Writing Self-Efficacy to SRL Strategy Use, all other paths were statistically significant (See Figure 29). However, a modification was made to the initial model due to the fact that a problem affecting the path from Approach-Avoidance to Goal Orientation was identified in the Goal Orientation measurement model (See Figure 28).

As mentioned in the previous section, the Goal Orientation measurement model did not converge, but it was retained so that its validity could be assessed with the full model. The results indicated that the path from Goal Orientation to Approach-Avoidance Goal Orientation was not significant, suggesting that this measured variable was not an indicator of the latent variable Goal Orientation; thus, a decision was made to delete the path from Goal Orientation to Approach-Avoidance Goal Orientation. As a result, the latent variable Goal Orientation also had to be deleted, as latent variables cannot have less than two measured variables (Ullman, 2006); only Mastery Goal Orientation, as a dependent variable, was retained (Modified Model). In support of this decision, feedback obtained from students after administering the Goal Orientation survey was considered. Many of them reported thinking that the items described in this

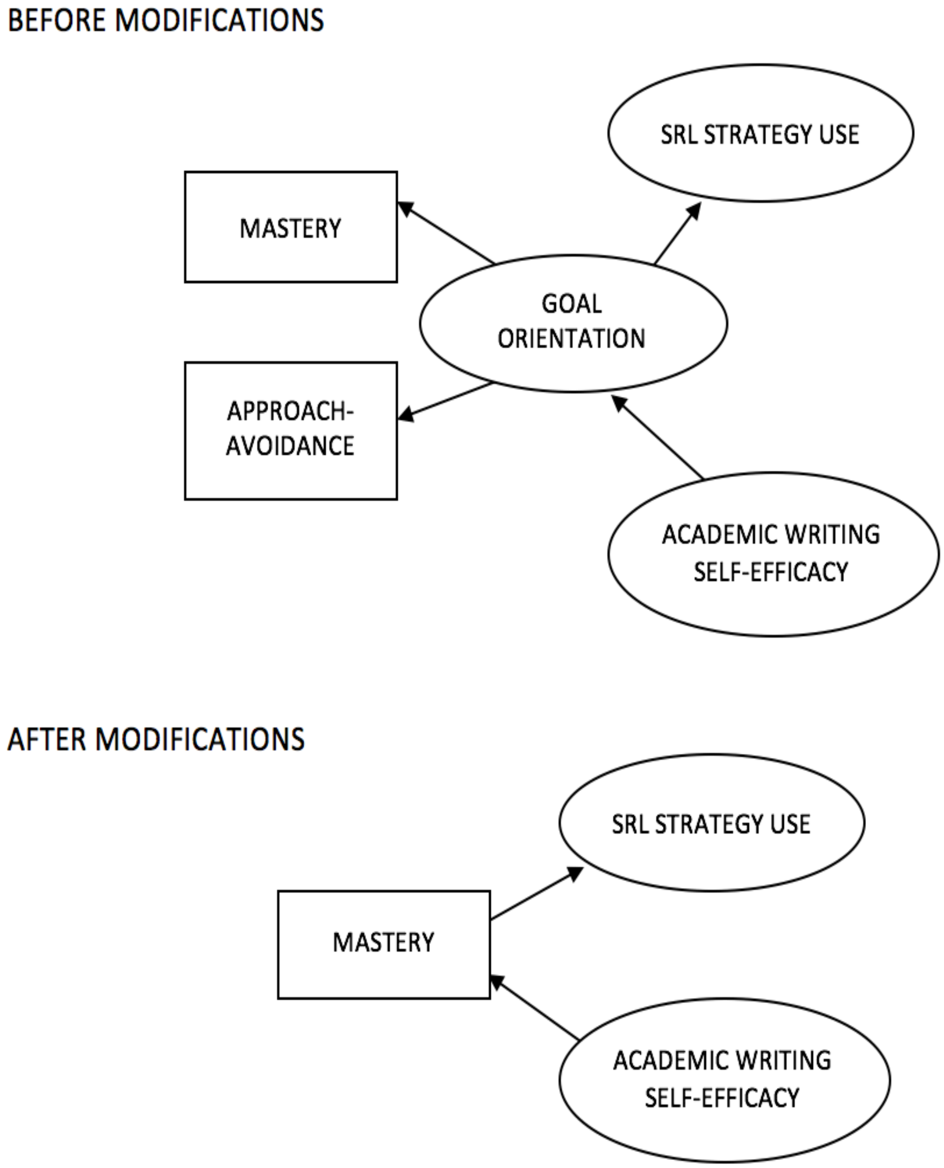

Figure 29. Partial view of the Goal Orientation measurement model. Displayed is the initial Goal Orientation measurement model before modifications (top) and the resulting Mastery Goal Orientation measured variable after modifications (bottom).

survey was considered. Many of them reported thinking that the items described in this scale were irrelevant to them. In fact, some mentioned that items such as *It is important to me to avoid looking stupid in the writing class* and *One of my goals is to show others* *that writing essays is easy for me,* which are representative of this scale, were "ridiculous" because they were more interested in developing writing skills, or in just passing the course. The difference in the mean scores for these two variables (43.73 for Approach-Avoidance and 66.03 for Mastery) also lend support to the feedback received from the students and to the decision to make this modification in the model. As a result of this modification, the initial covariance relationship between Goal Orientation and Academic Writing Self-efficacy also had to be modified, as a covariance cannot exist between two dependent variables. Therefore, a path from Academic Writing Self-Efficacy to Mastery Goal Orientation was created (Modified Model), as the reversed initial path from Mastery Goal Orientation to Academic Writing Self-Efficacy was not statistically significant and the initially hypothesized covariance had to be tested in both directions. Goodness-of-fit statistics for the initially hypothesized model and the modified model are summarized in Table 86. Kurtosis for the modified model was slightly in excess of the recommended 5.0 criterion, so the Maximum Likelihood results are reported for both models. These modifications did not change the statistical significance of the paths, but they slightly enhanced the goodness-of-fit statistics; therefore, the Modified Model was selected as the final model.

The final model met most of the criteria for adequate fit. The model chi-square for the full latent variable was significant with χ^2 (136) = 1598.423 ($p < .01$), suggesting that the model did not fit the data well. However, since the model Chi-square is believed to be sensitive to small sample sizes (Tanaka, 1993), the small sample size in the present study may have affected this result. However, the χ^2/df ratio, considered to be a more reliable indicator of fit (Hu & Bentler, 1998) met the criterion with a value of less than 2: χ^2/df ratio = 1.8 and indicated adequate fit. The majority of the fit indices were in excess of .90 (Hu & Bentler, 1999), indicating adequate fit: CFI = .934, IFI = .932, and 90% CI = .063-.092. The RMSEA statistic of .071 was slightly higher than the recommended criteria for adequate fit, but because RMSEA is sensitive to sample size (Byrne, 2006), it was reasonable to assume that it was affected by the sample size.

Table 86. *Summary of Fit Statistics for Hypothesized Full Latent Variable Model*

	Initial model	Modified model
Reliability coefficient (rho)	.873	.900
Multivariate Kurtosis		
Mardia's coefficient	18.472	20.450
Normalized estimate	4.491	5.250
Residuals		
Average absolute standardized residuals	.061	.060
Average off-diagonal absolute standardized residuals	.062	.060
Model χ^2		
Model estimation method	ML	ML
Independence model χ^2 (*df* =153,136)	1635.370	1598.424
Probability value for χ^2 statistic	.000	.000
Chi-square	241.900	206.830
χ^2/df ratio (126, 110)	1.911	1.880
Fit Indices		
Comparative fit index (CFI)	.922	.934
Incremental fit index (IFI)	.923	.932
Root mean-square error of approximation (RMSEA)	.071	.070
90% CI	.063-.092	.063-.092

Note. *N* = 170. In the modified model, the latent variable Goal Orientation was eliminated and replaced Mastery Goal Orientation, as a measured variable. The covariate path between Goal Orientation and Academic Writing Self-Efficacy was modified to go from Academic Writing Self-Efficacy to Mastery Goal Orientation.

The standardized coefficients for the hypothesized paths indicated that with the exception of the paths from Writing Academic Self-Efficacy to SRL Strategy Use and to Mastery Goal Orientation, English Proficiency to Writing Attitude, and SRL Strategy Use to Grade, all paths were statistically significant (see Figure 30); however, the strength of some paths was weak (< .20).

The results confirmed some of the hypotheses postulated for the current study, but did not confirm others. In relation to the influence of English Proficiency on Grade, Writing Attitude and SRL Strategy Use (Hypothesis 1), the results indicated that English Proficiency as measured by the TOEFL iBT had a statistically significant influence on Grade ($\beta = .14$, $p < .05$) and SRL Strategy Use ($\beta = -.24$, $p <$ 05), but not on Writing Attitude ($\beta = -.05$, $p > .05$). These results lend partial support to findings in ESL writing research (e.g., Hirose and Sasaki, 1996) in which English proficiency positively influenced both of these variables. The negative correlation between English Proficiency and SRL Strategy Use suggests that students with higher English proficiency scores relied less on SRL strategies than students with lower English proficiency scores. With regards to the direct impact of Writing Attitude on SRL Strategy Use (Hypothesis 2), the results confirmed the hypothesis and yielded a statistically significant path between these two variables ($\beta = .15$, $p < .05$), suggesting that students with favorable attitudes towards writing are likely to use more SRL strategies, and confirming previous findings in ESL and first-language writing research (e.g., Hirose & Sasaki, 1996; Pintrich & De Groot, 1990; Wolters & Pintrich, 1998).

Concerning the influence of Academic Writing Self-Efficacy on Essay Grade, Writing Attitude, Goal Orientation, and SRL Strategy Use (Hypothesis 3), the results confirmed only some of these relationships. Academic Writing Self-Efficacy had a direct statistically significant influence on Essay Grade ($\beta = .21$, $p < .05$), confirming the findings in the literature on first-language writing research (e.g., Pajares & Valiante, 1997; Woodrow 2011), and suggesting that students with higher grades have more confidence in their writing skills. Academic Writing Self-Efficacy also had a positive influence on Writing Attitude ($\beta = .45$, $p < .05$), a finding that had not previously been reported in the ESL or first-language research literature on writing, but that has often been confirmed in other areas of self-regulated learning. However, Academic Writing Self-Efficacy did not have a significant impact on SRL Strategy Use ($\beta = .11$, $p > .05$). This result was unexpected considering that most first-language writing researchers have reported a direct link between these two variables (e.g., Wolters & Rosenthal, 2000). It was also unexpected to find that Academic Writing Self-Efficacy did not have a direct influence on Mastery Goal Orientation ($\beta = .09$, $p > .05$), especially when relationships between these two variables have been reported in first-language writing research (e.g., Pajares & Valiante, 1997). Possible explanations for these results are offered in the following chapter. Therefore, as direct statistically significant relationships were not found between Academic Writing Self-Efficacy and SRL Strategy Use, and Mastery Goal Orientation, the results only partially confirmed the hypothesized relationships between Academic Writing Self-Efficacy and the other measured variable.

In relation to Hypothesis 4, the indirect relationship between Goal Orientation and Writing Achievement through Academic Writing Self-Efficacy and SRL Strategy

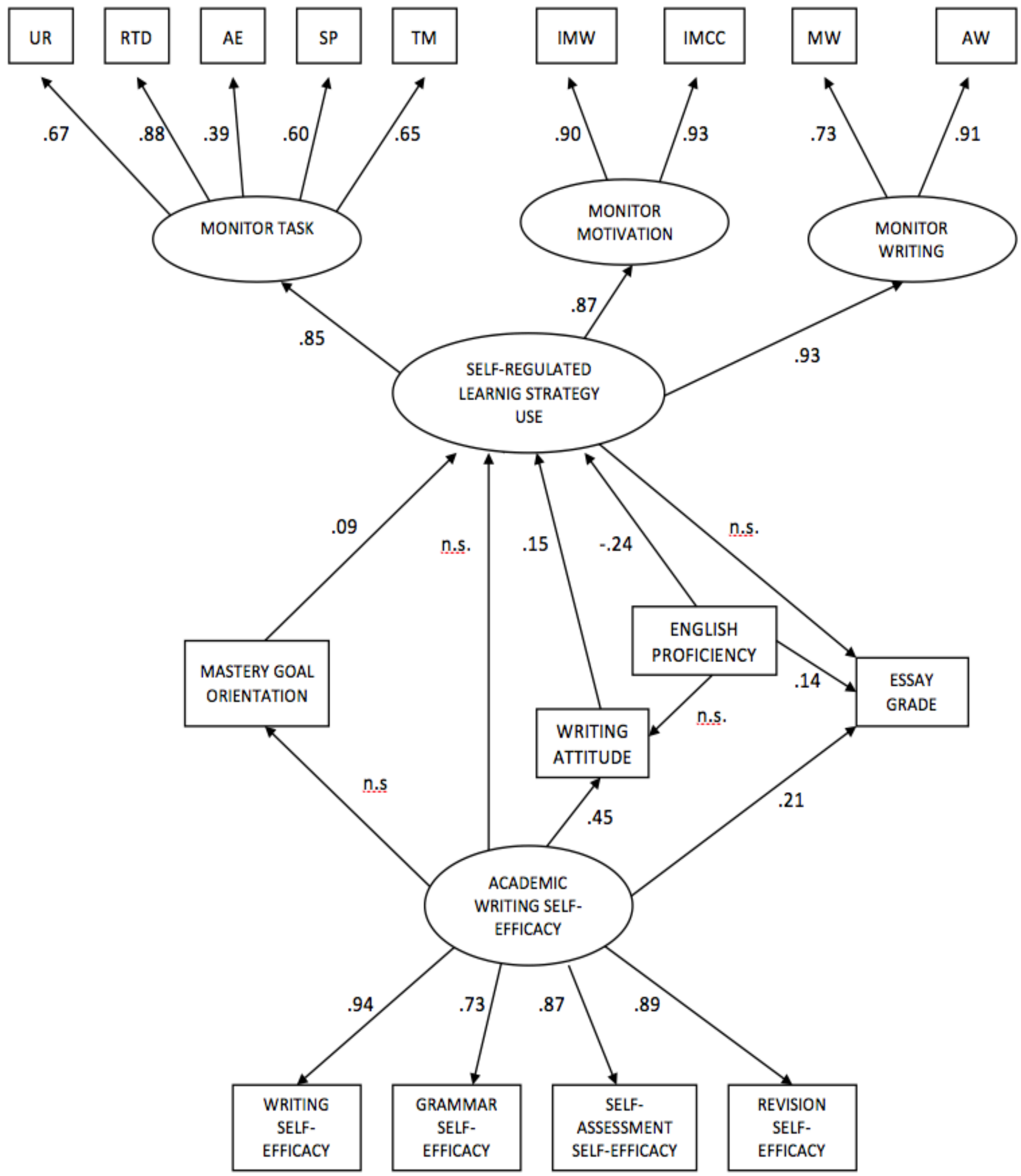

Figure 30. Hypothesized Model of L2 First-Year Writing Achievement with standardized values for significant paths. n.s = non-significant. UR = Understand Requirements; RTD = Reduce Task Difficulty; AE = Adjust Environment; SP = Solve Problems; TM = Time Management; IMW = Increase Motivation to Write; IMCW = Increase Motivation to Continue Writing; MW = Monitor Writing; AW = Assess Writing.

Use, the results only confirmed a direct influence of Mastery Goal Orientation on SRL Strategy Use ($\beta = .18$, $p < .05$). This finding suggests that students who are more interested in improving their writing skills are more likely to use more self-regulatory strategies, and it lends support to previous findings in the self-regulated learning literature.

Finally, in relation to the mediating role of SRL Strategy Use for other measured variables, or its direct impact on writing achievement (Hypothesis 5), the analyses yielded surprising and unexpected results, as the path from SRL Strategy Use to Essay Grade was not statistically significant ($\beta = -.14$, $p > .05$), indicating that the respondents' use of self-regulatory strategies does not have an impact in the grades they obtain in their essays. Possible explanations for this finding are also discussed in the following chapter.

Summary of Results for Research Question 1

In the previous section, I have described the analyses and results for research question 1, which concerned the hypothesized relationships among six variables: TOEFL, Writing Attitude, Academic Writing Self-Efficacy, SRL Strategy Use, Mastery Goal Orientation, and writing achievement, as measured by students' grades on their essays. The examination of the measurement models revealed adequate goodness-of-fit statistics for Academic Writing Self-Efficacy and SRL Strategy Use, but Goal Orientation failed to converge so its validity was assessed in the full model analysis. In the analysis of the full model the path from Goal Orientation to Approach-Avoidance

Goal Orientation was not significant, suggesting that this measured variable was not an indicator of the latent variable Goal Orientation; thus, a decision was made to delete the path from Goal Orientation to Approach-Avoidance Goal Orientation. As latent variables cannot have less than two measured variables (Ullman, 2006); only Mastery Goal Orientation, as a dependent variable, was retained. After modifications to the Goal Orientation measurement model, the final model exhibited goodness-of-fit statistics that met the majority of the criteria used in the current study. The only exception was that the p value for the model was statistically significant ($p = .001$). However, as multiple criteria were met, it was concluded that the model was indicative of adequate fit to the data, suggesting that the model was representative of the population for the current study. The statistical significance of the paths in the model confirmed some of the hypotheses postulated in the present study, but not others. The hypothesis and relationships among the variables that were confirmed and disconfirmed by the results are summarized in Table 87.

Table 87. *Summary of Results of Hypothesized Relationships in the SEM*

Hypothesis	Relationships	Results
1	English Proficiency and Essay Grade	Confirmed
1a	English Proficiency and Writing Attitude	Not Confirmed
1b	English Proficiency and SRL Strategy Use	Confirmed
2	Writing Attitude and SRL Strategy Use	Confirmed
3	Academic Writing Self-Efficacy and Essay Grade	Confirmed
3a	Academic Writing Self-Efficacy and Writing Attitude	Confirmed
3b	Academic Writing Self-Efficacy and SRL Strategy Use	Not confirmed
3c	Academic Writing Self-Efficacy and Mastery Goal Orientation	Not confirmed
4	Mastery Goal Orientation and SRL Strategy Use	Confirmed
4a	Mastery Goal Orientation and Academic Writing Self-Efficacy	Confirmed
5	SRL Strategy Use and Essay Grade	Not confirmed

It general, it is appropriate to conclude the results indicate that the model is an adequate starting point to investigate the relationship between proficiency, motivational, and self-regulated learning variables in second-language writing achievement, and that the results are indicative of the need to conduct further studies on these variables, ideally with a larger sample.

Research Question 2 Results: Gender Differences in the Hypothesized Model of L2 First-Year Writing Achievement

The second research question concerned with gender differences in the model of writing achievement that was hypothesized in the current study. Based on findings from the literature that offer inconclusive results, some studies favoring females (e.g., Ablard & Lipschultz, 1998; Zimmerman & Martinez-Pons, 1986) and other males (e.g. Wolters & Pintrich, 1998), in the current study it was hypothesized that Gender would have an impact on general English proficiency, Writing Attitude, Academic Writing Self-Efficacy, use of SRL strategies, and Goal Orientation.

To examine the influence of Gender on the latent and measured variables examined in the current study, two separate SEM analyses with the final model were conducted for males (N = 73) and females (N = 97). The results were compared and inspected for significant differences between the two groups.

The goodness-of-fit indices for each group are displayed in Table 88. In spite of the small N-sizes, the results yielded adequate fit statistics for both models. The model for females had better fit statistics. The model Chi-square probability statistics was significant with χ^2 (136) = 980.11 (p < .01), indicating poor fit, but as the Chi-square statistics can be influenced but small samples sizes (Tanaka, 1993), it was reasonable to assume that it was significant because of the small sample size. However, the χ^2/df ratio, considered to be a more reliable indicator of adequate fit (Hu & Bentler, 1998) indicated adequate fit with a value of less than 2: χ^2/df ratio = 1.34. The goodness-of-fit statistics were also indicative of adequate fit as most of the indices had values that exceeded .90 (Hu & Bentler, 1999): CFI = .95, IFI = .95, RMSEA = .06, and 90% CI = .03-.08. On the other hand, the fit indices of the model for males were lower and indicative of mediocre fit (Byrne, 2006). The model Chi-square statistic was significant χ^2 (136) = 779.657 ($p < .01$), indicating poor fit; but the χ^2/df ratio = 1.91 met the criterion of 2 criteria (Hu & Bentler, 1998). However, with the exception of the RMSEA that met the criterion with values between .05 and .06, the goodness-of-fit statistics for the other indices were also indicative of poor fit: CFI = .86, IFI = .87, RMSEA = .10, and 90% CI = .08-.13, as they were all below the criterion of .90 (Hu & Bentler, 1999) The results, thus, indicate that the hypothesized of Model of First-Year L2 Writing Achievement is more representative of the female sample than of the male sample.

With the exception of the paths from Academic Writing Self-Efficacy to Grade, and English Proficiency to SRL Strategy Use, the statistical significance of all other paths was identical for the two groups. The paths from Academic Writing Self-Efficacy to Grade and from English Proficiency to SRL Strategy Use were significant for females ($\beta = .23$, $p < .05$; $\beta = -.25$, $p <.05$, respectively), but not for males ($\beta = .19$, $p > .05$; $\beta = -.18$, $p > .05$, respectively). The results only partially support hypothesis (f) concerning the influence of Gender on all variables under investigation, but they lend support to findings in first-language writing research indicating that girls can exhibit greater efficacy in their writing skills than boys (e.g., Pajares, 2003). The results also suggest that females with higher TOEFL scores are more likely to use Self-Regulatory strategies than males, a finding that highlights the role of language proficiency in relation to other self-regulatory learning variables.

Table 88. *Comparison of Fit Statistics for Hypothesized Full Latent Variable Model for Males and Females*

	Male model	Female model
Reliability coefficient (rho)	.900	.900
Multivariate Kurtosis		
Mardia's coefficient	10.506	15.980
Normalized estimate	1.765	3.090
Residuals		
Average absolute standardized residuals	.080	.060
Average off-diagonal absolute standardized residuals	.089	.060
Model χ^2		
Model estimation method	ML	ML
Independence model χ^2 (*df* = 136,136)	779.657	980.110
Probability value for χ^2 statistic	.000	.000
Chi-square	195.684	148.420
χ^2/df ratio (110, 110)	1.910	1.340
Fit Indices		
Comparative fit index (CFI)	.867	.950
Incremental fit index (IFI)	.872	.950
Root mean-square error of approximation (RMSEA)	.104	.060
90% CI	.079-.126	.030-.080

Note. *N* = 97 for females, *N* = 73 for males; Maximum Likelihood results are reported as Mardia's coefficient < 5.0.

Summary of Results for Research Question 2

In the previous section, I reported the results obtained after conducting two SEM analyses for the hypothesized Model of First-Year Writing Achievement, one analysis for males and the other analysis for females. In spite of the small data samples for each of the two groups, both models exhibited reasonably good fit statistics. The model for females yielded more adequate fit indices than the model for males, suggesting that the hypothesized Model of First-Year L2 Writing Achievement is more representative of females. Gender differences in the two models were only found in the paths from Academic Writing Self-Efficacy to Essay Grades, and from general English proficiency to SRL Strategy Use, favoring females with significant values.

Research Question 3 Results: The Influence of Self-Regulated Learning Strategy Use and Academic Writing Self-Efficacy on Writing Achievement

In this section, I describe the results of a one-way MANOVA that was conducted to examine the second research question, which pertains with the extent to which the participants' writing achievement levels, as measured by their essay grades, differ as a result of their use of SRL strategies and their academic writing self-efficacy beliefs. In relation to this research question, and based on research findings, it was hypothesized that high-achieving students will report more use of SRL strategies (Wolters, 1998; Wolters & Rosenthal, 2000; Zimmerman & Martinez-Pons, 1986) and will report higher levels of self-efficacy beliefs than low-achieving students (Pajares & Valiante, 1997; Pajares et al., 2007).

To examine research question 3 related to the influence of SRL Strategy Use and Academic Writing Self-Efficacy on Writing Achievement, as assessed by Essay Grades, a one-way MANOVA analysis was conducted after confirming that the following assumptions were met: normal distribution of the dependent variable, homogeneity of variance between the groups, cases representing random samples of the population, and independence of scores (Field, 2005, pp. 359-360). No violations of these assumptions were found in the data. The descriptive statistics for each group on all the 13 variables are displayed in Table 89. As shown, the mean differences between the dependent variables on the basis of writing achievement were generally small.

Table 89. *Descriptive Statistics for SRL Strategy Use Dependent Variables*

					95% CI			
Measure	*N*	*M*	*SD*	*SE*	LL	UL	Min.	Max.
Understand essay requirements								
Low	37	52.94	3.99	0.66	51.65	54.27	42.50	60.90
Fair	12	54.27	4.69	1.35	51.29	57.25	47.80	60.90
Good	64	53.13	4.17	0.52	52.09	54.17	44.50	65.30
Excellent	57	51.19	3.96	0.52	50.14	52.24	41.50	65.30
Total	170	52.52	4.18	0.32	51.89	53.15	41.50	65.30
Reduce task difficulty								
Low	37	53.03	4.23	0.70	51.62	54.44	45.80	66.30
Fair	12	53.33	6.64	1.92	49.11	57.54	45.00	66.30
Good	64	53.64	3.60	0.45	52.74	54.54	45.00	66.30
Excellent	57	52.34	3.57	0.47	51.39	53.28	45.00	66.30
Total	170	53.05	4.01	0.31	52.44	53.65	45.00	66.30
Increase motivation to write								
Low	37	58.96	8.05	1.32	56.28	61.64	40.60	68.50
Fair	12	57.88	8.47	3.02	51.23	64.53	44.00	68.50
Good	64	58.23	7.81	0.98	56.28	60.18	32.30	68.50
Excellent	57	54.41	8.30	1.10	52.20	56.61	32.30	68.50
Total	170	57.08	8.38	0.64	55.81	58.35	32.30	68.50
Monitor writing								
Low	37	57.76	6.02	0.99	57.75	59.76	45.30	71.10
Fair	12	57.61	9.09	2.62	51.84	63.38	44.80	71.10
Good	64	58.83	6.54	0.82	57.20	60.47	45.30	71.10
Excellent	57	56.78	6.47	0.86	55.06	58.50	41.00	71.10
Total	170	57.82	6.61	0.51	56.82	58.82	41.00	71.10
Adjust environment								
Low	37	53.17	4.72	0.78	51.60	54.75	35.60	64.30
Fair	12	50.84	6.19	1.79	49.61	54.78	39.90	59.60
Good	64	54.42	4.26	0.53	53.36	55.49	42.70	64.30
Excellent	57	52.80	4.10	0.54	51.71	53.89	44.70	64.30
Total	170	53.35	4.54	0.35	52.67	54.04	35.60	64.30
Increase motivation to continue writing								
Low	37	55.12	4.92	0.81	53.48	56.76	45.00	65.90
Fair	12	55.08	6.06	1.75	51.23	58.93	47.10	65.90
Good	64	54.73	4.20	0.52	53.68	55.77	45.80	65.90
Excellent	57	53.34	5.94	0.79	51.76	54.91	41.60	65.90
Total	170	54.37	5.13	0.39	53.59	55.15	41.60	65.90

(Table 89 Continues)

(Table 89 Continued)

Measure	*N*	*M*	*SD*	*SE*	95% CI LL	95% CI UL	Min.	Max.
Solve problems								
Low	37	49.52	2.71	0.45	48.62	50.43	41.10	54.50
Fair	12	49.80	3.55	1.02	47.55	52.05	43.70	54.50
Good	64	49.28	2.71	0.34	48.61	49.96	43.70	53.30
Excellent	57	48.62	4.10	0.54	47.53	49.71	33.60	64.70
Total	170	49.15	3.30	0.25	48.65	49.65	33.60	64.70
Assess writing								
Low	37	51.71	5.21	0.86	49.97	53.45	41.60	67.90
Fair	12	52.77	8.09	2.34	47.63	57.91	42.90	67.90
Good	64	52.01	4.12	0.51	50.98	53.04	44.70	67.90
Excellent	57	50.95	4.36	0.58	49.79	52.10	41.60	67.90
Total	170	51.64	4.79	0.37	50.92	52.37	41.60	67.90
Time management								
Low	37	49.82	5.00	0.82	48.15	51.49	37.30	58.20
Fair	12	50.67	3.63	1.05	48.36	52.97	44.80	58.20
Good	64	50.52	3.11	0.39	49.74	51.29	37.30	58.20
Excellent	57	50.22	4.02	0.53	49.16	51.29	37.30	63.40
Total	170	50.28	3.90	0.30	49.69	50.87	37.30	63.40
Writing Self-Efficacy								
Low	37	45.19	11.18	1.84	41.46	48.92	10.20	65.40
Fair	12	45.93	0.70	2.82	39.57	52.28	29.70	59.90
Good	64	48.40	9.67	1.21	45.98	50.81	23.10	63.80
Excellent	57	52.52	9.57	1.27	49.98	55.06	23.10	71.40
Total	170	48.91	10.70	0.79	47.34	50.47	10.20	71.40
Grammar Self-Efficacy								
Low	37	48.92	9.42	1.55	45.78	52.06	34.00	79.80
Fair	12	45.70	8.59	2.48	40.25	51.15	28.90	56.50
Good	64	49.62	10.25	1.28	47.06	52.18	18.50	66.80
Excellent	57	54.24	8.37	1.11	52.02	56.46	34.00	76.00
Total	170	50.74	9.65	0.74	49.28	52.20	18.50	79.80
Assessment Self-Efficacy								
Low	37	49.05	9.66	1.59	45.83	52.27	15.30	66.90
Fair	12	47.65	10.19	2.94	41.18	54.12	35.50	65.70
Good	64	48.89	9.50	1.19	46.51	51.26	18.90	64.50
Excellent	57	52.11	8.84	1.17	49.77	54.46	24.60	65.70
Total	170	49.92	9.42	0.72	48.49	51.34	15.30	66.90
Revision Self-Efficacy								
Low	37	46.26	11.30	1.83	42.55	49.97	8.80	67.10
Fair	12	45.87	9.17	2.65	40.04	51.70	32.90	59.10
Good	64	47.87	11.67	1.46	44.96	50.79	14.50	73.50
Excellent	57	53.61	12.44	1.65	50.31	56.91	29.30	92.80
Total	170	49.30	11.99	0.92	47.49	51.12	18.80	92.80

Note. *N* = 170; Min. = Minimum; Max = Maximum; *SRS* = Self-Regulatory Strategy.

The dependent variables in the MANOVA analysis were SRL Strategy Use and Academic Writing Self-Efficacy. SRL Strategy Use consisted of nine levels—Understand Essay Requirements, Reduce Task Difficulty, Increase Motivation to Write, Monitor Writing, Adjust Environment, Increase Motivation to Continue Writing, Solve Problems, Assess Writing, and Time Management, while Academic Writing Self-Efficacy consisted of four levels: Writing Self-Efficacy, Grammar Self-Efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy. The independent variable included four levels of Writing Achievement: Excellent, Good, Fair, and Poor.

Table 90 summarizes the results of the multivariate tests. Statistical significance was found with respect to the effect of Writing Achievement on the collective set of SRL Strategy Use and Academic Writing Self-Efficacy dependent variables: Wilks' $\lambda = .701$, $F(39, 456.775) = 1.495$, $p = .031$, partial $\eta^2 = .112$, and power = .942. This result indicates that the effect of Writing Achievement was statistically significant in relation to the nine levels associated with the dependent variable SRL Strategy Use and to the four levels associated with the variable Academic Writing Self-Efficacy.

Table 90. *MANOVA Results for Writing Achievement, SRL Strategy Use, and Academic Writing Self-Efficacy*

Effect	Value	*F*	Hyp. *df*	Error *df*	Partial η^2	Power	*p*
Intercept	.997	3660.448**	13.00	154.00	.997	1.000	.000
Achievement	.701	1.495	39.00	456.775	.112	.947	.031

Note. Intercept = Wilks' Lambda; Hyp. *df* = hypothesized *df*; WAchievement = Writing Achievement

ANOVAs were conducted as follow-up tests to the MANOVA. In order to avoid Type 1 Error, each ANOVA was tested at the .004 level using the Bonferroni method

(.05/13 dependent variables). The ANOVA on Writing Self-Efficacy, $F(3,166) = 4.591$, $p = .004$ and the ANOVA on Grammar Self-Efficacy, $F(3, 166) = 4.583$, $p = .004$ were statistically significant, while the ANOVAs on the remaining dependent variables were not statistically significant (See Table 91). This result indicates that SRL strategy use does not exert a statistically significant influence on Writing Achievement, but two levels of Academic Writing Self-Efficacy do have a significant effect.

Post hoc analyses to the univariate ANOVAs for Writing Self-Efficacy and Grammar Self-Efficacy consisted of conducting pairwise comparisons to find which factor level affected Writing Achievement most strongly. Levene's test for the homogeneity of variance was not significant for all the cases, indicating that the assumption of equality of variances was met. However, as the sample sizes were different, Gabriel's test was selected to conduct Post hoc tests (Field, 2005). To avoid Type 1 error, the Bonferroni adjustment was conducted and each comparison was tested at the $p = .001$ level (.004/4). The results yielded statistically significant differences for Writing Self-Efficacy, but not for Grammar Self-Efficacy. In relation to Writing Self-Efficacy, statistically significant differences were found between the Excellent achievement group and the Poor achievement group. The Excellent achievement group mean scores were statistically significantly higher ($M = 52.52$, $SD = 9.57$) than the mean scores for the Poor achievement group ($M = 45.19$, $SD = 11.18$).

Table 91. *Univariate Tests Results for Nine Levels of SRL Strategy Use and Four Levels of Academic Writing Self-Efficacy and Writing Achievement*

Source	*df*	*SS*	*MS*	*F*	Part. η^2	Power	Sig.
Understand Essay Requirements							
Contrast	3	167.358	55.786	3.325	.057	.749	.021
Error	166	2785.368	16.779				
Reduce Task Difficulty							
Contrast	3	52.380	17.460	1.089	.019	.291	.355
Error	166	2660.904	16.030				
Increase Motivation to Write							
Contrast	3	631.285	210.428	3.107	.053	.717	.028
Error	166	11241.395	67.719				
Monitor Writing							
Contrast	3	128.312	42.771	.979	.017	.264	.404
Error	166	7249.839	43.674				
Adjust Environment							
Contrast	3	167.254	55.751	2.794	.048	.665	.042
Error	166	3312.670	19.956				
Increase Motivation to Continue Writing							
Contrast	3	95.838	31.946	1.216	.022	.322	.305
Error	166	4359.731	26.263				
Solve Problems							
Contrast	3	27.283	9.094	.835	.015	.229	.477
Error	166	1808.842	10.897				
Assess Writing							
Contrast	3	51.568	17.189	.745	.013	.207	.527
Error	166	3829.667	23.070				
Time Management							
Contrast	3	13.343	4.448	.289	.005	.105	.833
Error	166	2556.086	15.398				
Writing Self-Efficacy							
Contrast	3	1379.177	459.726	4.591*	.077	.883	.004
Error	166	16623.003	100.139				
Grammar Self-Efficacy							
Contrast	3	1204.863	401.621	4.583*	.076	.882	.004
Error	166	14545.487	87.623				
Self-Assessment Self-Efficacy							
Contrast	3	431.867	143.956	1.641	.029	.425	.182
Error	166	14565.413	87.743				
Revision Self-Efficacy							
Contrast	3	1672.530	557.510	4.089	.069	.840	.008
Error	166	22633.237	136.345				

Note. **p* < .004.

Summary of Results for Research Question 3

A one-way MANOVA with four levels of Writing Achievement, as the independent variable, nine levels of SRL Strategy Use and four levels of Academic Writing Self-efficacy, as the dependent variables, was conducted to assess whether statistically significant differences existed between the participants' level of writing achievement as a result of their reported use of SRL strategies and Academic Writing Self-Efficacy beliefs. Although the MANOVA indicated statistically significant differences on the collective set of dependent variables, the ANOVA tests at the alpha level of .004 after the Bonferroni Adjustment (.05/13) did not yield statistically significant differences for the different levels of SRL Strategy Use. Statistically significant results were only found for two of the levels associated with Academic Writing Self-Efficacy: Writing Self-Efficacy and Grammar Self-Efficacy. However, the follow up Post hoc tests assessed at the alpha level of .001 after the Bonferroni Adjustment (.004/4) indicated statistically significant differences only between the Excellent and the Poor achievement groups with regards to Writing Self-Efficacy. Statistically significant differences were not found for with regards to the effect of Grammar Self-Efficacy.

Research Question 4 Results: The Influence of Writing Experience on Self-Regulated Learning Strategy Use and Academic Writing Self-Efficacy

In this section, I describe the results of a one-way MANOVA conducted to examine the fourth research question concerning the extent to which the participants' reported use of SRL strategies and Academic Writing Self-Efficacy beliefs differed as a result of the participants' writing experience, as measured by the number of times the participants reported having taken writing courses. Based on findings from the literature, it was hypothesized that students with more writing experience will report more use of SRL strategies (e.g., Sasaki and Hirose, 1996; Zimmerman & Martinez-Pons, 1986; Wolters, 1999) and higher self-efficacy beliefs (e.g., Shell et al., 1995), than students with less writing experience.

To examine research question 4 related to the influence of Writing Experience on SRL Strategy Use and Academic Writing Self-Efficacy, a one-way MANOVA was conducted after confirming that the following assumptions were met: normal distribution of the dependent variable, homogeneity of variance between the groups, cases representing random samples of the population, and independence of scores (Field, 2005, pp. 359-360). No violations of these assumptions were found in the data.

The dependent variables were SRL Strategy Use and Academic Writing Self-Efficacy. SRL Strategy Use consisted of nine levels—Understand Essay Requirements, Reduce Task Difficulty, Increase Motivation to Write, Monitor Writing, Adjust Environment, Increase Motivation to Continue Writing, Solve Problems, Assess Writing, and Time Management, while Academic Writing Self-Efficacy consisted of four levels: Writing Self-Efficacy, Grammar Self-Efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy. The independent variable was four groups that were formed based on the number of writing courses students reported taking: No experience, Little experience, Some experience, Much experience. The descriptive statistics for each group on all 13 dependent variables are displayed in Table 92. As shown, the mean differences between the dependent variables on the basis of writing proficiency were generally small.

Table 92. *Descriptive Statistics for Writing Experience, SRL Strategy Use, and Academic Writing Self-Efficacy*

					95% IC			
Measure	*N*	*M*	*SD*	*SE*	LL	UL	Min.	Max.
Understand Requirements								
No experience	45	51.41	4.72	0.70	49.99	52.83	41.50	65.30
Little experience	67	52.27	4.06	0.50	51.28	53.26	42.50	65.30
Some experience	27	53.57	3.38	0.65	52.24	54.91	45.60	59.40
Much experience	31	53.75	3.89	0.70	52.32	55.17	46.70	60.90
Total	170	52.52	4.18	0.32	51.89	53.15	41.50	65.30
Reduce Task Difficulty								
No experience	45	52.11	3.96	0.59	50.92	53.30	45.80	66.30
Little experience	67	53.67	3.95	0.48	52.71	54.63	45.80	66.30
Some experience	27	52.56	3.77	0.73	51.07	54.06	45.00	61.30
Much experience	31	53.49	4.26	0.76	51.93	55.05	45.00	61.30
Total	170	53.05	4.01	0.31	52.44	53.65	45.00	66.30
Increase Motivation to Write								
No experience	45	54.74	7.72	1.15	52.42	57.06	32.30	68.50
Little experience	67	58.17	7.94	0.97	56.24	60.11	40.60	68.50
Some experience	27	56.19	8.47	2.01	52.05	60.33	32.30	68.50
Much experience	31	58.91	7.73	1.39	56.07	61.74	44.00	68.50
Total	170	57.08	8.38	0.64	55.81	58.35	32.30	68.50
Monitor Writing								
No experience	45	57.56	6.94	1.03	55.48	59.65	41.00	71.10
Little experience	67	58.27	6.95	0.85	56.58	59.97	45.30	71.10
Some experience	27	58.63	6.88	1.32	55.91	61.35	45.30	71.10
Much experience	31	56.54	5.03	0.90	54.69	58.38	44.80	65.60
Total	170	57.82	6.61	0.51	54.69	58.82	41.00	71.10
Adjust Environment								
No experience	45	53.45	4.86	0.72	51.99	54.91	42.70	64.30
Little experience	67	52.93	3.98	0.49	51.96	53.90	35.60	64.30
Some experience	27	54.34	4.76	0.92	52.46	56.22	44.70	64.30
Much experience	31	53.26	5.06	0.91	51.41	55.12	39.90	64.30
Total	170	53.35	4.54	0.35	52.67	54.04	35.60	64.30
Increase Motivation to Continue Writing								
No experience	45	53.49	5.01	0.75	51.99	55.00	41.60	65.90
Little experience	67	54.77	5.33	0.65	53.47	55.00	45.00	65.90
Some experience	27	54.34	5.94	1.14	51.99	56.69	45.00	65.90
Much experience	31	54.82	4.13	0.74	53.30	56.33	47.10	65.90
Total	170	54.37	5.13	0.39	53.59	55.15	41.60	65.90

(Table 92 Continues)

(Table 92 Continued)

Measure	*N*	*M*	*SD*	*SE*	95% IC LL	UL	Min.	Max.
Solve Problems								
No experience	45	48.32	4.52	0.67	46.96	49.68	33.60	64.70
Little experience	67	49.32	2.69	0.33	48.67	49.98	43.70	55.70
Some experience	27	49.69	2.58	0.50	50.71	50.71	43.70	57.40
Much experience	31	49.51	2.82	0.51	50.54	50.54	43.70	54.50
Total	170	49.15	3.30	0.25	49.65	49.65	33.60	64.70
Assess Writing								
No experience	45	51.64	5.49	0.82	49.99	53.29	41.60	67.90
Little experience	67	51.69	4.89	0.60	50.50	52.88	41.60	67.90
Some experience	27	51.52	4.67	0.90	49.67	53.37	46.20	67.90
Much experience	31	51.65	3.69	0.66	50.30	53.01	42.90	59.90
Total	170	51.64	4.79	0.37	50.92	52.37	41.60	67.90
Time Management								
No experience	45	50.21	4.38	0.65	48.90	51.53	37.30	63.40
Little experience	67	50.89	3.77	0.46	49.97	51.80	37.30	63.40
Some experience	27	49.29	3.55	0.68	47.89	50.70	37.30	55.20
Much experience	31	49.92	3.68	0.66	48.57	51.26	37.30	55.20
Total	170	50.28	3.90	0.30	49.69	50.87	37.30	63.40
Writing Self-Efficacy								
No experience	45	50.84	10.49	1.56	47.69	53.99	23.10	70.50
Little experience	67	51.55	9.04	1.10	49.35	53.76	29.70	59.90
Some experience	27	42.30	9.28	1.79	38.63	45.97	23.10	63.80
Much experience	31	46.15	10.76	1.93	42.20	50.10	23.10	71.40
Total	170	48.91	10.32	0.79	47.34	50.47	10.20	71.40
Grammar Self-Efficacy								
No experience	45	52.51	9.63	1.44	49.62	55.40	30.60	79.80
Little experience	67	52.44	8.54	1.04	50.36	54.53	30.60	71.50
Some experience	27	45.50	11.65	2.24	40.89	50.10	18.50	65.40
Much experience	31	59.05	8.49	1.53	45.94	52.17	30.60	64.00
Total	170	50.74	9.65	0.74	49.28	52.20	18.50	79.80
Self-Assessment Self-Efficacy								
No experience	45	52.25	9.76	1.45	49.32	55.19	18.90	66.90
Little experience	67	52.15	7.76	0.95	50.26	54.05	30.40	65.70
Some experience	27	43.55	9.25	1.78	39.89	47.21	24.60	56.70
Much experience	31	47.23	9.49	1.70	43.75	50.71	15.30	63.30
Total	170	49.92	9.42	0.72	48.49	51.34	15.30	66.90
No experience	45	51.53	11.28	1.68	48.14	54.92	26.00	73.50
Revision Self-Efficacy								
No Experience	45	51.53	11.28	1.68	48.14	54.92	26.00	73.50
Little experience	67	52.09	11.78	1.44	49.22	54.97	26.00	92.80
Some experience	27	42.30	12.00	2.31	37.55	47.04	14.50	75.30
Much experience	31	56.15	10.68	1.92	42.23	50.06	8.80	62.70
Total	170	59.30	11.99	0.92	47.49	51.12	8.80	92.80

Note. *N* = 170; *M* = Mean; SD = Standard Deviation; SE = Standard Error; 90% IC = 90% Confidence Interval; Min. = Minimum; Max = Maximum

Table 93 summarizes the results of the multivariate tests. Statistical significance was found with respect to the effect of Writing Experience on the collective set of SRL Strategy Use and Academic Writing Self-Efficacy dependent variables: Wilks' λ = .676,

$F(39, 456.775) = 1.658$, $p = .009$, partial $\eta^2 = .112$, and power = .974. This result indicates that the effect of Writing Experience was statistically significant in relation to the nine levels associated with the dependent variable SRL Strategy Use and to the four levels associated with the variable Academic Writing Self-Efficacy.

Table 93. *MANOVA Results for Writing Experience, SRL Strategy Use, and Academic Writing Self-Efficacy*

Effect	Value	*F*	Hyp. *df*	Error *df*	Partial η^2	Power	*p*
Intercept	.998	4932.253**	13.00	154.00	.998	1.000	.000
WExperience	.676	1.658	39.00	456.775	.112	.947	.009

Note. Intercept = Wilks' Lambda; Hyp. *df* = hypothesized *df*; WExperience = Writing Experience

Analyses of variance (ANOVA) on the dependent variables were conducted as follow-up tests to the MANOVA. In order to avoid Type 1 Error, each ANOVA was tested at the .004 level using the Bonferroni method (.05/13 dependent variables). The ANOVA on Writing Self-Efficacy, $F(3,166) = 7.113$, $p = .000$, the ANOVA on Self-Assessment Self-Efficacy, $F(3, 166) = 8.027$, $p = .000$, and the ANOVA on Revision Self-Efficacy, $F(3,166) = 6.006$, $p = .001$ were statistically significant, while the ANOVAs on the remaining dependent variables were not statistically significant (See Table 94).

Post hoc analyses to the univariate ANOVAs for Writing Self-Efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy consisted of conducting pairwise comparisons to find which factor level affected Writing Experience most strongly. Levene's test for the homogeneity of variance was not significant for the three cases, indicating that the assumption of equality of variances was met. However, as the sample sizes were different, Gabriel's test was selected to conduct Post hoc tests (Field, 2009). To avoid Type 1 error, the Bonferroni adjustment was conducted and each comparison was tested at the p = .001 level (.004/4). In relation to Writing Self-Efficacy, statistically significant differences were found between the groups with No Experience, Little Experience, and Some Experience. The mean for the group with Little Experience (M = 52.51, SD = 9.04) was statistically significantly higher than the mean for the No Experience group (M = 50.84, SD = 10.49), and the mean for the Some Experience group (M = 42.30, SD = 9.28). The same pattern was found with respect to the outcomes of Self-Assessment Self-Efficacy, where the mean for the No Experience group was statistically significantly higher (M = 52.26, SE = 1.32) than the mean for the Little Experience group (M = 52.15, SD = 9.76) and the mean for the Some Experience group (M = 43.55, SD = 7.76). Finally, for Revision Self-Efficacy, statistically significant differences were found between the groups with Little Experience and Some Experience. The mean for the Little Experience group was statistically significantly higher (M = 52.09, SD = 11.78) than the mean for the Some Experience group (M = 42.30, SD = 12.00).

The results associated with this analysis indicate that when it comes to Academic Writing Self-Efficacy, the participants who take the course for the first time report having more confidence in their Writing and Self-Assessment Self-Efficacy than participants who have previously taken one or two courses. On the other hand, participants who have taken two courses reported being less confident in their skills than participants who have taken only one course. At the same time, participants who

Table 94. *Univariate Tests Results for Writing Experience, SRL Strategy Use, and Academic Writing Self-Efficacy*

Source	*df*	*SS*	*MS*	*F*	Partial η^2	Power	*p*
Understand Requirements							
Contrast	3	136.292	45.431	2.678	.049	.645	.049
Error	166	2816.434	16.966				
Reduce Task Difficulty							
Contrast	3	78.190	26.063	1.642	.029	.425	.182
Error	166	2635.094	15.874				
Increase Motivation to Write							
Contrast	3	450.919	150.306	2.185	.038	.548	.092
Error	166	11421.761	68.806				
Monitor Writing							
Contrast	3	85.289	28.430	.647	.012	.184	.586
Error	166	7292.862	43.933				
Adjust Environment							
Contrast	3	39.099	13.033	.629	.011	.180	.597
Error	166	3440.825	20.728				
Increase Motivation to Continue Writing							
Contrast	3	51.697	17.232	.650	.012	.185	.584
Error	166	4403.872	26.529				
Solve Problems							
Contrast	3	45.152	15.051	1.395	.025	.366	.246
Error	166	1790.973	10.789				
Assess Writing							
Contrast	3	.533	.178	.008	.000	.051	.999
Error	166	3880.703	23.378				
Time management							
Contrast	3	55.279	18.426	1.217	.022	.322	.305
Error	166	2514.150	15.145				
Writing Self-Efficacy							
Contrast	3	2050.569	683.523	7.113*	.114	.980	.000
Error	166	15951.611	96.094				
Grammar Self-Efficacy							
Contrast	3	1166.313	388.771	4.425	.074	.087	.005
Error	166	14584.037	87.856				
Self-Assessment Self-Efficacy							
Contrast	3	1899.990	633.330	8.027*	.127	.990	.000
Error	166	13097.290	78.899				
Revision Self-Efficacy							
Contrast	3	2379.874	793.291	6.006*	.098	.955	.001
Error	166	21925.893	132.084				

Note. **p* < .004; df = degrees of freedom; SS = Sum of Squares; MS = Mean Square; Sig = Significance

had reported taking only one course had higher self-efficacy beliefs on revision skills than those who had taken two courses. This is an interesting and unexpected finding as the literature in self-efficacy research indicates that the more experience the learners have with writing, the more confidence they exhibit in their skills. Possible explanations for the results are discussed in the following chapter.

Summary of Results for Research Question 4

In this section, I described the results of a one-way MANOVA with four levels of Writing Experience, as the independent variable, nine levels of SRL Strategy Use and four levels of Academic Writing Self-efficacy, as the dependent variables, conducted to assess whether statistically significant differences existed between the participants' level of reported use of SRL strategies and Academic Writing Self-Efficacy beliefs and their experience taking writing classes. Although the MANOVA indicated statistically significant differences on the collective set of dependent variables, the ANOVA tests at the alpha level of .004 after the Bonferroni Adjustment (.05/13) did not yield statistically significant differences for the different levels of SRL Strategy Use. Statistically significant results were only found for three of the levels associated with Academic Writing Self-Efficacy: Writing Self-Efficacy, Self-Assessment Self-Efficacy and Revision Self-Efficacy. The follow up Post hoc tests assessed at the alpha level of .001 after the Bonferroni Adjustment (.004/4) indicated statistically significant differences for all the three levels of Academic Writing self-efficacy. The general pattern found was that participants with less experience in writing had higher levels of self-efficacy than the participants with less experience with writing.

Chapter 5 Summary

In this chapter I have described the results for the four research questions that motivated the present study. The first question concerned how well a hypothesized model of the interaction between five variables and writing achievement was representative of the sample in the study. The model had adequate fit to the data and, with the exception of the paths for three measured variables, all the paths between the variables were statistically significant. The second research question examined gender differences the hypothesized model. The results indicated that the model for females had better fit statistics than the model for males. The paths from Academic Writing Self-Efficacy to Grade and from TOEFL to SRL Strategy Use were significant for females, but not for males. The third research question examined differences in the participants writing achievement and their use of self-regulatory strategies as well as their efficacy for academic writing through a MANOVA analysis. The results did not yield statistically significant differences for any of the dependent variables. Finally, a MANOVA analyses was also used to address research question four, and examine differences between the participants' use of self-regulatory skills, their level of self-efficacy in academic writing, and their experience with academic writing. The results yielded statistically significant differences for three levels of self-efficacy for academic writing (Writing Self-Efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy), but no statistically significant differences were found for the use of SRL strategies. I discuss the results of the current study in connection with the literature on first- and second-language writing research, interpret the results, and provide possible explanations in the next chapter.

CHAPTER 6

DISCUSSION

The purposes of the current study were to: (a) test a hypothesized model of the relationship between proficiency variables, motivational variables, self-regulated learning variables, and writing achievement, as assessed by essay scores, in the context of non-native English speakers enrolled in first-year writing classes, (b) examine gender differences in the hypothesized model (c) investigate the impact of self-efficacy for academic writing and the use of self-regulatory strategies by students with different levels of writing achievement; and (d) examine the influence of writing experience on self-efficacy for academic writing and the participants' use of SRL strategies.

In this chapter, I first summarize the results for each of the research questions, interpret them, and link them to existing findings in self-regulated learning research on writing and second-language writing. Subsequently, I discuss the theoretical and pedagogical implications of the findings.

Research Question 1: Relationships in the Hypothesized Model of L2 First-Year Writing Achievement

Research Question 1 asked to what extent students' English Proficiency level, Writing Attitude, Academic Writing Self-Efficacy beliefs, Goal Orientation, and SRL Strategy Use influenced each other and the students' writing achievement, as assessed by their Essay Scores in their last essay. This question was addressed in the final stage of the analyses and five hypotheses regarding the interrelationship between these variables, and derived from research in educational psychology and research in first- and second-language writing, were tested using structural equation modeling. The final model met most of the criteria for adequate fit. The model chi-square for the full latent variable was significant with χ^2 (136) = 1598.423 (p < .01). However, since the model Chi-square is believed to be sensitive to small sample sizes (Tanaka, 1993), the small sample size in the present study may have affected this result. The χ^2/df ratio, considered to be a more reliable indicator of fit (Hu & Bentler, 1998) met the criterion with a value of less than 2: χ^2/df ratio = 1.8 and indicated adequate fit. In addition, the majority of the fit indices were in excess of .90 (Hu & Bentler, 1999), also indicating adequate fit: CFI = .934, IFI = .932, and 90% CI = .063-.092. The RMSEA statistic of .071 was slightly higher than the recommended criteria for adequate fit, but because RMSEA is sensitive to sample size (Byrne, 2006), it was considered reasonable to assume that the statistic for the RMSEA index was affected by the sample size.

Based on these results, it can be concluded that the hypothesized model of L2 University First-year Writing Achievement fit the data well, and, therefore, the hypothesized model can be considered representative of the population that was examined in the present study. The results, however, did not yield statistically significant paths for all the hypothesized relationships confirming only some of the hypothesized relationships, but not others. I discuss and interpret the results for the each of the hypothesized relationships between the variables hereafter.

Hypothesis 1: The Impact of English Language Proficiency on Writing Attitude, Self-Regulated Learning Strategy Use, and Essay Grade

The first hypothesis concerned the impact of English proficiency, as measured by TOEFL iBT, on Writing Attitude, SRL Strategy Use, Essay Grade. It was hypothesized that English language proficiency as measured by the TOEFL iBT had a positive impact on all three variables. The results indicated a statistically significant negative relationship between English Proficiency and SRL Strategy Use, a statistically significant positive path from English Proficiency to Essay Grade, but a non-significant path from English Proficiency to Writing Attitude. The significant path between English Proficiency and Essay Grade confirms findings in second-language writing research in which English proficiency was found to significantly explain the composition scores of Japanese university students (Hirose & Sasaki, 1996) and Ethiopian high school students (Yigzaw, 2013). The negative influence of English Proficiency on SRL Strategy Use suggests that learners with higher English proficiency levels are less likely to use SRL strategies, while learners with lower proficiency levels are more likely to rely on them. This result mirrors findings in early research on second-language writing and L2 proficiency, which reported a distinct contribution of L2 proficiency to the use of strategies such as planning and revising (Cumming, 1989). However, as discussed in Chapter 2, to my knowledge, no prior second-language writing researchers have investigated this relationship from the perspective of self-regulated learning; thus the result highlights a possibly important contribution of the present study to second-language research in writing. Finally, the non-significant path from English Proficiency to Writing Attitude can be explained by the nature of the TOEFL iBT test itself. As the TOEFL iBT test measures English proficiency in four different skills, it is more likely to influence overall attitude towards learning English as a second-language than attitudes towards a specific skill, such as writing.

Hypothesis 2: The Impact of Writing Attitude on Self-Regulated Learning Strategy Use and Its Indirect Impact on Essay Grade

Hypothesis 2 postulated a positive relationship between Writing Attitude and SRL Strategy Use and an indirect impact of Writing Attitude on Essay Grade through SRL strategy use. The results only partially confirmed the hypothesized relationships. Writing Attitude had a significant positive influence on SRL Strategy Use, highlighting the possibility that students who display positive attitudes toward writing are more likely to engage in SRL strategy use than those with negative attitudes. This result lends support to findings in first-language writing research that have reported a positive relationship between these two variables (Hammann, 2005; Graham et al., 2007; Pintrich & De Groot, 1990; Wolters & Pintrich, 1998). However, because SRL Strategy Use did not have a significant influence on Essay Grade, the hypothesized indirect influence of Writing Attitude on Essay Grade through SRL Strategy Use was not confirmed. This result contravenes findings in second-language writing that have reported an indirect link between attitudes towards writing and writing achievement (Hashermian & Heidari, 2013). The difference in results might be due to the fact that attitudes are often conceptualized in different ways across different fields (Petric, 2002).

Hypothesis 3: The Impact of Academic Writing Self-Efficacy Essay Grade, Writing Attitude, Mastery Goal Orientation and Self-Regulated Learning Strategy Use

The direct influence of Academic Writing Self-Efficacy on Essay Grade, or its indirect influence through Writing Attitude, Mastery Goal Orientation, and SRL Strategy Use was the focus of this hypothesis. The results yielded a significant positive path from Academic Writing-Self Efficacy and Essay Grade, suggesting that students with higher levels of self-efficacy beliefs achieve better essay grades. This result corroborates previous findings in first-language writing research (Pajares & Valiante, 1997; Prat-Sala & Redford, 2012; Zimmerman & Bandura, 1994) and second-language writing research with Chinese students (Woodrow, 2011), with Cambodian students (Chea & Shumow, 2014), and Thai students (Hetthong & Theo, 2013), which have reported a direct positive relationship between writing self-efficacy beliefs and writing achievement. For example, Woodrow (2011) found that self-efficacy predicted 43% of the variance on the writing performance of Chinese students; thus, it is reasonable to conclude that the statistically significant relationship between Academic Writing Self-Efficacy and Essay Grades found in the current study contributes to further confirming the applicability of the construct of academic writing self-efficacy to second-language writing achievement.

In addition, the results also indicated a positive influence of Academic Writing Self-Efficacy on Writing Attitude. In his review of the literature on writing self-efficacy, Pajares (2003) asserted that the effects of attitudes towards writing were often nullified when self-efficacy variables were included in regression models of writing achievement. In fact, Pajares and Valiante (1999) reported that self-efficacy beliefs were a much stronger predictor than attitudes towards writing. However, the results in the present study indicate that writing self-efficacy beliefs can positively influence attitudes towards writing. The positive significant path between these two variables suggests that students with higher level of academic writing self-efficacy have more positive attitudes toward writing than those with lower efficacy beliefs. This result supports findings of more recent studies in first-language writing (Pajares et al., 2007) and second-language writing with Iranian students (Rezaei & Rassaei, 2015) that have reported a positive relationship between writing self-efficacy and writing attitudes. However, as Rezaei and Rassaei appears to be the only study linking self-efficacy beliefs to attitudes in the domain of L2 writing, it can be assumed that this is a significant finding of the present study, as this relationship has received little attention in second-language writing research. In the field of educational psychology, Bandura (1986) has asserted that self-efficacy beliefs not only determine learning outcomes, but also the value that people place on tasks and activities. Therefore, this result supports the principles of Bandura's socio-cognitive theory of learning, which posits that self-efficacy is one of the most influential factors for learning.

However, the results yielded a non-statistically significant path for the impact of Academic Writing Self-Efficacy on SRL Strategy Use. This result was unexpected due to the fact that several first-language writing researchers have found that writing self-efficacy predicts the use of self-regulatory strategies (Pintrich, 2004; Zimmerman &

Bandura, 1994; Zimmerman & Martinez-Pons, 1990). A positive relationship between writing self-efficacy and the use of SRL strategies was also reported in the context of L2 Chinese university students by (Zhao &Dong, 2011). However, considering that an attitudinal variable was not included in these studies, and the fact that the results for the current study yielded a strong statistically significant relationship between Academic Writing Self-Efficacy and Writing Attitude, it is reasonable to conclude that in the absence of attitudinal variables self-efficacy might have a direct impact on SRL Strategy Use, but in the presence of attitudinal variables, writing self-efficacy has an indirect influence on SRL Strategy Use through its influence on attitude. Therefore, this result highlights the need for more research investigating the relationship between these variables.

It was also unexpected to find that Academic Writing Self-Efficacy did not have a direct impact on Mastery goal orientation especially because, as discussed in Chapter 2, studies in educational psychology and academic achievement (e.g., Pintrich, 2000a, 2000b), first-language writing research (Pajares, Britner, & Valiante, 2000; Zimmerman & Bandura, 1994), and second-language writing research (Kaplan, Lichtinger, & Gorodetsky, 2009; Zhao & Dong, 2011) have reported direct relationships between self-efficacy and mastery goal orientation. In addition, this relationship has been greatly emphasized in the models of Self-Regulated Learning proposed by Pintrich (2004) and Zimmerman and Kitsantas (2007). A possible explanation for this unexpected result might be related to the nature of the writing courses in this particular context. As mentioned in Chapter 2, in the context of the current study, the writing courses are prerequisites for upper level courses. Only students who have credits for first-year writing courses are allowed to enroll in courses related to their major. Thus, it is possible that, in this particular context, students' desire to pass the course and earn the credits required to enroll in upper courses might be more prevalent than their desire to learn writing skills, in which case, confidence in their writing skills might play a minor role in helping them achieve their goals.

Hypothesis 4: The Impact of Mastery Goal Orientation on Self-Regulated Learning Strategy Use

Hypothesis 4 concerned the positive impact of Mastery Goal Orientation on SRL Strategy Use, and through it, its indirect impact on Essay Grade. Initially goal orientation was hypothesized to consist of mastery goal orientation and approach-avoidance goal orientation, but as the path from approach-avoidance goal orientation was not significant, it was deleted leaving only mastery goal orientation. In relation to the direct impact of Mastery Goal Orientation on SRL Strategy Use, the results only confirmed a small but statistically significant influence of Mastery Goal Orientation on SRL Strategy Use. This finding suggests that students who are more interested in improving their writing skills, or are driven by a desire to master writing skills, are more likely to use SRL writing skills. This result is in line with findings in first-language writing (Tadlock, 2016) and second-language writing (Farsani et al., 2014; Kaplan et al., 2009) that have reported a positive relationship between mastery goal orientation and the use of SRL strategies, but, as explained in the previous section, it does not confirm previous findings on the relationship between goal orientation and self-efficacy.

Hypothesis 5: The Impact of Self-Regulated Learning Strategy Use on Essay Grade

Hypothesis 5 postulated that SRL Strategy Use mediated the impact of other variables on Essay Grade, or had direct impact on Essay Grade. The results did not confirm the hypothesis and yielded a non-significant path from SRL Strategy Use to Essay Grade. This was an unexpected result. The models of Self-Regulated Learning proposed by Pintrich (2004) for academic achievement, and Zimmerman and Kitsantas (2007) for writing achievement, both emphasize self-regulatory strategies are mediators and predictors of academic and writing achievement. Zimmerman and Martinez-Pons (1986) and Wolters (1998, 1999) reported a strong relationship between SRL strategy use and achievement in math and psychology courses, respectively. This relationship has also been confirmed in first-language writing research (Pajares et al., 2000) and second-language writing research (Mehrabi et al., 2016, Zhao & Dong, 2011).

Several possible explanations can be offered to interpret the unexpected results. First, this might be due in part to the nature of the questionnaire, or to the fact that composite scores were used for the strategy use variables. As discussed above, the self-regulatory strategies in the questionnaire were not grouped by type of strategy, but by situation. For example, question 2 asked students to indicate what strategies they had used to reduce the difficulty of the task, and options included seeking help, managing time, scheduling writing at appropriate times, and planning. In most of the studies mentioned above, Self-regulatory strategies were classified by type, such *interest enhancement, performance self-talk* (Zimmerman & Martinez-Pons, 1986), *environmental control, self-consequating*—the term used by Wolters (1999) to refer to strategies that include establishing consequences, punishments, or rewards for different aspects of learning—*and task enhancement* (Wolters, 1998, 1999), *performance talk, Interest enhancing and self-consequating* (Zhao & Dong, 2011) allowing for the assessment of more strictly unidimensional constructs. Second, as Byrne (2006) pointed out, it is also possible that the lack of statistical significance might be due to the small sample size as the *N*-size for the study was only 170, when a more desirable *N*-size for the hypothesized model in the current study would be larger than 200. A third possible explanation is related to the way in which the first-order measured variables were conceptualized in the final model. As shown in Figure 30, in Chapter 5, the self-regulatory strategies were grouped into three second-order latent variables: Monitor Task, Monitor Motivation, and Monitor Writing. During the initial examination of the model, the Lagrange Multiplier Test, which lists parameters that can be added to the model to improve goodness-of-fit indices, suggested adding a parameter from the latent variable Regulate Task to Assessing Writing. When this parameter was added, the results yielded a statistically significant path from SRL Strategy Use to Grade (β = -.19, $p < .05$). This modification was not applied to the final model, as it resulted in other parameters exhibiting unreasonable correlation estimates (> 1.0), but it lends support to the possibility that the grouping of self-regulatory strategies might be the reason for this unexpected finding. Taking this into consideration, it is reasonable to conclude that SRL Strategy Use is an influential variable in writing achievement, but statistical significance was not achieved in the current model due to the way in which the use of SRL strategies was assessed and the way in which they were grouped in the model. This, in turn, suggests the need for further investigation of this latent variable.

In summary, while the goodness-of-fit statistics indicated that the model had adequate fit to the data, four of the hypothesized paths—English Proficiency to Writing Attitude, Academic Writing Self-Efficacy to SRL Strategy Use, Academic Writing Self-Efficacy to Mastery Goal Orientation, and Self-Regulatory Strategy to Essay Grade—were not statistically significant. Possible reasons for the unexpected results include differences in conceptualization of measures of attitudinal beliefs, the presence or absence of attitudinal beliefs in models that include self-efficacy beliefs, and differences in the way self-regulatory strategies were assessed and conceptualized in the model hypothesized in the present study. All the remaining hypothesized paths—English Proficiency to Essay Grade and SRL Strategy Use, Writing Attitude to SRL Strategy Use, Academic Writing Self-Efficacy to Writing Attitude and Essay Grade, and Mastery Goal Orientation to SRL Strategy Use—were statistically significant and lend support to findings in self-regulated learning research as well as in first- and second-language research in writing. Considering that not all hypothesized relationships were confirmed, it is appropriate to conclude that the present hypothesized model is adequate as a starting point to investigate the relationship between proficiency, motivational, and self-regulated learning variables in second-language writing achievement, and that the results are indicative of the need to conduct further studies examining the relationship between these variables and academic writing achievement, ideally with a larger sample.

Research Question 2: Gender Differences in the Hypothesized Model of L2 First-Year Writing Achievement

The hypothesis for this research question postulated that gender would have an impact in all the variables included in the hypothesized Model of L2 First Year Writing Achievement. The results only partially supported this hypothesis. As mentioned in Chapter 5, in spite of the small *N*-size of 94 for the model for female participants, the model for female participants exhibited better fit to the data than the model for male participants, suggesting that the data were, overall, more representative of female than of male participants. However, a closer examination of the significance of specific paths between the two groups revealed that, with the exception of the paths from Academic Writing Self-Efficacy to Grade, and Writing Proficiency to SRL Strategy Use, the statistical significance of all other paths was identical for the two groups.

The paths from Academic Writing Self-Efficacy to Grade and from English Proficiency to SRL Strategy Use were significant for the female, but not for the male participants, indicating that female participants with higher English Proficiency scores are more likely to use SRL strategies than the male participants, and that female participants with higher levels of self-efficacy for academic writing are more likely to obtain better grades in their essays. These results support findings in educational psychology about the relationship between gender and the use of SRL strategies. For example, Zimmerman and Martinez-Pons (1990) found that elementary school girls use more record keeping and environmental structuring than boys, Pajares and Johnson (1996) found that the fifth grade girls in their study reported higher self-efficacy beliefs in writing than boys, and Ablard and Lipschultz (1998) found that middle school girls used more SRL strategies and reported more personal regulation and optimization of their environment than boys. In second-language research on writing Bozpolat (2016) also reported that gender was a statistically significant predictor of SRL use as they found that the female Turkish university students in their study reported more use of SRL strategies than the males. At the same time, the significant path from Writing Self-Efficacy to Essay Grade found in the current study is also in line with previous research findings in which girls have reported higher self-efficacy beliefs than boys (Pajares et al., 2007; Wang et al., 2013). Therefore, in spite of the small sample size for the male and female models in the present study, it can be concluded that the findings of the present study contribute to ascertain the impact of gender on the use of self-regulatory strategies and self-efficacy beliefs.

Research Question 3: The Influence of Self-Regulated Learning Strategy Use and Academic Writing Self-Efficacy on Writing Achievement

Research Question 3 asked to what extent SRL Strategy Use and Academic Writing Self-Efficacy differed across the participants' levels of writing achievement. In the present study, it was hypothesized that students with higher writing achievement, as measured by their essay grades, would report more use of SRL strategies as well as higher levels of Academic Writing Self-Efficacy than students' with lower writing achievement. A one-way MANOVA analysis and post hoc tests were conducted to investigate differences in each of the variables for four writing achievement groups: Excellent, Good, Fair, and Poor.

With regards to the use of SRL strategy use and writing achievement, the results did not confirm the hypothesis of higher use of SRL strategies by students with higher writing achievement, as statistically significant differences were not found for any of the levels of SRL Strategy Use. The results of the present study contradict findings reported in previous research. Zimmerman and Martinez-Pons (1986) found that high achieving students reported *seeking social assistance and reviewing* more than low-achieving students. Wolters (1998) also found that high achieving students reported using more *help seeking* strategies in psychology courses when they perceived the task to be difficult. In addition, in second-language writing research, Mehrabi et al. (2016) reported that Iranian university students' mean scores in writing tests were statistically significantly higher for the students who have reported more use of SRL strategies than for the students who have reported less use. A possible explanation for the contradicting results between the present study and existing research may be related to differences in the methodology and instruments used to assess the use of SRL strategies. Zimmerman and Martinez-Pons (1986), Wolters (1999) and Mehrabi et al. (2016) assessed SRL strategy use by type of strategy, while in the present study, SRL strategy use was assessed by asking the participants to report SRL strategy use in situations they encountered as they wrote their essays; therefore, there was more variation in the type of strategies included in each situation. This difference suggests that assessing SRL strategy use by type of SRL strategy rather than by situation may be considered a more reliable method of examining SRL strategy use as it allows for the assessment of more unidimensional constructs.

A second plausible explanation for the lack of statistically significant differences between the groups in the present study may be that high achievement students do not rely on SRL as much as they are assumed to do in models of SRL, as there are studies that have reported negative relationships between SRL strategy use and writing achievement. Farsani et al. (2014), for example, found a negative correlation between the reported use of SRL strategies by Iranian students and their scores in different types of essays, suggesting that students with higher scores use less SRL strategies while students with lower scores report more use of SRL strategies. If students with higher essay scores reported less use of SRL in the current study, then it would be possible to find that differences between the groups are not statistically significant. It is clear, however, that more research, perhaps adopting more reliable instruments to assess SRL strategy use, is necessary to better understand individual differences in writing achievement as determined by the use of SRL strategies.

With regards to individual differences between Writing Achievement and Academic Writing Self-Efficacy beliefs, the results lent partial support to the proposed hypothesis that participants with higher achievement would report higher levels of Academic Writing Self-Efficacy. The results yielded significant differences between Writing Achievement and Writing Self-Efficacy, but not between Writing Achievement and the other three levels of Academic Writing Self-Efficacy: Grammar Self-Efficacy, Self-Assessment Self-Efficacy and Revision Self-Efficacy. In relation to Writing Self-Efficacy higher levels of writing achievement were found for participants in the Excellent group and the Low achievement groups. As Writing Self-Efficacy in the current study assessed student's efficacy in their abilities to write thesis statements, topic sentences, concluding sentences, introductions, body paragraphs and conclusions, this result can be interpreted as indicating that students perform better in their essays when they exhibit higher levels of efficacy for writing different parts of an essay. It is also important to note that in the essay evaluation rubric used in the context of the present study, 45% of the essay grade (40% for organization and 5% for MLA) is awarded to the features described in the items subsumed under the construct of Writing Self-Efficacy, while only 20% is awarded for the grammatical features described by the items in the Grammar Self-Efficacy subscale, and only 5% for the features of self-assessment and revision described in the items that form the Self-Assessment and Revision Self-Efficacy subscales. The differences in the weights awarded to each area in the evaluation of essays may also explain why statistically significant differences were not found between Grammar Self-Efficacy, Self-Assessment Self-Efficacy and Revision Self-Efficacy. Although important, they carry less weight in comparison to Writing Self-Efficacy. Thus, it is plausible to conclude that statistically significant differences between the four groups were only found for Writing Self-Efficacy because the students ability to write good thesis statements, topic sentences, well-focused paragraphs, coherent paragraphs, good analysis of quotes and overall good essays of different kinds carry more weight in the assessment of essays than other skills associated with writing. Although this may not be the only possible interpretation, the results obtained in the present study support the notion that Academic Writing Self-Efficacy has an important role to play in how successful students are in their essays, as students with higher levels of self-efficacy perform better in their essays than students who are less efficacious.

In summary, while a small number of studies in first and second-language writing have reported individual differences in writing achievement as a result of SRL strategy use (Mehrabi et al., 2016; Wolters 1998, 1999; Zimmerman and Martinez-Pons, 1986), those findings were not corroborated by the present study due perhaps to differences in the methods used to assess SRL strategy use in the present study and to the possibility that high achieving students may not rely on SRL strategies as much as they are assumed to do in theoretical models of SRL.

In relation to individual differences in self-efficacy beliefs and writing achievement, the notion of self-efficacy as a strong predictor of academic achievement has been supported by the results of many studies in educational psychology and first-language writing (e.g., Bandura, 1991; Pajares & Valiante, 1997, 1999, 2001; Prat-Sala & Redford, 2012; Zimmerman, Bandura & Martinez-Pons, 1992), but only a handful of studies in second-language writing have examined individual differences in levels of achievement as a result of writing self-efficacy beliefs (Chea & Shumow, 2014; Hetthong & Teo, 2013; Woodrow, 2011) Thus, the differences in levels of Academic Writing Self-Efficacy and Writing Achievement found in this study not only corroborate previous findings, but also contribute to a better understanding of the role of Self-Efficacy in second-language writing achievement, and demonstrate that "academic writing self-efficacy has the predictive role that socio-cognitive theories of writing hypothesize" (Pajares & Valiante, 1997, p. 357).

Research Question 4: The Influence of Writing Experience on Self-Regulated Learning Strategy Use and Academic Writing Self-Efficacy

Research Question 4 asked to what extent academic writing self-efficacy beliefs and SRL strategy use differ in terms of students' experience taking writing courses. A one-way MANOVA analysis and post-hoc tests were conducted to explore differences between SRL strategy use and academic writing self-efficacy (the dependent variables), and four levels of experience taking writing courses: No experience, Little experience, Some Experience, and Much experience (the independent variables).

The analyses for SRL Strategy Use and Writing experience did not yield statistically significant differences between the four groups and the different levels of SRL Strategy Use, suggesting that experience taking academic writing courses does not impact students' use of self-regulatory strategies. This result was unexpected because second-language writing and self-regulated learning researchers have both reported differences in the amount of strategy use reported by novice and experienced writers. In second-language writing research, Sasaki and Hirose (1996) reported that the "good writers" in their study used more strategies to plan and revise their compositions than the "weak writers". Also, research on the composing processes of novice and experienced writers has reported that experienced writers engage in more planning and revising (Conrad & Goldstein, 1999; Ferris 1997, 2003; Glaser & Brunstein, 2007; Goldstein, 2004). Moreover, supporters of the socio-cognitive theory of learning and of self-regulated learning have emphasized how experienced writers differ from novice writers in their knowledge and reliance on a wider range of self-regulatory strategies (Graham & Harris, 2003; Zimmerman, 2000a; Zimmerman & Risemberg, 1997).

A possible explanation for the result is that assessing writing experience solely based on the number of courses students have taken is not enough to highlight differences in strategy use. Such an approach does not incorporate an assessment of the knowledge of the structure of academic essays or of the conventions of academic writing that students might have gained as a result of taking more writing courses. It is perhaps the knowledge of academic writing that students gain, or do not gain, after taking more than one or two writing courses that determines whether or not students rely on self-regulatory strategies, not just the number of courses, per se. This difference in the method used to assess writing experience might explain why Sasaki and Hirose (1996) found differences in the composing processes of novice and experienced writers. Thus, this result highlights the need for a less broad, but more specific approach to assessing the influence of writing experience on the use of self-regulatory strategies.

In relation to the impact of Writing Experience and Academic Writing Self-Efficacy beliefs, the result yielded significant, yet unexpected differences between the different levels of Writing Experience and but only three of the four levels of Academic Writing Self-Efficacy: Writing Self-Efficacy, Self-Assessment Self-Efficacy and

Revision Self-Efficacy. Statistically significant differences were not found for Grammar Self-Efficacy. This may be due to the fact the fact that in the teaching context of the present study, instructors use a process-approach to teach in all the classes. The process approach encourages writing of multiple drafts, self-assessment, and revision, but it does not involve the explicit teaching of grammar skills. Grammatical problems are only addressed as students revise their drafts. This characteristic of the process-approach used in this context may explain why statistically significant differences were not found between the four groups with different levels of experience and Grammar Self-Efficacy skills. As grammar is not explicitly taught in the courses, the students may not feel that their skills improve with their experience taking courses.

It is also important to note that an unexpected pattern of differences was found between the groups with regards to Writing Experience and its influence on Academic the three levels that yielded statistically significant results: Writing Self-Efficacy, Self-Assessment Self-Efficacy and Revision Self-Efficacy. In all three cases, the participants with less experience reported higher self-efficacy beliefs. In relation to Writing Self-Efficacy and Self-Assessment Self-Efficacy, the participants took the course for the first time (No experience), reported having higher levels of efficacy in their writing and self-assessment skills than participants who have previously taken one or two courses. On the other hand, students who have taken two courses (Some experience) reported lower levels of efficacy in their skills than participants who have taken only one course. In the case of Revision Self-Efficacy a similar pattern was observed, but in this case, the participants who had taken only one course (Little experience) reported higher self-efficacy beliefs than participants who had taken two courses (Some experience). This is an interesting and unexpected finding, yet it supports findings in research investigating the developmental nature of self-efficacy beliefs. In fact, Pajares (2003) asserts that the common pattern found in the development of self-efficacy beliefs is that self-efficacy beliefs decreased as learners grow older. He cites findings from Pajares and Valiante (1999), who found that students in the first year of middle school reported higher self-efficacy beliefs that older students in Grades 7 and 8. Pajares refers to this pattern as “a pattern of decreasing confidence” and explains that the obvious conclusion is that self-efficacy beliefs, or “confidence in writing skills is not nurtured as students’ progress through school, even in the face of the skills themselves being developed” (p.152). It is possible to interpret the results in light of this pattern of decreasing confidence.

In this particular context, a second possible explanation may be that it is not the number of courses that students take per se, but the experiences they have when taking those courses that affect their level self-efficacy beliefs. For example, some students might have failed a course on their first attempt and, as a result, feel less self-efficacious on their skills, while students who took the course for the first time, and had an overall positive experience in the course, might have higher levels of self-efficacy as a result of those positive experiences. A third possible explanation applicable to this context may be that students are naïve when they take their first writing course and report higher levels of self-efficacy beliefs, but once they gain experience with more courses, they begin to understand that they are not as skillful as they originally thought. As a matter of fact, Williams and Takaku (2011) support this interpretation and assert that students often tend to overestimate their self-efficacy beliefs. They support their assertion in reference to the study by Meier et al. (1984) who found that when the writing self-efficacy beliefs of college students in freshmen composition courses were assessed at the beginning of the semester, writing self-efficacy beliefs predicted their scores on the essays, but when self-efficacy beliefs were assessed at the end of the term, they did not predict essay scores. Therefore, it is possible to interpret the results of the current study as being determined by the participants' overestimation of their skills when they take their first course. A fifth possible explanation may be attributed to the cultural background of the students. Most of the participants in the current study were Japanese. Japanese culture encourages and emphasizes humbleness in most aspects of life, so it may be possible that, following cultural expectations, students did not report more efficacy in their writing skills to avoid appearing overly confident.

Overall, in relation to individual differences with regards to Writing Experience and SRL Strategy Use, statistically significant differences were not found in the present study due perhaps to the fact that in the current study Writing Experience was assessed only by the number of courses students had taken. It is possible that more reliable methods to assess experience in writing, such as testing the students' knowledge of academic conventions, may have yielded different results. The findings clearly suggest that more research in this area is necessary to better understand the role of writing experience in academic writing achievement. In relation to the impact of Writing Experience on Academic Writing Self-Efficacy, statistically significant differences were not found for Grammar Self-Efficacy, a finding that may be explained by the lack of explicit teaching of grammar skills in the context of this study. Significant differences for Writing Self-efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy revealed a pattern of lower levels of self-efficacy beliefs with more experience, which can be partly explained by the participants' tendency to overestimate their skills when they take their first course. Clearly more research in needed to better understand the sources that influence students' academic writing self-efficacy beliefs, as they gain more experience with writing.

Theoretical Implications

The results of the study suggest several theoretical implications. First, it seems that writing achievement and the factors that influence it are better understood in models that integrate self-regulation, and key motivational beliefs associated with self-regulation, such as self-efficacy and goal orientation. Although the SEM analyses for the hypothesized model in the present study did not yield statistically significant paths for all the hypothesized relationships, the hypothesized model fit the data well, suggesting that it is largely representative of the processes that affect second-language writing achievement in the context of first-year composition courses.

One important result of the present study was the significant path from English Proficiency to SRL strategy use. The influence of English Proficiency on writing achievement and the influence of the use of SRL strategy use on writing achievement have been examined separately in second-language research in writing. However, to date there are only a handful of studies that have included these two variables in the examination of factors that influence writing achievement. The results of the present study yielded a negative relationship between English Proficiency and SRL strategy use, suggesting that learners with higher proficiency are less likely to rely on SRL strategies. This finding can be interpreted as indicating that in L2 writing achievement, the learners use of SRL strategies is determined by their level of fluency in the language, and that L2 learners may rely on SRL strategies when they need to compensate for their lack of fluency in the target language. More studies are clearly necessary to better understand the relationship between these two variables and their independent and combined effect on writing achievement.

A second important finding was the significant relationship between Academic Writing Self-Efficacy and Essay Grade, and the differences between different levels of writing achievement and Writing Self-Efficacy. Although self-efficacy has been characterized as a strong mediator or predictor of academic achievement and writing achievement (Bandura, 1986; Pajares, 2003; Zimmerman & Kitsantas, 2007), this relationship has not been extensively investigated in second-language writing research. The findings in this study clearly show that self-efficacy can have not only a positive influence on academic achievement, but also a significant impact on students with different levels of writing achievement.

A third significant finding of the present study was the mediating role of Writing Attitudes between writing self-efficacy beliefs and SRL Strategy Use. As mentioned in the previous section, some researchers have found that self-efficacy predicts SRL strategy use (e.g., Zimmerman & Bandura, 1994), while other studies have found that attitudes towards writing also predict SRL strategy use (e.g., Graham et al., 2007); however, while many of these studies have only assessed the impact of one of these variables on strategy use, they have not examined the impact that both variables can have on each other and on strategy use, or on writing achievement. This is especially true in second-language writing research in which this relationship has received very

A final significant finding concerns the impact of different levels of writing experience on academic writing self-efficacy. The present study highlights statistically significant differences, which indicate that compared to students with more experience taking writing courses, students with less writing experience have higher levels of writing self-efficacy beliefs. While there seems to be evidence that this is a general pattern in first-language writing research (Pajares, 2003; Williams & Takaku, 2011), little attention has been paid to this relationship in second-language writing research. The results of this study show that this relationship is worthy of investigation.

Clearly, the results of the study indicate that further exploration some of the statistically significant relationships identified in the present study can contribute to a better understanding of how motivational and proficiency factors interact with each other and influence the writing achievement of second-language learners.

Pedagogical Implications

The results of the present study indicate that Academic Writing Self-Efficacy beliefs play an important role in writing achievement and are indicative of significant differences between students with Excellent and Low writing proficiency.

Consequently, an important pedagogical implication derived from these results is that writing instructors need to focus their attention on developing teaching approaches that help students nurture positive writing self-efficacy beliefs because it is clear that these beliefs can influence whether they perform well or poorly on their essays, and at the same time influence students' attitudes towards writing.

Educational psychologists have often emphasized the importance of nurturing positive writing self-efficacy beliefs in the writing classroom. Zimmerman and Bandura (1994), for example, recommended that college writing instructors should assess students' self-efficacy for their writing courses, identify areas where students are not confident, and teach them techniques or additional strategies to improve areas where they might feel "incapable" (p. 858). At the same time, Bandura (1986) emphasized that "students who develop a strong sense of self-efficacy are well equipped to educate themselves when they have to rely on their own initiative" (p. 417).

The problem is, however, that not many writing instructors are aware of the important role that writing self-efficacy plays in writing achievement or are not aware of methods or techniques that can be used for promoting positive self-efficacy beliefs. To solve this problem, Pajares (2005) has recommended several ways in which teachers can nurture positive self-efficacy beliefs in the classroom. First, it is recommended that teachers provide learners with tasks at their difficulty level so they can experience repeated success in accomplishing those tasks and achieve *mastery experience.* Second, he recommends providing students with *vicarious experiences* of observing peers overcome difficult tasks and finally achieve success. In the writing classroom, teaching students a wide range of self-regulatory strategies can aid them in finding solutions to the challenges they encounter as they complete their writing tasks. Third, providing positive and encouraging feedback to the students is recommended. In the writing classroom, this can be achieved by ensuring that the feedback provided to students by the instructors, or their peers in peer critique exercises, highlights not only the weaknesses of their work, but also the strengths. Finally, Pajares (2005) recommended reducing anxiety in the classroom by paying careful attention to how students are paired and by providing an environment that promotes cooperation and encourages learners to view mistakes as a tool for learning, not as something that needs to be avoided or feared. In college writing classrooms where students with poor language skills, or novice writers, are expected to complete difficult essay requirements, these recommendations can prove effective, and more importantly help ensure that students develop positive writing self-efficacy beliefs.

Although statistically significant differences were not found in relation to SRL Strategy Use and Writing Achievement and in relation to SRL Strategy Use and Writing Experience in the present study, it is plausible to assume that lack of emphasis on the explicit teaching in SRL Strategies in the classes that participated in the study might have influenced the results. The findings reported by intervention studies in first- and second-language writing have shown that the explicit teaching of SRL strategy skills can have a positive impact on the students' level of writing achievement, at least for some time (Graham et al., 2007; MacArthur et al., 2014). If the SRL strategies are explicitly taught in all levels of writing courses in first-year writing programs, the students may be able to retain the effects of instruction for longer periods of time as they gain more experience in writing. Especially, ESL students who often lack experience writing in English, or those who struggle with writing in their first course, may benefit from more explicit teaching of SRL strategies. If the explicit teaching of SRL strategies does not immediately have a positive effect on the quality of their written products, it can at least help to raise the students' awareness of writing as a very complex and demanding task. Many ESL novice students often approach their first writing classes unaware of the importance of exercising a certain degree of monitoring and regulation when writing their essays, and many times, it is this lack of awareness that leads them to unsuccessful outcomes in their classes. Thus, more emphasis on the teaching of SRL strategies may make a difference on how successful novice ELS writers are when they take their first first-year writing course.

Consequently, it is reasonable to conclude that the statistically significant findings of the current study highlight the importance of implementing teaching approaches that help students develop higher levels of writing self-efficacy beliefs. This is important because, as indicated by the results of the present study, academic writing self-efficacy beliefs not only influenced the participants' attitudes towards writing, but also had a direct impact on the students' grades. At the same time, the non-statistically significant results of the present study remind us of the possible importance of emphasizing SRL learning strategies in the writing classroom to ensure that novice ESL learners are aware of the complexity of writing and are properly supported as they encounter challenges in their writing classes.

Chapter 6 Summary

In this chapter, the results obtained for the three research questions that motivated the study were discussed and interpreted in light of previous findings in first- and second-language research in writing. Possible explanations for unexpected results were offered and the theoretical as well as the pedagogical implications of the findings were discussed.

CHAPTER 7

CONCLUSIONS

This chapter consists of four sections. First, I summarize the findings of the study. Second, I discuss the limitations of the study. Third, I make recommendations for future research. Finally, I offer a brief epilogue.

Summary of the Results

A theoretically based structural model hypothesizing the relationship among English Proficiency, Writing Attitude, Academic Writing Self-Efficacy, Mastery Goal Orientation and SRL Strategy Use was tested, modified, and validated. The model called Model of L2 First-Year Writing Achievement had adequate fit and most of the five hypotheses that were postulated were supported, or partially supported, by the data, indicating that some of the relationships described in self-regulated learning research and first-language research in writing can be applied to the context of second-language writing at the university first-year level.

Significant relationships were found between several variables. English language proficiency as measured by the TOEFL influenced both SRL Strategy Use and Essay Grade. Also, Writing Attitude had a positive impact on SRL Strategy Use and mediated the influence of Academic Writing Self-Efficacy on SRL Strategy Use, an important finding that has not yet been reported in second-language writing research. In addition, Academic Writing Self-Efficacy had a direct influence on Essay Grade.

In contrast to what has been reported in second-language writing research, English language proficiency as measured by the TOEFL did not influence Writing Attitude, and unlike what has been reported in the literature in Self-Regulated Learning and first-language research, Writing Self-Efficacy did not influence Mastery Goal Orientation. Moreover, SRL Strategy Use did not have a direct impact on Essay Grade. A different assessment and conceptualization of self-regulatory strategies, as well as the small sample size for the study, might have led to this unexpected result.

Second, gender differences were examined in relation to the hypothesized Model of L2 First-Year Writing Achievement by testing the model for males and females separately and comparing the results. The model for females had more adequate fit to the data than the model for males, suggesting that the model is more representative of the female participants in the current study. Significant differences in the models were found in the paths between English Proficiency and SRL Strategy Use, and Self-Efficacy and Essay Grade favoring females with statistically significant values.

Third, the results of a one-way MANOVA analysis conducted to assess the influence of SRL Strategy Use and Academic Writing Self-Efficacy yielded significant results only for one level of Academic Writing Self-Efficacy: Writing Self-Efficacy. Statistically significant differences were not found for Grammar Self-Efficacy, Self-Assessment Self-Efficacy and Revision Self-Efficacy. Neither were statistically significant differences found for any of the nine levels of SRL strategy Use. Thus, the results did not support the notion that self-regulatory strategies play a significant role in academic achievement (Zimmerman & Kitsantas, 2007; Zimmerman & Risemberg, 1997), but are congruent with the notion that writing self-efficacy has a powerful predicting influence on writing achievement (Bandura, 1991; Pajares, 2003).

Fourth, the results of a one-way MANOVA analysis conducted to assess the influence of Writing Experience on SRL Strategy Use and Academic Writing Self-Efficacy yielded significant results only for three levels of Academic Writing Self-Efficacy: Writing Self-Efficacy, Self-Assessment Self-Efficacy, and Revision Self-Efficacy. Statistical significant differences were not found for Grammar Self-Efficacy or for any of the nine levels of SRL Strategy Use. This finding suggests that broad conceptualizations of writing experience might not be enough to highlight differences in SRL strategy use. In addition, the results have shown that Academic Writing Self-Efficacy does not improve as a result of taking writing courses; in fact, the results indicated that students with less experience in writing reported higher levels of self-efficacy than those with more experience, a finding that is congruent with the literature in first-language writing research (Pajares, 2003; Williams & Takaku, 2011).

Taken together, the results of the current study lend support to findings in the literature on self-regulated learning and first-language writing, but they also suggest that more research is needed to gain a better understanding of the role that each of these variables, by themselves, or in relation to others, play in second-language writing.

Limitations of the Study

There are a number of limitations of the present study. The first limitation concerns the sample size. As pointed out earlier, the ideal sample size for a model like the one hypothesized in the study would be greater than 200; the *N*-size for the study was only 170. This greatly affects the generalizability of the findings of the study as a whole, and also the generalizability of the findings related to the impact of Gender as the SEM analysis were conducted with only 97 female and 83 male participants; this number is less than optimal for models with so many parameters.

The second limitation concerns the research methodology. All the data were collected using self-report surveys and questionnaires. Although valid and reliable for the context in which they are used, self-report questionnaires cannot capture the actual events or ongoing processes of self-regulation (Cleary, Callan, & Zimmerman, 2012; Pintrich, 2004), but they can only highlight propensities to use self-regulatory strategies (Pintrich, 2004). For this reason, Zimmerman (2000a) has suggested qualitative methods to examine the dynamic nature of self-regulated learning. A second caveat of self-report data is the possibility that students' responses might be affected by social desirability bias, thus making it difficult to ascertain the actual use of the strategies that they report having used.

A third limitation affecting the generalizability of the results concerns the instruments used to gather data. Two of the instruments, the Academic Writing Self-Efficacy survey, and the SRL Strategy Use survey were developed for this study. While based on theory, the two instruments were designed to assess the variables in the context of L2 first-year students in one specific writing program, and to specifically reflect the objectives, and assessment criteria used in the teaching context for the present study. Given the context-specific pedigree of these instruments, they might not be generalizable to other contexts. A second caveat related to the instruments concerns the dimensionality of the constructs in each of the instruments. As discussed earlier, the instruments did not meet all the guidelines for construct unidimensionality of the Rasch measurement model, which may have influenced the results.

A fourth limitation concerns the variables that were examined in the hypothesized model. Although the model examined the impact of proficiency, motivational, and demographic variables, and key components of self-regulated learning, it does not address all the potential factors influencing writing achievement that have been identified in L1 and L2 research. For example, it does not include anxiety, personality traits, and locus of control, which also seem to predict writing performance (Jones, 2008). It is also possible that other relationships might also hold true of the variables under examination. Thus, while the model in the current study fit the data reasonably well, it is only one of the many plausible models that can be hypothesized and tested to investigate the factors that play a role on writing achievement.

Suggestions for Future Research

Taking into consideration the findings and limitations of the present study, in this section, I offer possible suggestions for future research examining the relationship between SRL, key motivational factors associated with SRL, and L2 language proficiency.

The first suggestion concerns the replication of the study. First, the current study should be replicated with a larger sample size and more reliable instruments to ascertain the validity and generalizability of the results, and to confirm whether or not SRL strategy use as conceptualized in the present study has an impact on writing achievement.

Second, future research should adopt a triangulation methodology using self-report questionnaires, class observations, and structured interviews. Such an approach can help to better understand the reasons why students do or do not use self-regulatory strategies, and why the students' self-efficacy beliefs do not increase as they take more courses. In other words, data from class observations and structured interviews can help to better interpret the self-report data and to make more informed conclusions about the factors that influence writing achievement.

Third, in order to ascertain that the principles of self-regulated learning as investigated by educational psychologists, are applicable to second-language writing, it might be necessary to conduct research using measures of SRL strategy use, self-efficacy, and goal orientation that have already been tested and validated in research on academic achievement. The Motivation Strategies Learning Questionnaire developed by Pintrich and De Groot (1990) could be used to confirm the extent to which self-regulation, self-efficacy and goal orientation influence academic writing.

Fourth, more research using structural equation models including more variables and more complex relationships should be conducted in the field of second-language writing. Researchers in second-language writing recognize that many factors influence writing achievement, yet not many studies have investigated these factors using structural equation modeling, with most studies relying mostly on correlations or regression analyses. The problems with these research methods is that they do not allow the examination of the direct, indirect, and covariate relationships among the factors; thus, it is important that more models of writing achievement are hypothesized and tested to better understand how these factors interact to influence writing achievement.

Finally, longitudinal studies should be conducted to investigate how motivational beliefs such as writing attitude and writing self-efficacy change as students gain more knowledge of academic writing, or begin to develop more self-efficacy in their writing. Longitudinal studies can help to better understand how the writing experience influences academic writing achievement.

Final Comments

I undertook the present study for three main reasons, first, to better understand the factors that affect the success of the non-native English speaking first-year students enrolled in the First Year Writing Program of the university where I teach, and, second, to confirm my long held belief that self-regulation plays a more important role in academic writing achievement than general English proficiency.

Often times, some of the students I teach in my classes, or those who enroll in different sections of writing classes in my university's first year writing program, withdraw from the classes or fail to achieve the minimum passing grade for the class. At the same time, some the students who remain in the class often submit work that reflects lack of monitoring and regulation, as if they were unaware that writing requires is a difficult skill that demands a lot of time, effort, and self-regulation, especially for non-native speakers of English. As a result, some of them fail the classes even when they have high levels of language proficiency.

The literature in SRL provided me with a possible explanation for the lack of success or engagement of the students, suggesting that it may be due to students' failure to use SRL strategies or to the influence of motivational factors such as self-efficacy, attitudes towards writing, and goal orientation, which are often associated with SRL. Fortunately, the results of the study revealed that the model I hypothesized fit the data well and confirmed the applicability of SRL to the L2 first-year writing classroom. However, through the process of conducting the research, I came to realize that perhaps Goal Orientation is not as influential a factor for my students as it is often assumed to be in theories of SRL. This is due to the fact that many of the students in our program are motivated by their desire to only obtain the course credits, rather than by a desire to master writing skills. Therefore, I can say that conducting this research has allowed me to better understand the motivations that influence the amount of time and effort that the students exert on their work, and has made me more aware of the achievement goal orientations of my students. Having become more aware of this reality, I can now focus on developing teaching approaches to motivate students with different achievement goal orientations, and, in the process, attempt to motivate them to become more interested in learning skills rather than in just earning the credits to take upper level courses.

Unfortunately, the results of the current study did not confirm my long-held belief that English proficiency is less influential than SRL strategies use, as the results of the present study indicated that English Proficiency, as measured by the TOEFL iBT, had a significant direct impact on writing achievement, but SRL Strategy Use did not. However, by discussing the differences between findings in other studies and my own, and taking into consideration methodologies, instruments, and samples sizes, I was able to come to the conclusion that the lack of statistically significant results may be derived from problems related to my instruments, methodology, or sample size, and not to the inherit validity of my long held belief. As a result, the non-significant findings have encouraged me to replicate the study with larger samples sizes and more reliable measures of SRL Strategy Use. In addition, the fact that I did not find a statistically significant relationship between SRL Strategy Use and Essays Grades also allowed me to become more aware of the importance of self-efficacy in writing performance. In most of the research questions that motivated this study, self-efficacy emerged as a stronger predictor of writing achievement. This finding by itself will undoubtedly motivate me to conduct further research and influence the way I teach my writing classes. It will also guide me as I attempt to implement teaching approaches that not only nurture my students' self-efficacy beliefs in their writing skills but also ensure their success in my writing classes.

I hope that the findings of the present study contribute to enhance our understanding of the role of SRL and key motivational factors associated with SRL in second-language writing achievement. In the process of completing this study I have learned more than I could possibly imagine. I have grown as a researcher and as a writing instructor, and I have become myself a more self-regulated writer. I hope the study contributes something of value to the reader and that it sparks a strong desire to conduct more research on the role of self-regulation and self-efficacy on writing achievement, an area of study that remains largely neglected in second-language writing research.

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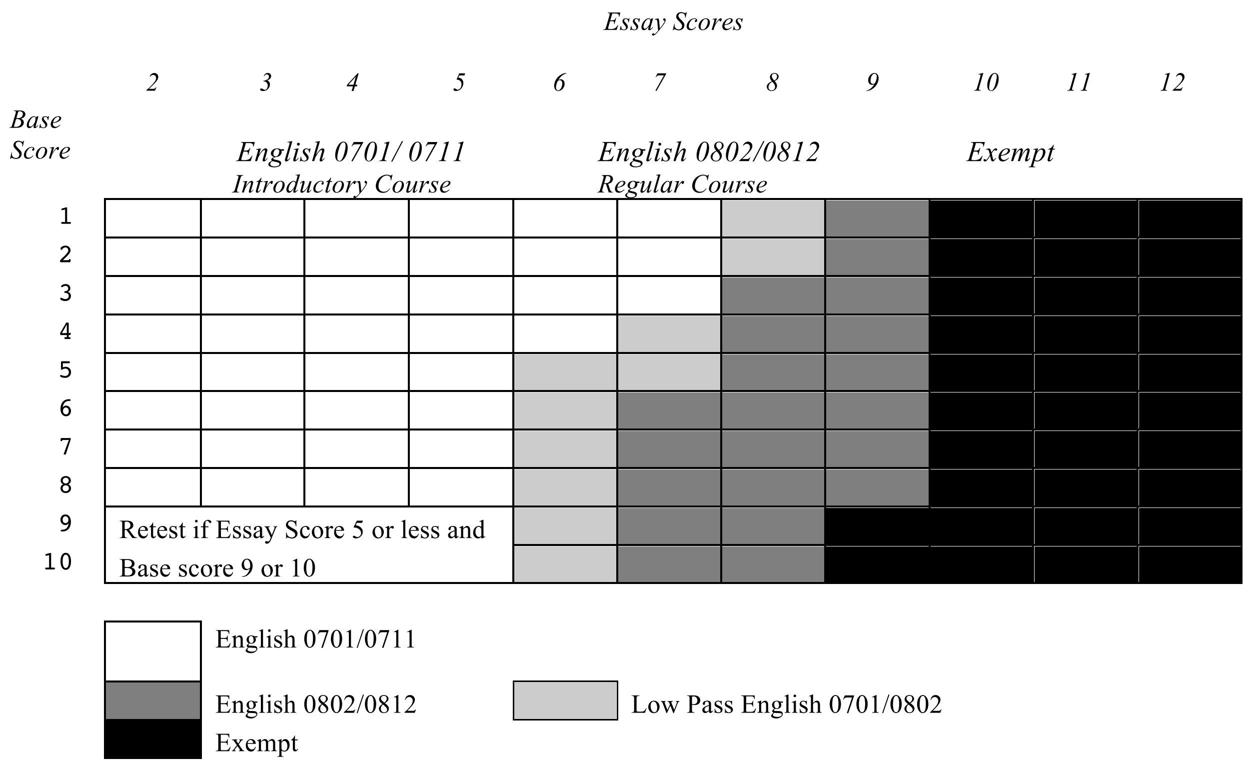
APPENDICES

APPENDIX A
UNIVERSITY PLACEMENT EVALUATION SCALE



APPENDIX B
REGULAR COURSE SAMPLE SYLLABUS

Freshman Year Writing Program
Regular Course Syllabus
Fall 2013

Course name: Analytical Reading and Writing ESL	**Instructor:** Ada Angel
Course number: Eng0812	**e-mail**: angel@tuj.temple.edu
Course sections: (805) MWF Rm 211 10:00-11:20	**Phone:** 03-5441-9800 Ext. 614
(801) MWF Rm 405 12:40-14:00	**Office**: 6th Floor/Writing
First Class: Monday, September 2nd	Office Hours: MWF 11:30-12:30
Last Class: Monday, December 2nd	or by appointment

Course Overview:
English 0812 is a course designed to introduce students to the strategies, conventions, habits of mind, and research methods used in academic reading and writing. *English 0812 is designed for students whose primary language is not English*, and who are either placed into or given the option of an ESL-inflected section of freshman composition.

Although Eng0812 is a themed course, the primary purpose is to help students become familiar with the complex demands of college writing, especially argumentation, research, evaluation of sources, and synthesis of materials. The theme of this section of English 0812 is Body Image. Students will read and learn about different issues related to body image which include, but are not limited to, the role of the media and other factors on body image dissatisfaction, men's attitudes and concerns about body image and cosmetic surgery. This theme will provide a sense of direction and coherence to the semester's work, and it should serve to motivate and inspire students as they explore intellectually challenging questions.

The main goal of this course is to help students to develop effective critical thinking skills, productive study habits, and efficient proofreading skills. The course also aims at helping students master an underlying view of writing that encourages revision, investigation, and argumentation.

Note.
This is an ESL section of Analytic Reading and Writing. Native English speakers should be aware that the credits earned in this course may not be transferable to other American universities.

Course Objectives: At the end of the summer term Eng0812 students should be able to:
1. Summarize, analyze, and critique the assigned readings and the writing of their classmates;
2. Write clear, coherent, grammatically and mechanically correct, effective argumentative essays;
3. Accurately acknowledge differing points of view and to make connections between source materials, and between your own ideas and those presented in sources.
4. Document all sources used in your essays according to MLA guidelines.
5. Enhance research skills using TU portal.
6. Become better aware of their strengths and weaknesses as writers.

Prerequisite: English 0701 or 0711: Introduction to Academic Discourse.

Required Materials

A-4 notepad, staplers, highlighters, A4 clear file folder, **active TU e-mail account**, and a memory stick.

Required Texts
All required readings will be made available through Blackboard, the online course management and learning tool. *Research and Documentation Online 5th Edition* (http://bcs.bedfordstmartins.com/resdoc5e/) by Diana Hacker and Barbara Fister will serve as the online "textbook" for the course.

ACADEMIC POLICIES

1. Attendance
Make sure you come to class on time. Three late arrivals will be considered as one absence. Main Campus attendance policy states that **four** unexcused, or excused, absences will result in failure of the course. *If you have to be absent on the day when an essay is due, e-mail me before class and send your essay as an attachment. If you know in advance that you will be absent, make arrangements to turn your assignments to me early.*

2. Plagiarism
Plagiarism is the unacknowledged use of another person's labor: another person's ideas, words, or assistance. Some sorts of plagiarism are obvious. Students must not copy someone else's examination answer or laboratory report, submit a paper written in whole or in part by someone else, or have a friend do an assignment or take a test for them. Other forms of plagiarism, however, are less obvious. Any form of plagiarism will not be tolerated. Punishment for plagiarism will range from failure on the assignment to failure of the course. See TUJ Undergraduate Bulleting (pg. 15) for a more complete explanation.

3. Penalties for Academic Dishonesty
The penalty for dishonesty can vary from a reprimand and receiving a failing grade for a particular assignment, to failure for the course, to suspension or expulsion from the University. The penalty varies with the nature of the offense, the individual instructor, the department, and the school or college.

It is important that you learn how to appropriately use someone else's ideas, words, or data. You must always cite your sources. If you are uncertain about what constitutes plagiarism consult with me **before you hand in your essay**, but the following rules will help you avoid plagiarism:

a. The language in your paper must be either your own or a direct quote from the original author.
b. Changing a few words or phrases from another writer's work is not enough to make the writing "your own." The writing is either your own or the other person's; there are no in-betweens.
c. In-text citations and an accurate bibliography should be used every time you are not expressing your own "words", or 'ideas".

NOTE: In this class plagiarism will result in failure of the course. This is not negotiable.

4. Violating the Rules of an Assignment
Academic work is intended to advance the skills, knowledge, and intellectual competence of students. It is important, therefore, that students not behave in such a way as to thwart these intentions. When students are given assignments in a class, the instructor will normally explain the rules under which the assignment is to be carried out. A student who does not understand the rules should ask the instructor for clarification.

5. Temple's Policy on Student and Faculty Academic Rights and Responsibilities

Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has adopted a policy on Student and Faculty Academic Rights and Responsibilities (Policy # 03.70.02) which can be accessed through the
Following link: http://policies.temple.edu/getdoc.asp?policy_no=03.70.02.

6. Disability Disclosure
Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the situation during the first week of classes. It is the students' responsibility to contact the AAC to determine reasonable accommodations for students with documented disabilities.

7. Withdraw Policy
Students have the option to withdraw from this course more than once. However, it will affect your eligibility to repeat this course multiple times (See repeat Policy below). Students may withdraw from a course online via Self-Service Banner. TUJ calendar lists Monday, November 11th as the last day to withdraw.

8. Final Exams
Final Exams are not required for Eng0812. Instead of a final exam, you will be required to submit a final portfolio of your course work on the last day of classes.
During the final exams week, two undergraduate faculty members will evaluate your portfolio. You can receive your final evaluation a week after you have turned in the portfolio (TBA). Your instructor will meet with you, return your portfolio and discuss your evaluation.

9. Class Recording
Recording of this class is permitted for personal use ONLY. Broadcast, dissemination or transmission of any recording in any form is strictly forbidden, and may result in, inter alia, disciplinary action taken under the Student Code of Conduct.

10. Repetition of this course
Students who do not complete any of the following courses Eng0701/0711, Math 0701, IH 0851/0951, IH0852/0952 after their third attempt, including withdrawals, will be dismissed from the University regardless of cumulative GPA. For further information, please refer to the Academic Policy Website at http://www.tuj.ac.jp/newsite/main/undergrad/academic_advising/policies/repeating_a_course.html

COURSE REQUIREMENTS AND POLICIES

1. Class Participation
Class participation is essential to the successful completion of this course. It is important that you always come to class prepared to contribute your ideas to the class discussion. This means that you must complete all reading and writing assignments prior to class.

2. Classroom Behavior
Disruptive, disrespectful, or non-collegial behavior will not be tolerated. Action will be taken against any student displaying such behavior.

3. Essays
In this course you will complete three essays that involve research, argumentation, and synthesis.
Essay 1: Evaluation and Argument (1200-1500 words)

The essay goals are a) to summarize and evaluate class readings and research materials; and b) to take a position on the ideas presented in the readings and research materials. In this class, you will achieve these goals by comparing and contrasting the articles written by Graydon and Derene and Beresin. You will be required to read two additional sources to help you critique the arguments made by these authors and to help you support your position in relation to their arguments.

Essay 2: Synthesis and Argument (1500-1800)
The essay goals are a) make connections between readings and research sources, b) to use different sources within one paragraph to support a specific idea and argument and c) to demonstrate control of logic, transition and connections. In this class, you will achieve these goals by writing a synthesis on the topic of male body image. You will write this paper in reference to women's body image, and you will be required to read 6 articles; four provided by the instructor and two of your own.

Essay 3: Synthesis and Argument (1800-2100)
They essay goals are a) to synthesize information and defend a position on a topic related to the theme of the course, b) to demonstrate considerably good skills in research and development of ideas. In this class, this essay is similar to a final exam in the sense that you will have to demonstrate control and mastery of many of the skills taught during the course including MLA, logical organization, synthesis, and coherence. In this class, you will be required to take and defend a position on the topic of the influence of media on body image dissatisfaction. To write this essay you will rely in sources used to write essays 1 and 2 and at least two new sources of your own.

You **are required to complete an outline and 3 drafts for each essay and to submit hard and electronic copies of all your drafts.** Not submitting all drafts will affect the score for revision and your overall essay grade. Electronic copies should be submitted before class to: **Blackboard's Safe Assignments,** and hard copies should be handed in to the instructor in class. Failure to submit all required drafts to Safe-Assignments may result in delays getting your essays back, or an F grade in your essay.

Drafts deadlines: **All drafts are due at the beginning of each class**. **Overdue drafts will not be awarded points (4 pts) but will receive teacher feedback.** You will self-evaluate and receive teacher feedback for your drafts. The first draft will be self-assessed and peer critiqued. The second draft will receive teacher feedback, and a conference will be held to discuss this draft. The third, or final draft, will receive a grade.

3. Conferences
You are required to meet with the instructor for individual conferences at least 4 times during the term. To facilitate the conference process, some classes will be cancelled. You need to be on time for conferences. If you have to miss a conference, e-mail me before your conference time, and as soon as you return, make arrangements to schedule a new conference with me. More information on how to prepare for conferences will be given later during the term.

4. Assignments:
a. Reading assignments. You must come to class having completed all the assigned readings and their corresponding active reading sheet (ARS). The reading assignments for each class are outlined in the course schedule. All the readings for the course are available on Blackboard. **It is your responsibility to check Blackboard on daily basis, download the articles, and print hard copies before class.** 3 points will be awarded for each ARS. There will be a total of 10 ASR assigned.

b. Essay drafts: The first and second drafts of an essay will count as assignment. Each draft will be worth 4 points broken down as follows:

Draft 1: Completion (1), Thesis (1), Topic sentences (1), Work Cited page (1)
Draft 2: Thesis (1 pt), Topic sentences (1), Supporting details (1), MLA (1), total = 4 points

d. Outlines: Outlines will consist of 1 full introductory paragraph, and a skeleton of ideas for body paragraphs. Outlines are worth 4 points: 2 points for completion and 2 for overall quality.

e. Reading Quizzes: There will be three reading quizzes throughout the term. Each quiz is worth 8 points for a total of 24 points.

NOTE. All assignments are due at the beginning of each class period. Overdue assignments will be accepted, and feedback will be provided, BUT points will not be awarded. Only assignments submitted on time will receive the corresponding points.

5. Portfolio

Whether or not you pass the course is largely determined by the quality of your writing portfolio. Your instructor and a second reader will assess the quality of your portfolio at midterm and at the end of the term.

a. Midterm Portfolio: In your midterm portfolio you will include **clean copies** of all the essays and drafts completed up to midterm. Your midterm portfolio will be evaluated as "Good", "Average", or "Needs Improvement". Although this evaluation will not have a direct effect on your course grade, it will be a good indicator of your course performance and writing progress up to this point. Individual conferences will be held to discuss your midterm portfolio evaluations.

b. Final Portfolio: Your final portfolio should contain the following:
   1. A cover letter describing the contents of the portfolio
   2. Clean copies and commented drafts of all three essays.

The final portfolio is due on the last day of classes (December 2nd). Overdue portfolios will not be accepted. In order to ensure you have all the materials required for your final portfolio, please save copies of all the essay drafts you write throughout the term.

COURSE ASSESSMENT

Your course grade will be based on: a) the total number of points you accumulate for class work during the term, and b) the grading scale below. Course requirements will be graded as follows:

a) Course Requirements		**b) Grading scale**
1. Quizzes and Assignments	**= 90 points (15%)**	A .93 - .96
Reading Quizzes (3 x 8)	= 24 points	A- .90 - .92
Outlines (3 x 4)	= 12 points	B+ .87 - .89
Drafts 1 and 2 (6 x 4)	= 24 points	B .83 - .86
Active Reading Sheets (10 x 3)	= 30 points	C+ .77 - .79
		C .73 - .76

2. Essays:	**= 510 points (85%)**	C- .70 - .72
Essay 1 (3 to 4 pages)	= 150 points (25%)	F .50 - .69
Essay 2 (4 to 5 pages)	= 168 points (28%)	
Essay 3 (6 to 7 pages)	= 192 points (32%)	

Total Possible Points: 600 points (100%)

Note that in the First Year Writing Program final grades are limited to the following: A, A-, B+, B, B-, C+, C, C-, F, W, I.

Your Course Grade: At the end of the semester, your course work grade will be calculated by dividing the total number of points you accumulate throughout the course by the total number of possible points (600). A proportion will be obtained from this division, and the equivalent grade shown in the grading scale will be given. You can calculate your grade any time during the term using this formula:
Your points / total points = proportion = grade

420 / 600 = 0.70 = C-

First Year Writing Program Assessment

Obtaining a C- for course work does not mean that you have passed the course. In order to pass the course, the First Year Writing Program requires that you:

1. Meet the attendance requirements (only 4 absences)
   AND
2. Receive at least a C- on your course work
   AND
3. Receive a P (passing evaluation) on your final portfolio

APPENDIX C
INTRODUCTORY COURSE SAMPLE SYLLABUS

First-Year Writing Program
Eng0711: Introduction to Academic Discourse ESL
Fall 2013

Course: Introduction to Academic Discourse ESL	**Instructor**: Sunghee Ahn
Course number: Eng 0711	**e-mail:** ahn@tuj.temple.edu
Course section: Sec (801)	**Phone:** 03-5441-9800 Ext. 614
CRN: 21203	**Office:** 6th Floor/Writing
Meeting times: MWF 10:00-11:20 Rm AZ210	**Office hours:** MWF 11:30-12:30 and by appointment
First Class: Monday, September 2nd	
Last Class: Monday, December 2nd	

Course Description:
English 0711 is designed for students whose primary language is not English and who are not yet familiar with the conventions of academic writing. The course is designed to help students develop the ability to 1) interpret, analyze, connect and compare ideas from texts within a single theme; 2) incorporate and build upon the ideas from the texts; 3) respond to the texts critically; 4) organize ideas in a coherent manner; 5) revise extensively and effectively; and 6) use appropriate conventions of citation and documentation.

The theme of this course is *Digital Technology and Communication.* We will critically read and discuss essays written on the topics exploring the ways various users utilize the digital technology and the effects of this latest technology on the ways we communicate. Students will also write about these topics and learn various important strategies used in written academic discourse. English 0711, if successfully completed, will give you a strong foundation for future academic writing.

Course Objectives:
In this class students will learn to:

- read and annotate college level readings
- organize academic essays
- write focused and coherent paragraphs
- construct persuasive arguments
- revise papers through multiple drafts
- use MLA conventions
- work toward independence as writers

Required Materials
A-4 notepad, staplers, highlighters, A4 clear file folder, **active TU e-mail account**, and a USB memory stick.

Required Texts

All required readings will be made available through Blackboard, the online course management and learning tool. *Research and Documentation Online 5^{th} Edition* (http://bcs.bedfordstmartins.com/resdoc5e/) by Diana Hacker and Barbara Fister will serve as the online "textbook" for the course.

Essay Topics
For the first essay assignment you will read two essays about digital technology and its impact on culture. You will write an essay in which you (1) summarize main ideas from each article with the purpose of connecting them to a central question at hand and (2) compare and contrast the authors' beliefs on the given topic. The required readings for this assignment are: "Three Tweets for the Web" by Tyler Cowen and "Fast Entertainment and Multitasking in an Always-On World" by S. Craig Watkins.

For the second essay assignment you will read three writers arguing different perspectives on the uses and effects of digital technology. You will choose two from the three readings and write an essay in which you (1) compare and contrast the two essays and (2) comparatively evaluate their relevance to real life. In order to complete this task you will decide on meaningful points of comparison and contrast and formulate a clear and focused thesis that reflects your purpose. The required readings for this assignment are: "Do They Really *Think* Differently?" by Marc Prensky; "Is Google Making Us Stoopid?" by Nicholas Carr; and "Is PowerPoint the Devil?" by Julia Keller.

For the third essay assignment you will read, in addition to the readings done above, four more writers exploring the ways various digital media such as email, video games, social media, and video-sharing websites such as YouTube affect the way people behave. Based on the readings, you will do a close reading of the essay, "In the Beginning Was the Word" written by Christine Rosen. You will practice the skills of summarizing, evaluating, and synthesis. The required readings for this assignment are: "The Other Side of Email" by Robert Kuttner; "Learning Theory, Video Games, and Popular Culture" by James Gee; "I Tweet, Therefore I Am" by Peggy Orenstein; "Teen 'Haulers' Become a Fashion Force" by Andrea Chang; and "In the Beginning Was the Word" by Christine Rosen.

For the fourth essay assignment you will write an argumentative essay in which you assess the effects of the digital technology on young people's learning. In order to complete this task you will conduct online research and provide convincing evidence that your position is more valid than that of the opponents. In this assignment you are required to demonstrate your abilities to succinctly summarize different points of view and to synthesize various sources in a coherent manner. The required readings for this assignment are: "For Students in Internet Age, No Shame in Copy and Paste" by Trip Gabriel and "2b or Not 2b?" by David Crystal.

ACADEMIC POLICIES

1. Attendance
Make sure you come to class on time. Three late arrivals will be considered as one absence. (Anyone who is not in class when the role is called will be marked late.) Main Campus attendance policy states that **four** unexcused, or excused, absences will result in failure of the course.

If you have to be absent on the day when an essay is due, e-mail me before class and send your essay as an attachment. If you know in advance that you will be absent, make arrangements to turn in your assignments to me early.

All the handouts given in class will be posted on Blackboard. **You are responsible for checking Blackboard and TUJ email on regular basis and making sure you have the necessary handouts and have been informed of announcements <u>before</u> the following class time.**

2. Plagiarism
Plagiarism is the unacknowledged use of another person's labor: another person's ideas, words, or assistance. Some sorts of plagiarism are obvious. Students must not copy someone else's examination answer or laboratory report, submit a paper written in whole or in part by someone else, or have a friend do an assignment or take a test for them. Other forms of plagiarism, however, are less obvious. Any form of plagiarism will not be tolerated. Punishment for plagiarism will range from failure on the assignment to failure of the course. See TUJ Undergraduate Bulletin (pg. 15) for a more complete explanation.

3. Penalties for Academic Dishonesty
The penalty for dishonesty can vary from a reprimand and receiving a failing grade for a particular assignment, to failure for the course, to suspension or expulsion from the University. The penalty varies with the nature of the offense, the individual instructor, the department, and the school or college.

It is important that you learn how to appropriately use someone else's ideas, words, or data. You must always cite your sources. If you are uncertain about what constitutes plagiarism consult with me **<u>before you hand in your essay</u>**, but the following rules will help you avoid plagiarism:

f. The language in your paper must be either your own or a direct quote from the original author.
g. Changing a few words or phrases from another writer's work is not enough to make the writing "your own." The writing is either your own or the other person's; there are no in-betweens.
h. In-text citations and an accurate bibliography should be used every time you are not expressing your own "words" or "ideas".

NOTE: <u>In this class plagiarism will result in failure of the course</u>. This is not negotiable.

4. Violating the Rules of an Assignment
Academic work is intended to advance the skills, knowledge, and intellectual competence of students. It is important, therefore, that students not behave in such a way as to thwart these intentions. When students are given assignments in a class, the instructor will normally explain the rules under which the assignment is to be carried out. A student who does not understand the rules should ask the instructor for clarification.

5. Policy on Student and Faculty Academic Rights and Responsibilities
Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has adopted a policy on Student and Faculty Academic Rights and Responsibilities

(Policy # 03.70.02) which can be accessed through the following link:
http://policies.temple.edu/getdoc.asp?policy_no=03.70.02.

6. Disability Accommodation
Any student who has a need for accommodation based on the impact of a disability should contact the instructor privately to discuss the specific situation as soon as possible. The student will then contact the Academic Advising Center which will forward to Temple Main Campus to determine the reasonable accommodation for students with documented disabilities.

7. Final Exams
Final Exams are not required for Eng0711. Instead of a final exam, you will be required to submit a final portfolio of your course work on the last day of classes (Monday, December 2nd). During the final exams week, two undergraduate faculty members will evaluate your portfolio. You can receive your final evaluation a week after you have turned in the portfolio (TBA). Your instructor will meet with you, return your portfolio and discuss your evaluation.

8. Taping and Recording of Class
Recording of this class is permitted for personal use ONLY. Broadcast, dissemination or transmission of any recording in any form is strictly forbidden, and may result in, inter disciplinary action taken under the Student Code of Conduct.

9. Withdrawal Policy:
Students have the option to withdraw from this course more than once. However, it will affect your eligibility to repeat this course multiple times (See repeat Policy below). Students may withdraw from a course online via Self-Service Banner. TUJ calendar lists Monday, November 11th as the last day to withdraw.

10. Repetition of this course
Students who do not complete any of the following courses Eng0701/0711, Math 0701, IH 0851/0951, IH0852/0952 after their third attempt, including withdrawals, will be dismissed from the University regardless of cumulative GPA. For further information, please refer to the Academic Policy Website at
http://www.tuj.ac.jp/newsite/main/undergrad/academic_advising/policies/repeating_a_course.html.

COURSE RULES

1. Class Participation
Class participation is essential to the successful completion of this course. It is important that you always come to class prepared to contribute your ideas to the class discussion. This means that you must complete all reading and writing assignments prior to class.

2. Classroom Behavior
Disruptive, disrespectful, or non-collegial behavior will not be tolerated. Action will be taken against any student displaying such behavior.

3. Essays

In this course you will complete four essays that involve summarizing, argumentation, and synthesis. **You are required to complete 3 drafts for each essay** and to submit hard copies and electronic copies of all your drafts.

Make sure you meet the deadline for all drafts. **All drafts are due at the beginning of class. Overdue drafts will receive instructor's comments, but will not receive points. Also, 5 points will be discounted for each class day a final draft is overdue.**

Electronic copies should be submitted to Blackboard's Safe Assignments.

You will receive peer or teacher feedback for your drafts. The first draft will be read and evaluated by your peers in a peer review workshop, or self-assessed by you. The second draft will be read and commented on by the instructor, and a conference will be held to discuss this draft. The third, or final draft, will receive a definite grade.

4. Conferences

You are required to meet with the instructor for individual conferences at least 4 times during the course. To facilitate the conference process, some classes may be cancelled. You need to be on time for conferences. If you have to miss a conference, e-mail me before your conference time, and as soon as you return, make arrangements to schedule a new conference. More information on how to prepare for conferences will be given later during the term.

5. Essay Re-Evaluation Policy

At the end of the term, students who meet the following conditions can opt for a re-evaluation of Essays 1, 2 and 3:

1. **The student submitted all essay drafts (outline, draft 1, and final draft) on time.**
2. **All drafts met the length requirement at the time of submission.**
3. **There was clear evidence of revision across drafts.**

Depending on the quality of the revision, your grade may or may not improve. If there is no improvement, the original grade will remain. If there is improvement, the highest grade increment that can be achieved is **ONE** grade increment from the original grade (e.g. If the original grade was C, the grade can potentially be improved to C+).

During the term, your instructor will let you know which of your essays are eligible for re-evaluation. All revised final drafts should be submitted at the end of the term as part of the final portfolio, and should be accompanied by the original drafts and grade sheets. You are encouraged to meet with your instructor during the term to discuss your revisions.

6. Assignments and Readings

a. Reading assignments. You must come to class having completed all the assigned readings and ready to participate in our class discussions. The reading assignments for each class are outlined in the course schedule. All the readings for the course will be available on Blackboard. It is your responsibility to check Blackboard on daily basis and download the articles before you come to class.

b. Reading Quizzes: There will be 5 reading quizzes worth 4 points each based on the required course readings. The quizzes will include 4 short questions that should be answered in a well-organized paragraph. **No make-up quizzes will be given for missed quizzes**.

c. Outlines: **Outlines will count as assignments, and they will receive 3 points each.** 1 point will be given for completion, 1 for topic sentences, and 1 for overall quality.

d. Drafts 1 and 2: Drafts 1 and 2 will count as assignments. Each draft will be awarded a possible total of 4 points broken down as follows: 1 point for overall organization, 1 point for thesis, 1 point for topic sentences, and 1 point for total number of words.

e. Other assignments: This category may include reflective essays, portfolio cover letter, journals, and research done using TU portal. More details about each specific assignment will be given throughout the term. A total of 42 points will be awarded for all assignments.

NOTE. Assignments deadlines: All assignments are due at the beginning of each class period. Overdue assignments will not receive points.

7. Portfolio

Whether or not you pass the course is largely determined by the quality of your writing portfolio. Your instructor and a second reader will assess the quality of your portfolio at midterm and at the end of the term.

c. Midterm Portfolio: In your midterm portfolio you will include **clean copies** of all the essays and drafts completed up to midterm. Your midterm portfolio will be evaluated as "Good", "Average", or "Needs Improvement". Although this evaluation will not have a direct effect on your course grade, it will be a good indicator of your course performance and writing progress up to this point. Individual conferences will be held to discuss your midterm portfolio evaluations.

d. Final Portfolio: Your final portfolio should contain the following:
   1. A cover letter describing the contents of the portfolio
   2. Clean copies and commented drafts of all four essays.

The final portfolio is due on the last day of classes, December 2nd. Overdue or incomplete portfolios will not be accepted. **In order to ensure you have all the materials required for your final portfolio, please save copies of all the essay drafts you write throughout the term.**

The final portfolio is due on Monday, December 2nd.

COURSE ASSESSMENT

Your course grade will be based on: a) the total number of points you accumulate for class work during the term, and b) the grading scale below. Course requirements will be graded as follows:

a) Course Requirements **b) Grading scale**

1. Assignments:	=	**106 points**	**(15%)**
Reading Quizzes (4pts x 5)	=	20 points	
Outlines (3pts x 4)	=	12 points	
Drafts 1 and 2 (4pts x 8)	=	32 points	
Other written assignments	=	42 points	
2. Essays:	=	**600 points**	**(85%)**
Essay 1 (3 to 4 pages)	=	110 points	(15%)
Essay 2 (3 to 4 pages)	=	110 points	(15%)
Essay 3 (4 to 5 pages)	=	180 points	(25%)
Essay 4 (6 to 7 pages)	=	200 points	(30%)
Total Possible Points:		**706 points**	**(100%)**

A	.93 - .96
A-	.90 - .92
B+	.87 - .89
B	.83 - .86
B-	.80 - .82
C+	.77 - .79
C	.73 - .76
C-	.70 - .72
F	.50 - .69

Note that in the First Year Writing Program final grades are limited to the following: A, A-, B+, B, B-, C+, C, C-, F, W, I.

Your Course Grade: At the end of the semester, your course work grade will be calculated by dividing the total number of points you accumulate throughout the course by the total number of possible points (706). A proportion will be obtained from this division, and the equivalent grade shown in the grading scale will be given. You can calculate your grade any time during the term using this formula:
Your points / total points = proportion = grade

515 / 706 = 0.73 = C

FIRST YEAR WRITING PROGRAM ASSESSMENT

Obtaining a C- for course work does not mean that you have passed the course. In order to pass the course, the First Year Writing Program requires that you:

4. Meet the attendance requirements (only **3** absences)
   AND
5. Receive at least a C- on your course work
   AND
6. Receive a P (passing evaluation) on your final portfolio

APPENDIX D
TEACHING HANDOUTS USED IN THE WRITING COURSES

Handout 1: Structure of an Academic Essay

Most academic writing, no matter what its purpose, has a definite shape and structure. This helps writers shape their thinking in a way that is understandable to any reader. It is imperative that you are familiar with the structure and elements of an academic essay.

1. Fill out the blanks with the corresponding names of essay parts:

Essay Parts   Parts 1

Eng 0812 (801)
Essay 1, draft 1
August 29th , 2012

Academic Essay Structure

This part is called ________________________.
It has three main parts:
a.__________________________________
b. __________________________________
c. __________________________________

This is a ________________________
It has also three main parts:
a __________________________________
b. __________________________________
c. __________________________________

This is also a ____________________________
And it has:
a.__________________________________
b.__________________________________
c. __________________________________

This is also a ____________________________
And it has:
a. __________________________________
b. __________________________________
c. __________________________________

This last part is called _____________________
Its two main elements are:
a.________________________
b.________________________

Each element of an Essay also has a specific purpose.

2. Fill out the blanks with the corresponding names of essay parts:

Essay Parts Parts 1
Eng 0812 (801)
Essay 1, draft 1
August 29th , 2012

Purpose of Academic Essay Elements

In the introduction, the purpose of the following parts is to:

a. Hook:

b. Context:

c. Thesis Statement:

In the body paragraphs, the purpose of the following parts is to:

a. Topic sentence:

b. Supporting Details:

c. Concluding sentence:

In the conclusion, the purpose of each part is to:

a. Summary of main points:

b. Restatement of thesis/thought provoking idea:

Handout 2: Introductions and Thesis Statements

Two types of introductions:

Type 1: For Essays about Specific Readings

a. Hook
b. Context of readings
c. Thesis

Type 2: For essays about a specific topic

a. Hook
b. Background about the topic
c. Issue or problem
d. Thesis

Type 1 Introduction

1. In the hook, introduce your topic in a way that will get the reader interested.
2. In the context, present title and authors of texts you will discuss, and briefly explain their main points.
3. Include your thesis in the last one or two sentences of the introduction. In the thesis indicate the main idea or points to be proven in the essay, in the same order that you will discuss them
   in the essay.

   Example:
   Child labor is a global issue. In developing countries all over the world, children work in factories manufacturing the products that the keep the economies of developed nations afloat. The treatment and welfare of these young workers is the subject of much controversy. In his book, Child Labor: What Fun, Bob Smith illustrates the exaggerated fears of those who oppose the rights of children to work. Child labor is actually beneficial to children because it allows them to gain valuable skills, support their families and build their self-esteem.

Type 2 Introduction

1. In the hook, introduce your topic in a way that will get the reader interested.
2. In the background, introduce background information about the topic you will discuss.
3. In the issue or problem, indicate the controversial or debatable part of the topic you will discuss
4. In the thesis, the last one to two sentences of the introduction, clearly state your position on the issue of the topic, and present ideas in the same order you will discuss them in the essay.

   Example:
   Irresponsible cell phone users are putting our lives at risk. Many of us have witnessed drivers so distracted by dialing and chatting that they resemble drunk drivers, weaving between lanes or nearly running down pedestrian in crosswalks. A number of bills to regulate the use of cell phones on the road have been introduced in state legislatures, but without much success. Regulation of cell phone use while

driving is necessary because drivers using phones are seriously impaired and because laws on negligent and reckless driving are not sufficient to punish offenders.

PRACTICE:

1. Look at the sample MLA introductions handout and label the different parts of an introduction. Compare your answers with your partner.
2. Look at the introductions in the sample diagnostic test essays and with a partner discuss which introduction is the best and why.

Handout 3: Thesis Statements

The **thesis statement** expresses the controlling idea around which the body paragraphs are organized. It must be an argument, and not simply a statement of fact. Most of the time, the thesis will be your response to the essay topic.

How to:

1. Include the thesis at the end of the introduction.
2. Make your thesis one to two sentences long.
3. Make sure it states a clear position on the topic.
4. The elements in the thesis should be presented in the same order that you will discuss them in the body paragraphs of your essay.

Example:
Essay Question: Write an essay in which you defend a position on the topic of Child Labor. Is it beneficial or harmful to the children?

Not a thesis – Child labor is controversial (Statement of a fact, not an argument).

Thesis - Child labor is actually good for children (an argument, but not specific).

Strong thesis – Child labor is actually beneficial to children because it allows them to gain valuable skills, support their families, and build their self-esteem (a clear, specific argument).

Give it a Try:
Essay Question: What do you think will be the most challenging class you will have this term and why?

A non-thesis:

A thesis that is not specific enough:

A strong thesis:

Discuss your answers with your partner.

Handout 4: Body Paragraphs

Body paragraphs require careful organization, logical order of ideas and coherence. Each body paragraph should focus on one single idea, and it should present evidence supporting this idea.

1. Begin your paragraph with an argumentative topic sentence (it can be debated)
2. Restate, or briefly explain the topic sentence.
3. Explain how and why your topic sentence is true. You can paraphrase information from the readings.
4. Introduce quotes and examples to support your explanation of the how and why.
5. Analyze the significance of the quotes or examples you provide.
6. Conclude the paragraph with a restatement of topic sentence.

Look at the sample paragraphs below written in Eng 0711 and Eng0812. Discuss whether or not the writers have considered all the steps listed above when writing these paragraphs.

Example 1: *Synthesis Argumentative*

The way people with different ethnic backgrounds are portrayed on TV negatively influences children. Young people can assume that everything they see on television is actually normal and acceptable, so when an inappropriate content such as discriminating jokes and stereotype is broadcasted on TV they believe what they see to be true. Children who spend their time in front of television can also assume that no one has social value but white people, who are frequently portrayed as "as rich, smart and well-educated" on TV programs. In his article, *"The Media's Image of Arabs"*, Jack G. Shaheen, an Arab-American writer who is against stereotype of Arabs, explains that he started his research about stereotype with television because "visual impressions from the tube indoctrinate the young. Once a stereotypical image becomes ingrained in a child's mind, it may never wither away" (391). This clearly shows how young people are prone to be influenced by the media, especially when it comes to stereotype. In the worst case scenario, due to the difficulty to undo the negative images of their minds, it can also generate an uncontrollable racism against minorities. Furthermore, a similar idea is supported by Marilyn Gardner in her article, *"Children Say Television Distorts Its Portrayal of Minorities"*. The writer has discussed about a research conducted by "Children Now" to find out about "children's perceptions of race and class in the media". According to the research results, Gardner has mentioned how media wrongly broadcasts people from different races, by pointing out that "Such stereotypes are far from harmless. White kids who said they're afraid of blacks and Latinos say it's from what they see in the media, not from experience" (1). This evidence shows how people are affected because their ethnic backgrounds are being wrongly and negatively portrayed on television. Thus, children can assume that all people act in the exact way as portrayed on TV. This kind of issue can also lead children to bully other minorities because of their ethnicity. In brief, children are easily persuaded by thoughts portrayed on TV, especially when it comes to stereotype.

Example 2: Argumentative Synthesis

The media's portrayal of male bodies through advertisements damages the body images of many men, but leaves others seemingly unaffected. Some men feel that they remain unaffected by the media's display of muscular and groomed men. Researchers Elliot and Elliot, and Bottamini and Ste-Marie find that men are sufficiently content with their own bodies despite exposure to the media's portrayal of male bodies. The eleven college-age males from Canada who participated in their research generally agreed that the media is "an exaggeration of what some males find to be ideal'' (Bottamini and Ste- Marie 17) and that attempting to look like the buff media images are almost always impossible. Contrastingly, other male body image researchers, such as Olivardia and Honigman and Castle, remain wary of the media's messages, which manifest themselves in toys and magazines. Olivardia specifies that one popular toy, the G.I .Joe action figure reflects new "muscular standards.'' G. I. Joe, he emphasizes, has become so muscular over the years that it is physically impossible for men to build proportional muscles (211). At the same time, attempting to find a reason behind the media's inconsistent influence, researchers Stella Chia and Nainan Wen believe that comparing oneself to the media hurts one's body image (545). Agreeing with Chia and Nainin, newspaper reporter Jocelyn Noleck concludes from a study of 184 college males, who were asked to increase the amount of television exposure, that watching more television leads to damaged body images (7), lending support to the negative influence of the media. These varying results show that it is difficult to exactly understand the influence of the media on men's body images. Although there are some men who are unharmed by the media's barrage of idealized male bodies, there are many who are hurt and feel worse about their own bodies after media exposure.

Handout 5: Supporting Evidence

Supporting evidence, or supporting details, can include direct quotes, paraphrases, or examples. These quotes, paraphrases, or examples should always be analyzed.

Direct Quotes:

Use a quote when you want to use words or sentences from a text exactly as they appear in the original text. The symbols " …." are used to indicate when a quote begins and ends.

How to:

1. Read the assigned article(s), make sure you understand it clearly. Choose parts that will have a strong impact.
2. Begin with a signal phrase.
3. Introduce the appropriate context (situation, speaker).
4. Introduce the quote in quotation marks
5. Introduce the proper citation in brackets (…) and at the end of the quote.
6. Introduce the proper punctuation mark after the brackets: (5).
7. Introduce your analysis of the quote explaining to the reader how the quote is relevant to the idea you are trying to prove.

Example: Bad Quote.

First of all, the media encourages young people to behave aggressively. The media inspire the children to learn to act dishonestly beyond the reach of parents' sight. TVs and other mediums has become a tool for young children to learn to threaten others**.** "the federal commission has decided to restrict children's commercial on TV in 1982." When children watch the commercials they………..

With your partner, discuss why this is an example of a bad quote.

Example of Good Quotes and Exercise: With different colors highlight the different part needed to include a quotation. Label each part with a number from 2 to 7 as indicated above.

1. This is definitely one of the negative influences on the society as there will be many people like her who believe what advertisement claims is true and end up having problems because of the product. In his article, Weasel Words, Lutz stresses his opinion towards the influence of advertisement on the society saying that "before you dismiss all this concern over such a small word, remember that small words can have big consequences" (401). This implies that he thinks everything said in advertisements definitely affects people's thoughts and can cause serious issues. Similarly,………..

2. Javier O"Malley, a factory worker in India who became a manager points out, " I have been working on the factory floor since I was nine. I"ve spent half my life with these machines" (Smith 123).

3. By looking at so many violent programs children become more aggressive in their relations with others. John Meirs, author of *Violence and Media,* provides support for this idea asserting "on the TV violence is used as a socially appropriate way to resolve conflicts" (234). This quote suggests that children who do not yet have a clear idea of what is right and wrong will be more inclined to imitate the violent and aggressive behaviors they see on TV.

Handout 6: Paraphrasing

What is a paraphrase?

- Using your own words to convey another person's ideas.
- Preserving the essential meaning of an original source by rephrasing or rewording a statement.

Why should a writer paraphrase supporting material?

- To demonstrate understanding of the original source
- To clarify the connection between your claim and the supporting material
- To shorten or clarify the original source
- To avoid plagiarizing.

Paraphrases should be used much more frequently in position papers than quotations to accomplish the purposes listed above.

How is a paraphrase written?

- To avoid plagiarizing, put the original away when you write the paraphrase.
- Change the words and phrases of the original quotation.
- Change the word order of the original quotation.
- Retain the essential meaning of the original source. Paraphrases must include a citation (author & date in the text) that gives credit to the source from which you borrowed the idea.

The example below illustrates the difference between a good and bad paraphrase.

Original Quotation: "According to our survey, 30 percent of students agreed that the university should offer a money-back guarantee if students fail to get the job they really want in their field. Another 65 percent felt students should pay the university double if they fail to get all A's in their coursework, volunteer to work in at least two student organizations, and volunteer in the community, all while holding down a 20-hour week job. A small percent of students were rejected from the survey results for their suggestion that the survey was nonsensical" - Abrams, 1998, p. 45.

Bad Paraphrase: 30% of the students surveyed said that the university should give a money-back guarantee if they did not get the job they want. While 65% said that students ought to pay double when they did not get all A's, volunteer, and hold down a job for 20 hours a week. A small percentage felt the survey didn't make any sense (Abrams 45)

This is a bad paraphrase because it substitutes a few words or phrases with synonyms but the sentence structure remains the same and several words and phrases are used from the original without including quotation marks.

Good Paraphrase: Abrams claims that about two-thirds of students believed the burden of education should be on themselves. They set the standards at straight-A grades, involvement on-campus and the community, and working at least 20 hours a week. But almost one-third of students surveyed felt they should get their money back from the university if they could not get a desirable job. The results excluded a small group of respondents who felt the survey was invalid (Abrams 45).

This is a good paraphrase because it retains the original meaning but does not use the words, phrases, or word order of the original.

Original text 2:
The automotive industry has not shown good judgment in designing automotive features that distract drivers. A classic example is the use of a touch-sensitive screen to replace all the controls for radios, tape/CD players, and heating/cooling. Although interesting technology, such devises require that the driver take his eyes off the road. – Tom Magliozzi and Ray Magliozzi.

Bad paraphrase:
Radio shows hosts Tom and Ray Magliozzi argue that the <u>automotive industry has not</u> demonstrated <u>good judgment in</u> devising car <u>features that distract drivers.</u> One feature is <u>a touch-sensitive screen</u> that replaces <u>controls for radios, tape/CD players, and heating/cooling.</u> Although the technology is interesting, <u>such devises require that</u> a driver look away from the road (3).
Good Paraphrase:
Radio show hosts Tom and Ray Magliozzi claim that motor vehicle manufacturers do not always desing features with safety in mind. For Example, when designers replaced radio, CD player, and temperature control knobs with touch-sensitive panels, they were forgetting one thing: To use panels, drivers would need to take their eyes off the road. (3)
You should cite the source every time you paraphrase someone else's ideas. To avoid plagiarism, resist the temptation to look at the source while you are paraphrasing. Use the notes in your synthesis chart instead.

Handout 7: Persuasive Essays

A persuasive essay is like an imaginary dialogue between a reader and the writer. The writer uses arguments to try to convince the reader to think something or to take a certain action. But the writer also has to imagine how the reader will argue against his or her arguments.
For this reason, persuasive essays usually have a counter-argument, and a rebuttal or argument.

What is a Counter Argument?
A counter-argument is an argument opposed to your thesis. It expresses the view of a person who disagrees with your position (Oldham).

Where Do I Put a Counter-Argument?

Counter-argument can appear anywhere in the essay, but it most commonly appears:

1. **At the beginning** of, or **within, a paragraph**, where you imagine a counter-argument.
2. as a **section or paragraph just before the conclusion** of your essay, in which you imagine what someone might object to what you have argued (Harvey)

When the counterargument is used within a paragraph, the structure of the paragraph is quite unique. First, the writer expresses a reader's likely response (a counterargument) to the argument that will follow. Then, the writer presents the argument, or rebuttal, and its support.

Counterargument →
Argument →
Support for Argument →

> Xxxxxxxxxxxxxxxxxxxxxxxx.Xxxxxxxxx
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxx.Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.Xx
> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> xxxxxxxxxxxxxxxxxxxxxxxxxx. Xxxxx
> "xxxxxxxxxxx xxxxxx xxxxxxxxx" (xxx
> 4). Xxxxxxxxxxxx, xxxxxxxxxxx

When the counterargument is a paragraph just before the conclusion of your essay, your essay will look something like this

Introduction
First argument in supporting your position
Second argument supporting your position
Third argument supporting your position
Counter-argument
Conclusion

Language for Introducing Counterarguments and Arguments (Rebuttal)

1. When you can think of the opposing opinion but you have not seen it written anywhere:

It	may be	argued	that………	However, ……
		asserted		
	could be	contended		
		maintained		
	might be	claimed		
		said		

2. When you have seen the opposing opinion written in another text:

It	has been/is	argued	that …..	However, …..
		asserted		
		contended		
		maintained		
		claimed		
		said		

Other expressions:

Counterarguments	*Argument or rebuttal*
Some people believe that ………………	However, it must also be recognized……
While it is true that…………………………	It can also be argued that…………
Although many people claim that ……………	one can also argue that …………

Other Ways:

1) **Quote acknowledged experts** that support your position

- While many may see this argument as flawed, __________author, an expert in his field, also finds_______.

2) **Find agreement** and showing how your **new idea supports your shared idea**

- I agree with X that _________. Furthermore, this idea actually supports my point because _________.

3) Pointing out **faulty assumptions in your critic's arguments** where:

- the **facts** are wrong

  Proponents of X are right to argue that _________. But they exaggerate when they claim that _________.

A Sample Persuasive Paragraph:

Although some readers may believe that medical end-of-life decisions on patient consent may lead to abuse, since many terminally ill patients are depressed, and therefore, unable to make sound decisions on matters of such significance *(Here the author is imagining a skeptical reader to introduce a counter-argument and stating this reader's case)*.**While it is true that** such patients may have a greater tendency to depression**, we cannot justifiably assume** all patients are depressed, or that depression, even when present, prevents a patient from consenting in a balanced and acceptable way (*Next, the author is rebutting the counter argument by pointing out faulty analysis in the counter-argument*). Depression is generally manageable nowadays, and medical diagnosis can determine when a person is incapable of making such a decision. The issue of depression, therefore, should be dealt with on a case-by-case basis, and not be a reason for prohibiting choice in general (*Finally, the author is suggesting why, on balance, this counter-argument is less likely than what s/he proposes, and thus, doesn't overturn it*).

Works Cited

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Oldham, Davis. "ENG 101 - What Is a Counter-Argument." *Shoreline Community College*. Web. 10 Nov. 2010. <http://www.shoreline.edu/doldham/101/HTML/What is a C-A.htm>.

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APPENDIX E
ESSAY SCORING RUBRIC USED IN THE INTRODUCTORY AND REGULAR COURSES

Name: ____ Essay #:____

Criteria	Unsatisfactory 1.0 – 6.9	Satisfactory 7.0 -7.9	Good 8.0 – 8.9	Excellent 9.0 -10.0	%
			CONTENT (40%)		
Require-ments and quality of content	__ Does not meet essay requirements. __ Superficial discussion of the topic. __ Reflects poor understanding of readings.	__ Partially meets essay requirements __ Fair discussion of the topic. __ Reflects fair understanding of readings.	__ Fully meets the essay requirements __ Good discussion of the topic. __ Reflects good understanding of readings.	__ Fully meets the essay requirements. __ Excellent discussion of the topic. __ Reflects excellent understanding of readings.	
			ORGANIZATION (30%)		
Intro-duction	__ Does not include all required elements. __ Context, or background information, is unclear, or not accurate. __ Fails to lead to the thesis. __ Fails to engage the reader. __ Thesis is vague, weak, or missing.	__ Includes all required elements. __ Context, or background information is accurate, but still weak. __ Partially leads to the thesis. __ Attempts to engage the reader, but lacks focus. __ Thesis presents a plausible argument, but it's unclear/or unfocused.	__ Includes all required elements. __ Context, or background information is accurate, and focused. __ Leads clearly to the thesis. __ Engages the reader fairly well. __ Thesis presents a thoughtful argument that reflects the essay's focus.	__ Includes all required elements. __ Context, or background information, is smooth and clear. __ Leads naturally and smoothly to the thesis. __ Effectively engages the reader. __ Thesis presents an original, complex, and sophisticated argument.	
Topic sentences	__ Unclear, or missing. __ Do not connect to thesis. __ Do not present a debatable point –factual.	__ Introduce main idea of the paragraph, but may lack focus, or clarity. __Connection to thesis is inconsistent. __ Inconsistently present debatable point.	__ Generally clear and introduce the main idea of the paragraph. __ Connection to thesis is clear and logical. __ Present a debatable point.	__ Clearly and concisely introduce the main idea of the paragraph. __ Connection to thesis is always clear and logical. __ Present a sophisticated debatable point.	
Paragraph organi-zation and support details	__ Do not explain topic sentence. __ Not presented in a logical order __ Lack focus; do not match topic sentence. __ Lack coherence. __ Evidence is limited, or vague. __ Ideas are not well- developed. __ Paragraphs are underdeveloped. __ Argument is not proven.	__ Topic sentences are not clearly, or consistently explained. __ Inconsistent focus. __ Inconsistent logical order. __ Inconsistently coherent. __ Quality of evidence is inconsistent __ Inconsistent development of ideas. __ Inconsistent development of paragraphs. __ Argument is proven inconsistently.	__Topic sentences are fairly well explained. __ Good focus. __ Ideas are presented in logical order. __ Ideas are presented coherently __ Good evidence in all paragraphs. __ Good development of ideas. __ Paragraphs are well-developed. __ Argument is proven in all paragraphs.	__ Topic sentences are all clearly explained. __ Excellent focus. __ Ideas flow naturally in a logical order. __ Evidence is relevant and compelling. __ Excellent development of ideas. __ Excellent paragraph development. __ Argument is successfully proven.	
Conclude Sentences	__ Concluding sentences are unclear, or missing. __ Do not restate main idea of paragraph.	__ Inconsistent inclusion of concluding sentences. __ Restate main idea of paragraph, but may lack focus/clarity.	__ All paragraphs have a clear concluding sentence. __ Most concluding sentences wrap up the main idea of the paragraph.	__Concluding sentences are clear. __ They effectively wrap up the main point of the paragraph.	

Conclu-sion	__ Missing, changes topic, or is underdeveloped.	__ Present but lacks focus, or just repeats previous statements.	__ Clearly restates the thesis, and wraps up argument, but uses new language and shows some understanding of the big picture.	__Effectively restates thesis, wraps up the arguments, offers meaningful insights and leaves the reader wanting more. .	
Criteria	**Unsatisfactory 1.0 – 6.9**	**Satisfactory 7.0 -7.9**	**Good 8.0 – 8.9**	**Excellent 9.0 -10.0**	%
			MLA FORMAT (5%)		
Evidence and Works Cited Page	__ Does not meet MLA format Requirement: a) personal information, b) page number, c) font, size and spacing, d) length. __ Context for quotes is unclear, or missing. __ Quotes are not well integrated (floating quotes). __ Analysis of quotes, or evidence, is inaccurate, repetitive, or not related to quote. __ Citation for quotes and/or paraphrases is missing, or not accurate. __ Works Cited is not properly formatted and/or missing information.	__ Partially meets MLA format requirement: a) personal information, b) page number, c) font, size and spacing, d) length. __ Inconsistent inclusion of context. . __ Quotes are not consistently well-integrated. __ Analysis of quotes is still weak, and/or not consistently included. __ Citation for quotes and/or paraphrases are inconsistently accurate, and/or present __ Works Cited page follows general format but may be missing information, or include several errors.	__ Partially meets MLA format requirement: a) personal information, b) page number, c) font, size and spacing, d) length. __ Good context for quotes is always included. __ Quotes are not consistently well-integrated __ Analysis of quotes is good and included in all paragraphs. __ Citation for quotes and/or paraphrases are accurately included in all paragraphs __ Works Cited is properly Formatted. includes all necessary information with few errors.	__ Meets all MLA format requirement: a) personal information, b) page number, c) font, size and spacing, d) length. __ Excellent context for quotes is always included. __ Quotes are smoothly integrated __ Meaningful and insightful analysis of quotes is included in all paragraphs. __ Citation for quotes and/or paraphrases are accurately included in all paragraphs. __ Works Cited is properly formatted, includes all necessary information with minor, or no errors.	
			LANGUAGE AND MECHANICS (20%)		
Grammar Punctuation and sentence structure.	__ Numerous and/or major grammatical errors that hinder understanding __ Inadequate use of transitions, frequent word misuse, and lack of sentence variety.	__Grammatical errors present, but do not hinder understanding. __Limited use of transitions, word choice and sentence variety (writing is choppy)	__ Few grammatical errors. __ Effective use of transitions, word choice, and a variety of sentence structure.	__Grammatical errors are minor or non-existent. __Sophisticated use of transitional devices, effective wording, and varied sentence structure.	
			REVISION (5%)		
Improvement across drafts	__ Minimum, or no revision in terms of content and grammar. __ Minimum or no effect on quality of essay __ No improvement across drafts	__Inconsistent revision. revised some areas, but neglected other areas. __ Inconsistent and/or partial Improvement across drafts.	__ Extensive and consistent revision in most areas. __ Good and consistent improvement across drafts.	__ Extensive and consistent revision in all areas. __ Substantial improvement across drafts.	
Penalties	Overdue (- 5 pts per class day) _______	Not meeting length requirements (-5 to 10 points from total) ________			
Points	Calculation:	Total points: ____________/ _____________	Proportion: ______________	Grade: _____________________	

Comments:

APPENDIX F
INFORMED CONSENT FORM

For the next three months, your instructor will be asking you to answer several questionnaires in class. The purpose of the questionnaires is to gather data to conduct a research study on the influence of self-regulation, self-efficacy and goal achievement on the writing attainment of ESL students enrolled in First Year Writing Program classes at this university. Professor Ada Angel, Eng0812 instructor, is the principal investigator.

The purpose of the research is to gain a better understanding of the factors that influence ESL students' success in university level writing courses in English only speaking environments.

Throughout the term, you will be asked to respond to seven surveys and to complete reflection questionnaires about your approaches to writing outlines and drafts for essay 1 and for your last essay. If given your permission to do so, I will use the responses in your questionnaires to run several different kinds of statistical analysis that will allow me to explore relationships between your approaches and the grades you obtain for each of the essays you complete this term.

There are no risks to allowing me to use your responses in this research. All your questionnaires will be kept confidential and will only be read by me. In the questionnaires, you will be asked to enter your name or ID number. This is required for tracking purposes only, and when your data is entered in the statistical programs, you will be given an ID number such as St01, St02, or St03 (St = student) to protect your identity.

In addition to providing valuable data for my research, and contributing to research in second-language writing, answering some of the questionnaires will allow you to become more aware of yourself as a writer, and to learn a great number of strategies that you can use when writing your essay, which, in turn will enable you to become a more autonomous writer.

This research has been reviewed and approved by the Temple University, Japan Campus research committee. You can contact them at tujresearch@tuj.temple.edu for any questions, concerns, or complaints about the research; questions about your rights; to obtain information; or to offer input. By signing this form below, you will be granting Professor Angel permission to use your responses in her research study.

Your name in print: ____________________Your Signature: __________________

Principal Investigator name: Ada Angel PI signature: ____________________

Date: ____________________________

APPENDIX G
CLASS QUESTIONNAIRE

Section 1: Background Information

1. Name:	
2. Gender:	1. Male: ______ 2. Female: ______
3. Native Language:	*Choose ONLY one.* 1. English: ______ 2. Japanese: ______ 3. Other: ______
4. Type of High School Attended:	1. Japanese High School: ______ 2. International School: ______ 3. Both: Japanese and International School: ______ 4. Other: ________________________
5. Have you taken any English proficiency exams?	1. TOEFL: ______ (*check, if applicable*) 1.1 TOEFL Score: ______ 1.2 TOEFL Type: PBT: ____ 2. CBT: ____ 3. iBT: ____ 1.3 Scores by Section: Listening: ______ Writing: ______ Structure: ______ Speaking: ______ Reading: ______ 2. IELTS: ______ (*check, if applicable*) 2.1 IELTS Score: ______ 2.2 Scores by Section: Listening: ______ Writing: ______ Speaking: ______ Reading: ______
6. Have you taken academic writing courses before?	1. Yes: ______ 2. No: ______ If yes, check the courses you have taken: AEP writing courses:_______ Bridge 0711: _______ UG 0711: _______ Eng0812: _______ Other: ________ Specify:___________________
7. What was your TUJ placement test score?	7. English test: ______ 7.1 Essay test: ______

8. Do you have a part- time job this term?	1. Yes: ____ 2. No: ____ 8.1 How many hours a week do you work? 1. About 1 to 5 hours ______ 2. About 5 to 10 hours ______ 3. About 10 to 15 hours ______ 4. About 15 to 20 hours ______ 5. More than 20 hours ______
9. How many courses are you taking this term?	Number of courses: ______ 9.1 Which courses? 1_____________________ 2 _____________________ 3 _____________________ 4 _____________________
10. What is your current university status?	1. Freshman: ______ 2. Sophomore: ______ 3. Junior: ______ 4. Senior: ______

11. How would you rate *your skills* in the following areas?

Areas/skills	Poor	Fair	Average	Good	Excellent
11. Reading skills.					
11.1 Vocabulary skills.					
11.2 Grammar skills.					
11.3 Analytical skills.					
11.4 Academic writing skills.					
11.5 Time management skills.					

12. What areas do you want to improve this term?

Grammar _______ Organization_______ Logical Order ______
Coherence _______ Vocabulary_______ MLA_______
Self-Evaluation _______ Revision _______

13. In terms of grade, which statement below best reflects your grade goal for this term? Check ONLY one statement.

1. Pass the class with an excellent grade (A- to A)	
2. Pass the class with a good grade (B- to B+)	
3. Pass the class with a fair grade (C to C+)	
4. Pass the class even if it is with the lowest passing grade (C-)	
Why? Explain your choice:	

14. Why will you do the required work in this class? Rate the statements below using the scale provided.

1. Not at all Important
2. Slightly Important
3. Important
4. Very Important

	Not important	Slightly important	Important	Very important
1. Outline				
2. Draft 1				
3. Draft 2				
4. Final Draft				

APPENDIX H
WRITING SELF-EFFICACY SURVEY

1. Not confident at all
2. Slightly confident
3. Somewhat confident
4. Confident
5. Very Confident

Section 1: Sentence-Writing Self-Efficacy

1. I can write sentences using parts of speech correctly.
2. I can write simple sentences with proper punctuation.
3. I can write simple sentences that are grammatically correct.
4. I can write complex sentences with proper punctuation.
5. I can write grammatically complex sentences that are grammatically correct.

Section 2: Paragraph-Writing Self-Efficacy

6. I can write a paragraph with a strong topic sentence.
7. I can write a paragraph in which all the ideas are well connected.
8. I can write a paragraph that is well focused.
9. I can write a paragraph with properly cited quotes.
10. I can write a paragraph combining ideas from different sources.
11. I can write a paragraph that smoothly integrates quotes.
12. I can write a paragraph that includes meaningful analysis of quotes.
13. I can write a paragraph with a good concluding sentence.
14. I can write a paragraph that includes relevant evidence.

Section 3: Essay-Part Writing Self-Efficacy

15. I can write an essay with an engaging introduction.
16. I can write an essay with a strong thesis.
17. I can write an essay with a powerful conclusion.
18. I can write an essay using the proper academic tone.
19. I can write an essay with a properly formatted Works Cited page.
20. I can write an essay that is well focused. **

Section 4: Essay-Type Writing Self-Efficacy

21. I can write a good critique essay.
22. I can write a good synthesis essay.
23. I can write a good argumentation essay.

Section 5: Discrete Level Self-Assessment Self-Efficacy

24. I can identify grammatically incorrect simple sentences in my essay.
25. I can identify grammatically incorrect complex sentences in my essay.
26. I can identify punctuation problems in my essay.
27. I can tell when ideas in my essay are not in logical order.
28. I can tell when ideas in my essay are not well connected.
29. I can identify irrelevant ideas in my essays.

30. I can tell when the introduction of my essay is not engaging.
31. I can tell when the topic sentences of my essay are weak.
32. I can tell when the thesis of my essay is weak.
33. I can identify weak concluding sentences in my essay.
34. I can tell when the conclusion of my essay is not effective.

Section 6: General Level Self-Assessment Self-Efficacy

35. I can accurately assess the quality of my essay.
36. I can accurately assess the organization of my essay.
37. I can tell when the tone of my essay is not academic.
38. I can tell if my essay provides a superficial discussion of the topic.

Section 7: Revision Self-Efficacy

39. When revising my essay, I can effectively improve grammar problems.
40. When revising my essay, I can effectively improve problems with punctuation.
41. When revising my essay, I can effectively improve problems with topic sentences.
42. When revising my essay, I can effectively improve problems with coherence.
43. When revising my essay, I can effectively improve problems with focus.
44. When revising my essay, I can effectively improve problems with analysis of quotes.
45. When revising my essay, I can effectively improve problems with integration of quotes.
46. When revising my essay, I can effectively improve problems with concluding sentences.
47. When revising my essay, I can effectively improve problems with the quality of my essays
48. When revising my essay, I can effectively improve problems with depth of analysis.
49. When revising my essay, I can effectively improve problems with overall organization.
50. When revising my essay, I can effectively improve problems with logical order.**

** New items added after validation and Rasch assessment of survey.

APPENDIX I
OUTLINE STRATEGY USE QUESTIONNAIRE

SECTION 1: Before Writing Your Outline

1. Did you do anything to make sure you understood the essay requirements well?

Yes *No*

1. I talked to my friends about it.
2. I asked my classmates for help.
3. I asked my teacher for help.
4. I asked a tutor in the TLC for help.
5. I reviewed the readings by myself.
6. I reviewed the essay prompt.
7. I reviewed all relevant handouts by myself.
8. I reviewed the ARS.
9. I joined a study group.
10. Other:

2. Before writing, did you do anything to make writing the outline less difficult, and more interesting to you?

Yes *No*

1. I asked myself whether it would be easy or difficult to complete the outline.
2. I spent time talking to my friends about my ideas for the outline.
3. I discussed my ideas with the teacher.
4. I envisioned/visualize the shape of my outline.
5. I made a plan to work on different parts of the outline on different days.
6. I checked my schedule and found the best times to write the outline.
7. I made a plan to write at a time when I can concentrate.
8. I made sure I had a quiet place away from distractions to work on the outline.
9. I made sure my working space was comfortable.
10. Other:

3. How did you get yourself to begin writing the outline?

Yes *No*

1. I told myself that a good outline is important to write a good essay.
2. I reminded myself that the points I get on the outline count towards my final grade.
3. I promised myself a reward after I finished writing the outline.
4. I thought about the consequences if I did not begin writing it.
5. I reminded myself of my grade goal for the class.
6. I told myself "you can do it."
7. I waited till the last day so I could feel pressured by the deadline.
8. I reminded myself of my grade goal for this essay.
9. Other:

SECTION 2: While Writing Your Outline

4. While writing the outline did you do any of the following?

Yes *No*

1. As I wrote, I relied on my knowledge about the different parts of an essay and their purpose.
2. As I wrote, I verbalized (say it aloud) what I know about the different parts of an essay and their purpose.
3. I paused to read what I had written to make sure it was grammatically correct.
4. I paused to read what I had written to make sure ideas were related.
5. I paused to read what I had written to make sure ideas were relevant to the point I was trying to prove.
6. I paused to read what I had written to make sure I was not repeating myself.
7. As I wrote, I paused to check the meaning of words in the dictionary before using them in my sentences.
8. I paused to read what I had written to make sure I was paraphrasing and not plagiarizing ideas.
9. When selecting relevant quotes, I paused to read what I had written to make sure the quote was related to the ideas.
10. As I wrote the supporting details, I looked back at the topic sentences to make sure my paragraphs were focused.
11. As I wrote, I paused to think about the best way to express my ideas.
12. As I wrote, I kept changing my sentences until I felt satisfied with what I had written.
13. As I wrote, I reminded myself of the purpose of this essay.
14. As I wrote, I reminded myself to write for an audience not familiar with the topic.
15. Other:

5. While writing your outline did you adjust your working environment in any way?

Yes *No*

1. I listened to my favorite music to help me concentrate.
2. I put my telephone away so I could avoid interruptions.
3. I answered my phone whenever I got a call, text or email.
4. I had all the relevant materials close to me.
5. I was in a quiet place away from distractions.
6. Other:

6. When you were confused about something while writing your outline, what did you do?

Yes *No*

1. I emailed my teacher and asked for help.
2. I called, emailed, or texted my friend and asked for help.
3. I made a memo so I could ask someone afterwards
4. I just ignored it and continue writing.
5. I tried to find a solution by myself.
6. Other:

7. When you felt you were losing concentration, energy, or motivation, what did you do to get yourself to continue writing till you completed your outline, or your goal for the day?

Yes *No*

1. I told myself I could rest after I had finished.
2. I took a break.
3. I promised myself a reward.
4. I reminded myself that outline points count towards my grade.
5. I stopped to drink energy drinks or eat something.
6. I reminded myself that this was something I had to do.
7. I thought of the consequences if I did not persevere.
8. I told myself this was a good opportunity to improve my writing skills.
9. I kept writing without worrying much about the quality of the outline.
10. I told myself "you can do it."
11. I gave up and stopped writing.
12. Other:

SECTION 3: After Writing Your Outline

8. When you completed the outline did you assess your writing in any way?

Yes *No*

1. I quickly read what I had written.
2. I quickly read what I had written and revised problems that were obvious.
3. I carefully read the outline, marked all the problems I found and revised them.
4. I read the outline aloud to help me find mistakes.
5. I asked someone to check the outline for me.
6. I let the outline sit for some time, then I read it and revised problems I found.
7. I asked myself if the outline met the requirements.
8. I only saved or printed a copy without reading or revising anything.
9. I told myself "Well done" or "Be proud."
10. I told myself "Next time you will do a better job"
11. I felt satisfied with what I had written.
12. I felt happy to have completed the assignment, even if the quality was poor.
13. Other:

9. How did you manage to complete your outline by the due date?

Yes *No*

1. I stayed up all night till I completed it.
2. I spent most of the day before the deadline writing it.
3. I wrote different parts on different days.
4. I could not complete the deadline.
5. I carefully planned the time I had available.
6. Other:

APPENDIX J
DRAFT 1 STRATEGY USE QUESTIONNAIRE

SECTION 1: Before Writing Draft 1

1. Did you do anything to make sure you understood essay requirements, readings and comments well?

	Yes	*No*
1. I talked to my friends about it.		
2. I asked my classmates for help.		
3. I asked my teacher for help.		
4. I asked a tutor in the TLC for help.		
5. I reviewed the readings by myself.		
6. I reviewed the essay prompt.		
7. I reviewed all relevant handouts by myself.		
8. I reviewed the ARS.		
9. I joined a study group.		
10. Other:		

2. Before writing, did you do anything to make writing Draft 1 less difficult, and more interesting to you?

	Yes	*No*
1. I asked myself whether it would be easy or difficult to complete the draft.		
2. I spend time talking to my friends about my ideas for the draft.		
3. I discussed my ideas with the teacher.		
4. I envisioned/visualized the shape of my draft.		
5. I made a plan to work on different parts of the draft on different days.		
6. I checked my schedule and found the best times to write the draft.		
7. I made a plan to write at a time when I can concentrate.		
8. I made sure I had a quiet place away from distractions to work on the draft.		
9. I made sure my working space was comfortable.		
10. Other:		

3. How did your get yourself to begin writing Draft 1?

	Yes	*No*
1. I told myself that a good draft 1 is important to write a good essay.		
2. I reminded myself that the points I get on draft 1 count towards my final grade.		
3. I promised myself a reward after I finished writing the draft.		
4. I thought about the consequences if I did not begin writing it.		
5. I reminded myself of my grade goal for the class.		
6. I told myself "you can do it."		
7. I waited till the last day so I could feel pressured by the deadline.		
8. I reminded myself of my grade goal for this essay.		
9. Other:		

SECTION 2: While Writing Draft 1

4. While writing Draft 1 did you do any of the following?

Yes *No*

1. As I wrote, I relied on my knowledge about the different parts of an essay and their purpose.
2. As I wrote, I verbalized (say it aloud) what I know about the different parts of an essay and their purpose.
3. I paused to read what I had written to make sure it was grammatically correct.
4. I paused to read what I had written to make sure ideas were related.
5. I paused to read what I had written to make sure ideas were relevant to the point I was trying to prove.
6. I paused to read what I had written to make sure I was not repeating myself.
7. As I wrote, I paused to check the meaning of words in the dictionary before using them in my sentences.
8. I paused to read what I had written to make sure I was paraphrasing and not plagiarizing ideas.
9. When selecting relevant quotes, I paused to read what I had written to make sure the quote was related to the ideas.
10. As I wrote the supporting details, I looked back at the topic sentences to make sure my paragraphs were focused.
11. As I wrote, I paused to think about the best way to express my ideas.
12. As I wrote, I kept changing my sentences until I felt satisfied with what I had written.
13. As I wrote, I reminded myself of the purpose of this essay.
14. As I wrote, I reminded myself to write for an audience not familiar with the topic.
15. Other:

5. While writing Draft 1 did you adjust your working environment in any way?

Yes *No*

1. I listened to my favorite music to help me concentrate.
2. I put my telephone away so I could avoid interruptions.
3. I answered my phone whenever I got a call, text or email.
4. I had all the relevant materials close to me.
5. I was in a quiet place away from distractions.
6. Other:

6. When you were confused about something while writing Draft 1, what did you do?

Yes *No*

1. I emailed my teacher and asked for help.
2. I called, emailed, or texted my friend and asked for help.
3. I made a memo so I could ask someone afterwards.
4. I just ignored it and continue writing.
5. I tried to find a solution by myself.
6. Other:

7. When you felt you were losing concentration, energy, or motivation, what did you do to get yourself to continue writing till you completed your Draft 1, or your

goal for the day?

Yes No

1. I told myself I could rest after I had finished.
2. I took a break.
3. I promised myself a reward.
4. I reminded myself that draft 1 points counts towards my grade.
5. I stopped to drink energy drinks or eat something.
6. I reminded myself that this was something I had to do.
7. I thought of the consequences if I did not persevere.
8. I told myself this was a good opportunity to improve my writing skills.
9. I kept writing without worrying much about the quality of the draft.
10. I told myself "you can do it."
11. I gave up and stopped writing.
12. Other:

SECTION 3: After Writing Your Draft 1

8. When you completed Draft 1 did you do assess your writing in any way?

Yes No

1. I quickly read what I had written.
2. I quickly read what I had written and revised problems that were obvious.
3. I carefully read the draft, marked all the problems I found and revised them.
4. I read the draft aloud to help me find mistakes.
5. I asked someone to check the draft for me.
6. I let the draft sit for some time, then I read it and revised problems I found.
7. I asked myself if the draft met the requirements.
8. I only saved or printed a copy without reading or revising anything.
9. I told myself "Well done" or "Be proud."
10. I told myself "Next time you will do a better job."
11. I felt satisfied with what I had written.
12. I felt happy to have completed the assignment, even if the quality was poor.
13. Other:

9. How did you manage to complete Draft 1 by the due date?

Yes No

1. I stayed up all night till I completed it.
2. I spent most of the day before the deadline writing it.
3. I wrote different parts on different days.
4. I could not complete it by the deadline.
5. I carefully planned the time I had available.
6. Other:

APPENDIX K
DRAFT 2 STRATEGY USE QUESTIONNAIRE

SECTION 1: Before Writing Draft 2

1. Did you do anything to make sure you understood essay requirements, readings and comments well?

Yes *No*

1. I talked to my friends about it.
2. I asked my classmates for help.
3. I asked my teacher for help.
4. I asked a tutor in the TLC for help.
5. I reviewed the readings by myself.
6. I reviewed the essay prompt.
7. I reviewed all relevant handouts by myself.
8. I reviewed the ARS.
9. I joined a study group.
10. Other:

2. Before writing, did you do anything to make writing Draft 2 less difficult, and more interesting to you?

Yes *No*

1. I asked myself whether it would be easy or difficult to complete the draft.
2. I spent time talking to my friends about my ideas for the draft.
3. I discussed my ideas with the teacher.
4. I envisioned/visualize the shape of my draft.
5. I made a plan to work on different parts of the draft on different days.
6. I checked my schedule and found the best times to write the draft
7. I made a plan to write at a time when I can concentrate.
8. I made sure I had a quiet place away from distractions to work on the outline.
9. I made sure my working space was comfortable.
10. Other:

3. How did your get yourself to begin writing Draft 2?

Yes *No*

1. I told myself that a good draft 2 is important to write a good essay.
2. I reminded myself that the points I get on draft 2 count towards my final grade.
3. I promised myself a reward after I finished writing the draft.
4. I thought about the consequences if I did not begin writing it.
5. I reminded myself of my grade goal for the class.
6. I told myself "you can do it."
7. I waited till the last day so I could feel pressured by the deadline.
8. I reminded myself of my grade goal for this essay.
9. Other:

SECTION 2: While Writing Draft 2

4. While writing Draft 2 did you do any of the following?

Yes *No*

1. As I wrote, I relied on my knowledge about the different parts of an essay and their purpose.
2. As I wrote, I verbalized (say it aloud) what I know about the different parts of an essay and their purpose.
3. I paused to read what I had written to make sure it was grammatically correct.
4. I paused to read what I had written to make sure ideas were related.
5. I paused to read what I had written to make sure ideas were relevant to the point I was trying to prove.
6. I paused to read what I had written to make sure I was not repeating myself.
7. As I wrote, I paused to check the meaning of words in the dictionary before using them in my sentences.
8. I paused to read what I had written to make sure I was paraphrasing and not plagiarizing ideas.
9. When selecting relevant quotes, I paused to read what I had written to make sure the quote was related to the ideas.
10. As I wrote the supporting details, I looked back at the topic sentences to make sure my paragraphs were focused.
11. As I wrote, I paused to think about the best way to express my ideas.
12. As I wrote, I kept changing my sentences until I felt satisfied with what I had written.
13. As I wrote, I reminded myself of the purpose of this essay.
14. As I wrote, I reminded myself to write for an audience not familiar with the topic.
15. Other:

5. While writing Draft 2 did you adjust your working environment in any way?

Yes *No*

1. I listened to my favorite music to help me concentrate.
2. I put my telephone away so I could avoid interruptions.
3. I answered my phone whenever I got a call, text or email.
4. I had all the relevant materials close to me.
5. I was in a quiet place away from distractions.
6. Other:

6. When you were confused about something while writing Draft 2, what did you do?

Yes *No*

1. I emailed my teacher and asked for help.
2. I called, emailed, or texted my friend and asked for help.
3. I made a memo so I could ask someone afterwards.
4. I just ignored it and continue writing.
5. I tried to find a solution by myself.
6. Other:

7. When you felt you were losing concentration, energy, or motivation, what did you do to get yourself to continue writing till you completed your Draft 2, or your

goal for the day?

Yes *No*

1. I told myself I could rest after I had finished.
2. I took a break.
3. I promised myself a reward.
4. I reminded myself that draft 2 points counts towards my grade.
5. I stopped to drink energy drinks or eat something.
6. I reminded myself that this was something I had to do.
7. I thought of the consequences if I did not persevere.
8. I told myself this was a good opportunity to improve my writing skills.
9. I kept writing without worrying much about the quality of the draft.
10. I told myself "you can do it."
11. I gave up and stopped writing.
12. Other:

SECTION 3: After Writing Your Draft 2

8. When you completed Draft 2 did you assess your writing in any way?

Yes *No*

1. I quickly read what I had written.
2. I quickly read what I had written and revised problems that were obvious.
3. I carefully read the draft, marked all the problems I found and revised them.
4. I read the draft aloud to help me find mistakes.
5. I asked someone to check the draft for me.
6. I let the draft sit for sometime, then I read it and revised problems I found.
7. I asked myself if the draft met the requirements.
8. I only saved or printed a copy without reading or revising anything.
9. I told myself "Well done" or "Be proud."
10. I told myself "Next time you will do a better job."
11. I felt satisfied with what I had written.
12. I felt happy to have completed the assignment, even if the quality was poor.
13. Other:

9. How did you manage to complete Draft 2 by the due date?

Yes *No*

1. I stayed up all night till I completed it.
2. I spent most of the day before the deadline writing it.
3. I wrote different parts on different days.
4. I could not complete it by the deadline.
5. I carefully planned the time I had available.
6. Other:

APPENDIX L
FINAL DRAFT STRATEGY USE QUESTIONNAIRE

SECTION 1: Before Writing the Final Draft

1. Did you do anything to make sure you understood essay requirements, readings and comments well?

	Yes	*No*
1. I talked to my friends about it.		
2. I asked my classmates for help.		
3. I asked my teacher for help.		
4. I asked a tutor in the TLC for help.		
5. I reviewed the readings by myself.		
6. I reviewed the essay prompt.		
7. I reviewed all relevant handouts by myself.		
8. I reviewed the ARS.		
9. I joined a study group.		
10. Other:		

2. Before writing, did you do anything to make writing the Final Draft less difficult, and more interesting to you?

	Yes	*No*
1. I asked myself whether it would be easy or difficult to complete the draft.		
2. I spent time talking to my friends about my ideas for the draft.		
3. I discussed my ideas with the teacher.		
4. I envisioned/visualized the shape of my draft.		
5. I made a plan to work on different parts of the draft on different days.		
6. I checked my schedule and found the best times to write the draft		
7. I made a plan to write at a time when I could concentrate.		
8. I made sure I had a quiet place away from distractions to work on the outline.		
9. I made sure my working space was comfortable.		
10. Other:		

3. How did your get yourself to begin writing the Final Draft?

	Yes	*No*
1. I told myself that the Final Draft is important to write a good essay.		
2. I reminded myself that the grade I get on the Final Draft counts towards my final grade.		
3. I promised myself a reward after I finished writing the draft.		
4. I thought about the consequences if I did not begin writing it.		
5. I reminded myself of my grade goal for the class.		
6. I told myself "you can do it."		
7. I waited till the last day so I could feel pressured by the deadline.		
8. I reminded myself of my grade goal for this essay.		
9. Other:		

SECTION 2: While Writing the Final Draft

4. While writing the Final draft did you do any of the following?

Yes *No*

1. As I wrote, I relied on my knowledge about the different parts of an essay and their purpose.
2. As I wrote, I verbalized (say it aloud) what I know about the different parts of an essay and their purpose.
3. I paused to read what I had written to make sure it was grammatically correct.
4. I paused to read what I had written to make sure ideas were related.
5. I paused to read what I had written to make sure ideas were relevant to the point I was trying to prove.
6. I paused to read what I had written to make sure I was not repeating myself.
7. As I wrote, I paused to check the meaning of words in the dictionary before using them in my sentences.
8. I paused to read what I had written to make sure I was paraphrasing and not plagiarizing ideas.
9. When selecting relevant quotes, I paused to read what I had written to make sure the quote was related to the ideas.
10. As I wrote the supporting details, I looked back at the topic sentences to make sure my paragraphs were focused.
11. As I wrote, I paused to think about the best way to express my ideas.
12. As I wrote, I kept changing my sentences until I felt satisfied with what I had written.
13. As I wrote, I reminded myself of the purpose of this essay.
14. As I wrote, I reminded myself to write for an audience not familiar with the topic.
15. Other:

5. While writing the Final Draft did you adjust your working environment in any way?

Yes *No*

1. I listened to my favorite music to help me concentrate.
2. I put my telephone away so I could avoid interruptions.
3. I answered my phone whenever I got a call, text or email.
4. I had all the relevant materials close to me.
5. I was in a quiet place away from distractions.
6. Other:

6. When you were confused about something while writing the Final Draft, what did you do?

Yes *No*

1. I emailed my teacher and asked for help.
2. I called, emailed, or texted my friend and asked for help.
3. I made a memo so I could ask someone afterwards.
4. I just ignored it and continue writing.
5. I tried to find a solution by myself.
6. Other:

7. When you felt you were losing concentration, energy, or motivation, what did you do to get yourself to continue writing till you completed the Final Draft, or your

goal for the day?

Yes No

1. I told myself I could rest after I had finished.
2. I took a break.
3. I promised myself a reward.
4. I reminded myself that the Final Draft grade counts towards my final grade.
5. I stopped to drink energy drinks or eat something.
6. I reminded myself that this was something I had to do.
7. I thought of the consequences if I did not persevere.
8. I told myself this was a good opportunity to improve my writing skills.
9. I kept writing without worrying much about the quality of the draft.
10. I told myself "you can do it."
11. I gave up and stopped writing.
12. Other:

SECTION 3: After Writing the Final Draft

8. When you completed the Final Draft did you assess your writing in any way?

Yes No

1. I quickly read what I had written.
2. I quickly read what I had written and revised problems that were obvious.
3. I carefully read the draft, marked all the problems I found and revised them.
4. I read the draft aloud to help me find mistakes.
5. I asked someone to check the draft for me.
6. I let the draft sit for some time, then I read it and revised problems I found.
7. I asked myself if the draft met the requirements.
8. I only saved or printed a copy without reading or revising anything.
9. I told myself "Well done" or "Be proud."
10. I told myself "Next time you will do a better job."
11. I felt satisfied with what I had written.
12. I felt happy to have completed the assignment, even if the quality was poor.
13. Other:

9. How did you manage to complete the Final Draft by the due date?

Yes No

1. I stayed up all night till I completed it.
2. I spent most of the day before the deadline writing it.
3. I wrote different parts on different days.
4. I could not complete it by the deadline.
5. I carefully planned the time I had available.
6. Other:
1. The amount of time spent working on the draft.

APPENDIX M
INITIAL STRATEGY QUESTIONNAIRE

There are 4 situations below. Read each of the situations and provide at least 5 different responses for each of the questions. Be as detailed and honest as you possibly can. If necessary, you can answer the questions in Japanese, or in your native language. Avoid providing the same answers for different questions.

Situation 1: Oh No! A Boring Topic!

You have to write a 5 page essay on a topic that you think is boring**.**

a. What would you do to motivate yourself to begin writing the essay? *(Provide at least 5 responses)*
b. Once you start writing, what would you do to get yourself to continue writing, and, eventually, complete the essay? (*Provide at least 5 responses*)

Situation 2: Oh No! A Difficult Topic!

You have to write a 5 pages essay on a topic that you consider quite difficult.

a. What would you do to motivate yourself to begin writing the essay? (*Provide at least 5 responses)*

b. What would you do to make sure you persist and complete the essay? (*Provide at least 5 responses)*

Situation 3: Double Punch!

Today is Monday and the final draft of your essay is due on Friday. On Friday, you also have a test for one of your most difficult UG courses.

a. What would you do to ensure that you complete a fairly good essay by the deadline? (*Provide at least 5 responses*

Situation 4: I Need Help

Your classmate is new to academic writing and does not know what she can do before, during and after writing an essay to ensure that she writes a good essay. What would you tell her to do:

a. Before writing the essay? (*Provide at least 5 responses)*
b. While writing the essay? (*Provide at least 5 responses)*
c. After writing the essay? (*Provide at least 5 responses*)

APPENDIX N
GOAL ORIENTATION SURVEY

Not True	Slightly True	Somewhat True	Almost True	Very True
1	2	3	4	5

Mastery Goal Orientation

1. It is important to me that I learn a lot of academic writing skills in this class.
2. It is important to me that I do not look stupid in the writing class.
3. It is important to me that other students in this writing class think I am good at writing essays.
4. One of my goals in this writing class is to learn as much as I can about academic writing.
5. One of my goals in the writing class is to keep others from thinking I am not smart.
6. One of my goals is to show others that I am good at writing essays.
7. One of my goals is to master a lot of new academic writing skills in this class.
8. It is important to me to avoid making my writing teacher think I know less than others.
9. One of my goals is to show others that writing essays is easy for me.
10. It is important to me that I thoroughly understand my academic writing class work.
11. One of my goals in the writing class is to avoid looking like I have trouble writing the essays.
12. One of my goals is to look smart in comparison to other students in the writing class.
13. It is important to me that I improve my academic writing skills in this class.
14. It is important to me that I look smart compared to others students in the writing class.

APPENDIX O
WRITING ATTITUDE SURVEY

Not True	Slightly True	Somewhat True	Almost True	Very True
1	2	3	4	5

1. Academic writing is easy.
2. Writing academic essays is interesting.
3. Writing academic essays has value to me.
4. I look forward to writing academic essays.
5. I enjoy writing academic essays
6. Writing academic essays is rewarding

APPENDIX P

SURVEY ADMINISTRATION SCHEDULE FOR FALL 13, SPRING 14 AND SUMMER 14.

Surveys:
1. Class Questionnaire
2. Goal Orientation Survey
3. Outline Strategy Use Survey
4. Draft 1 Strategy Use Survey
5. Draft 2 Strategy Use Survey
6. Final Draft Strategy Use Survey
7. Writing Self-Efficacy Survey

Survey Name	Time of Administration	Procedures
Round 1		
Consent Form	Week 2 First class meeting	Distribute and read letter to the students.
Class Questionnaire	Week 2	Administer during the first 15 minutes of class. Answer vocabulary questions.
Goal Orientation Survey	Week 2	Administer during the first 15 minutes of class. Answer vocabulary questions.
Essay 1 Outline Strategy Use Survey	The day E1 outline is due	Administer during the first 15 minutes of class. Answer vocabulary questions.
Essay 1 Draft 1 Strategy Use Survey	The day E1 draft 1 is due	Administer during the first 15 minutes of class. Answer vocabulary questions.
Essay 1 Draft 2 Strategy Use survey	The day E1 draft 2 is due	Administer during the first 15 minutes of class. Answer vocabulary questions.
Writing Self-Efficacy Survey	Before final draft is due	Administer during the first 15 minutes of class. Answer vocabulary questions.
Essay 1 Final Draft Strategy Use Survey	The day E1 final draft is due	Administer during the first 15 minutes of class. Answer vocabulary questions.
Round 2		
Essay 4 Outline Strategy Use Survey	The day E1 outline is due	Administer during the first 15 minutes of class. Answer vocabulary questions.
Essay 4 Draft 1 Strategy Use Survey	The day E1 draft 1 is due	Administer during the first 15

		minutes of class. Answer vocabulary questions.
Essay 4 Draft 2 Strategy Use Survey	The day E1 draft 2 is due	Administer during the first 15 minutes of class. Answer vocabulary questions.
Writing Self-Efficacy Survey	Before final draft is due	Administer during the first 15 minutes of class. Answer vocabulary questions
Essay 4 Final Draft Strategy Use Survey	The day E1 final draft is due	Administer during the first 15 minutes of class. Answer vocabulary questions

NOTE. For all surveys, please take a few minutes to explain the overall purpose of the survey to the students before administering, and to remind them to ask questions when they do not understand a question or a word.

APPENDIX Q
CORRELATIONS BETWEEN VARIABLES FOR THE HYPOTHESIZED MODEL OF F2 FRESHMAN WRITING ACHIEVEMENT

Correlation Matrix for Measured Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. WA	—																	
2. TOEFL	.08	—																
3.UR	.02	-.33**	—															
4.RTD	.12	-.15*	.57**	—														
5.IMW	.18*	-.25*	.44**	.63**	—													
6. MW	.18*	-.09	.31**	.50**	.56**	—												
7. AE	.07	-.04	.23**	.34**	.25**	.26**	—											
8. IM	.18*	-.14	.42**	.62**	.84**	.59**	.23**	—										
9. SP	-.04	-.27**	.61**	.49**	.31**	.24**	.23**	.32**	—									
10.AW	.20**	-.08	.46**	.68**	.62**	.66**	.29**	.68**	.42**	—								
11.TM	.08	-.00	.36**	.59**	.36**	.29**	.31**	.45**	.41**	.53**	—							
12. MGO	.13	.07	.11	.01	.22**	.14	.05	.26**	.09	.14	.06	—						
13.AGO	.04	-.21**	.24**	.19*	.22**	.06	.10	.09	.14	.06	.03	-.09	—					
14. WSE	.38**	.30**	-.12	.06	.14	.06	-.01	.07	-.14	.09	.04	.08	.07	—				
15. GSE	.37**	.32**	-.08	.02	.05	.03	-.07	.05	-.13	.03	-.03	.01	.00	.69**	—			
16. SASE	.36**	.25**	-.15*	.05	.21**	.10	-.07	.17*	-.11	.12	.00	.06	.06	.82**	.67**	—		
17. RSE	.43**	.25**	-.07	.10	.18*	.12	.04	.13	-.10	.15*	.07	.09	.02	.84**	.62**	.78**	—	
18. EG	.10	.23**	-.19	-.09	-.20*	-.06	.01	-.13	-.12	-.07	.01	-.03	-.23**	.24**	.21*	.14	.21*	—
19. GDR	.11	.02	.07	.15*	.13	.16*	-.00	.16*	.03	.10	.10	.16*	-.07	.00	.12	.09	-.04	-.02

Note. N = 170; WA = writing attitude; UR = understanding requirements; RTD = reduce task difficulty; IMW = increase motivation to write; MW = monitoring writing; AE = adjust environment; IM = increase motivation; SP = solving problems; AW = assessing writing; TM = time management; MGO = mastery goal orientation; AGO = approach-avoidance goal orientation; WSE = writing self-efficacy; GSE = grammar self-efficacy; SASE = self-assessment self-efficacy; RSE = revision self-efficacy; EG = essay grade; GDR = gender.
**p = .01; *p = .05

APPENDIX R
STUDENT SAMPLE ESSAY AT THE EXCELLENT LEVEL

Eng 0812(801)

Essay1 Final Draft

September 24th, 2012

The Issues Towards Negative Body Image

Human beings have always had the desire to be beautiful and attractive, as there are always ideal body type standards which are created by various factors such as media effects. In the magazine article, "*How the Media Keeps Us Hung Up on Body Image*" written by Shari Graydon, she argues about how the media causes women to develop negative body images and also asserts that these media effects cause them to have mental and health issues. Although, her argument gains strength from the multiple forms of evidence she provides in support of her ideas, the solutions she offers do not seem realistically achievable and the overall message she attempts to convey is inaccurate which make her arguments too limited and not convincing on the whole.

The main strength in Graydon's article lies in her use of various types of evidence to support her ideas. She provides many different forms of evidence to make her ideas more convincing to the audience such as real examples of people who have suffered from eating disorders and negative body images caused by media effects, and also results from statistical studies which show how people are extremely concerned about their appearance. One of the real examples she provides is the deaths of famous people due to issues caused by body dissatisfaction saying that "At least three prominent women have died in recent years from complications from plastic surgery; Olivia Goldsmith, the American fiction writer who penned The First Wives Club; Micheline Charest, a prominent Quebec communications executive; and Donda West, the mother of popular hip hop artist Kanye West" (18). This type of example makes her ideas much more familiar to the audience as they can empathize with real people they actually have heard of or have seen before. Furthermore, in her article, the results of statistical studies are also used as evidence, such as the result of recent research published in the Canadian Medical Association Journal that approximately one in three pre-adolescent girls is trying to lose weight and one in 10 shows symptoms of an eating disorder (19). By providing the actual results of studies, she achieves in letting the audience know the current circumstances and seriousness of media influence on women's body image. Thus, it can be proved that by providing both examples of celebrities and aggregate results as evidence, Graydon achieves in making her argument more understandable and convincing for the audience.

However, the overall message she conveys is not exact as she states media effects to be the principal cause of body dissatisfaction issues and also only focuses on the development of negative body image for women. She claims that the media is the principal factor which causes negative body images in women and as a result of this, many health and mental issues arise. Jennifer L. Derenne and Eugene V. Beresin, the authors of "Body Image, Media, and Eating Disorders", clearly state that "Throughout history, the dominant political climate and cultural ideals always have shaped the public's perception of the ideal female body type" (257). This quote implies that it is not only media effects which define the ideal female body type. Rather, there are various elements such as interpersonal factors and cultural factors which have a large influence on idealizing body figures and making ordinary people dissatisfied with their appearance. Also Graydon's lack of referencing to issues of body dissatisfaction in men weakens her argument. Roberta Honigman and David Castle, the authors of "The Look Heritage", point out that there is an increase in the development of negative body image toward men as well as women. They state that there is an ideal male figure type that has been created which is a muscular and tough body. This ideal body figure is making more men uncomfortable and unconfident with their own appearance (3). In fact, Graydon's argument is biased because she only provides the development of negative body image for women, thus making her overall message unsatisfying. Therefore, the overall message she puts forward is misleading as she only focuses on media effects as the reason why development of negative body image occurs, and only argues about the issues of the development of negative body images for women.

In addition, another problem with her article is that the solutions that she offers are unreasonable and unrealistic. There are mainly three solutions that she suggests to reduce issues caused by media effects. Firstly, she suggests avoiding exposure to mainstream magazines and TV shows. This suggestion is unfeasible because as stated by Derenne and Beresin, our lives are surrounded by various types of media so we are automatically exposed to the influence of media. The media's form is currently varied to TV, internet, movies and print which implies that even if we try to avoid the mainstream magazines and TV shows, media is everywhere so it is impossible to keep out of the media influence (257). The second solution Graydon offers is that we have to show our resistance to manufacturers and advertisers who conduct unethical business which encourage the media to portray ideal figures. This solution is also impractical because as Tiggemann points out, the societal standards of beauty have already been created over the years so “thinness implies beauty” is deeply permeated into people’s perceptions (91). Tiggemann also talks about the economic concern, saying that “However, economic pressures make it unlikely that such input will be heeded in the short-term…” (97). This quote implies that many companies get benefits from their products which target women who want to be skinny so they do not want to lose the profits from those businesses. Also, there is still a large demand for these products so it would be very difficult to diminish economic pressures which encourage media to make people idealize thin women. The third solution she gives is teaching young people about the critical thinking of how and why media try to make these ideal figures at school. Although this suggestion may be efficient to reduce the risk of young people being strongly affected by media, it is not enough to prevent them from developing negative body images. This is because as stated by Honigman and Castle, their body image begins to develop from when they are infants, largely influenced by people around them, especially parents, and they are also already surrounded by idealized body shapes such as Barbie doll and super hero figures. In closing, the solutions Graydon proposes would not thoroughly solve the issues of distorted perception of our appearance.

In conclusion, development of negative body image is a complex problem being influenced by many factors. Although Graydon’s argument has the strength in the type and amount of evidence she provides to support her opinion, the overall message she conveys to the audience is misleading as she only focuses on the media to blame for body dissatisfaction and does not provide any information for the issues of body dissatisfaction for men. Also, the solutions she offers are unachievable as she fails to suggest practical ways to solve the issues. Thus, it can be concluded that her argument is not accurate and too limited in blaming the media as the prominent cause of negative body image issues. (Word Count 1205)

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APPENDIX S
STUDENT SAMPLE ESSAY AT THE GOOD LEVEL

Eng0812 (801)

September 24th 2012

Essay 1, Final Draft

The Media and Body Image

Today, more than ever, people live closely with media such as television, magazines, movies and Internet. They are easily influenced by this media because it is omnipresent and effectual. In the article, *"How the Media Keeps Us Hung up on Body Image",* Shari Graydon discusses how the media industry is making being thin the ideal, which is fatal to our health. The thin beauty standard that is often portrayed in the media is closely related to today`s eating disorder problems, which have drastically increased within the last few decades. When these visual images are ingrained in people's minds, they start to compare themselves with this thin ideal and it leads them to go on extreme diets, which cause psychiatric disorders such as anorexia nervosa and bulimia nervosa. Although Graydon presents powerful evidence to support her argument, her analysis on the factors influencing negative body image is biased, and the solutions that she suggests are not reasonable or easily applicable to everyday life and this makes her argument not quite as convincing as it could be.

Graydon gives persuasive evidence about how the ideal image from the media has negative impacts on people`s health. To support her ideas, she mentions celebrities, fashion models, and statistical research. Firstly, she stated that three prominent women, Olivia Goldsmith, Micheline Charest and Donda West, had died because of complications from plastic surgery. These are only the cases that make it in to the news, but there could be many more cases beyond these three women. Secondly, she mentioned two fashion models who died because of starvation and anorexia nervosa as strong proof of how lethal trying to live up to the thin ideal can be. From these cases, Graydon emphasizes how the thin ideal is unrealistic. In her article, she stated that "even the teenagers and twenty somethings actually blessed with skinny genes are collapsing from starvation on fashion runways" (18). This quotation clearly emphasizes how it is unreasonable to have an extremely thin standard. Most people do not have a thin body structure like fashion models, but even fashion models who are born with a thin frame are giving themselves serious nutritional problems to maintain their weights. She convinces readers the absurdness of the thin ideal by presenting this example. Lastly, she mentions a research from the Canadian Medical Association Journal to inform readers how eating disorders are fatal and pervasive among adolescent girls. From this research, she emphasized that one in three adolescent girls is on a diet and one in ten is showing eating disorder symptoms (19). Readers who are not familiar with celebrity gossip would perhaps find this statistical evidence more convincing. Therefore, she demonstrates how the thin beauty standard that the media promotes has negative impacts on people`s health and backs this up with research and real life cases.

However, Graydon`s argument on the factors that influence a negative body image is biased. She only focuses on and blames the media as a main factor of the negative body image that women have today, and ignores many other contributing factors. David J. Castle and Roberta Honigman, the authors of *"The Looks Heritage"*, explain what body image is and analyze why our society has become obsessed with physical appearance. In their article, they state that body image is also related to being a member of a society, peer pressure, and basic human instinct such as sexual selection. In addition, Jennifer L. Derenne and Eugene V. Beresin, the authors of *"Body Image, Media, and Eating Disorders"*, also suggest that political climate and cultural ideals are related to body image although it is easy to blame the media as the main cause of today`s thin ideal (257). Furthermore, Marika Tiggermann agrees that it is hard to conclude the media as the only factor of thin body image. In her article, *"Media Influences on Body Image Development"*, she admits "identifying the causal direction of media effects remains a challenge" (96). This quotation indicates that it is hard to conclude the media as the only cause of negative body image. The development of body image takes place over time, so it is too early to speculate the media as a main factor of the body image without convincing evidence. However, Graydon blames and attacks the media as a main factor of thin ideal without considering other factors and analyzing how people came to have today`s thin ideal. Therefore, Graydon does not discuss the impact of the media in relation to other factors which makes her argument less convincing.

Furthermore, Graydon suggests unrealistic and unreasonable solutions. She suggests that people should resist and boycott companies which use the thin standards of beauty. However, Derenne and Beresin describe the media as an impregnable force which is supported by massive financial resources to present manipulative advertisements that convince people to buy their products. They suggest that people should use this media to promote a healthy life style since it is ubiquitous and powerful by funding advertising campaigns (261). In contrast, Graydon suggests that people should fight against this media industry without giving a solid strategy for doing so. She also suggests that schools should introduce media literacy programs to educate students and encourage them to think critically. However, this solution is not reasonable because children are exposed to the media before their school age and the development of body image begins from early childhood. To support this idea, Tiggermann asserts that "such media literacy needs to begin in childhood, before beauty ideals are internalized" (97). This quotation certainly emphasizes the importance of early education. It is difficult to change when a certain perception is ingrained since childhood, so Tiggermann encourages parents to educate their children before the thin ideal is internalized. In contrast, Graydon claims that schools should have media literacy programs when in reality body image begins to develop in infancy. Thus, Graydon`s solutions are not reasonable or applicable to real life.

In conclusion, Graydon claims that the media is the main factor of today`s thin beauty standard and suggests solutions. Her article`s strength is that she presents persuasive evidence about how the thin ideal promoted by the media has negative impacts on people, but her argument on the factors contributing to this thin ideal is biased and her solutions are hard to fulfill and unreasonable. Although she presents powerful evidence of the negative effect of thin body ideal, her biased analysis of body image and unreasonable solutions far outweigh the advantages of her article. (1078 words)

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APPENDIX T
STUDENT SAMPLE ESSAY AWARDED AT THE FAIR LEVEL

Eng0812 (801)

Essay 1, Final Draft

September 24th, 2012

Women and girls are at war with their bodies. Contemporary media are shaping people's perception regarding their body image. This point is discussed by Shari Graydon's magazine article *"How the Media Keeps Us Hung up on Body Image."* In her article, she discussed how mass media distorted women body by the unrealistic idealized images displayed by the media which results in dissatisfaction. Graydon argued that media is placing too much pressure on the audience, by publicizing ideal body images and that makes the whole problem. Although Graydon's article is persuasive because of the examples she used that strengthen her points, her focus on blaming the media, and the ineffective solutions she suggested weakness her article.

The examples used by Graydon supported her argument about body image. She used different types of examples that support her ideas she wants to prove. At first, she offered examples from the media by discussing the effects of television programs, magazines, and actresses on audiences. One of the famous TV shows called "The Swan" offered plastic surgeries to achieve impossible goals, which result in many death cases. Likely, the two authors Jennifer Derenne and Eugene Beresin agreed with this point.

They implied in their article *“Body Image, Media, and Eating disorders”* that this program promote surgeries for the “ugly ducklings” and compete for the title of “The Swan”. They added that this program is displaying unhealthy body image (259). Graydon explained that the program called “Extreme Makeover” has also the same idea and goal with “The Swan” program. These programs are harmful on one’s body image. Moreover, Graydon discussed magazine’s airbrushing of the idealized body images shown in some of the famous magazines. Magazines like Miss America and Playboy displays unrealistic body shape and sizes of both men and women by using the developed technology like Photoshop to make the body look more ideal and perfect. People how read these kinds of magazines will be negatively affected and will start compare their own body with models shown in the magazine. In the same way, Graydon brought real life examples of famous women died of complication from plastic surgeries, such as Olivia Goldsmith, Micheline Charest, and Donda West (Graydon 18). Thus, plastic surgeries are not as easy as women expect, but the media seems to encourage people of doing that as a sign of beauty. Moreover, media does not only effects on the audience, but also on some of the actresses, like Lindsay Lohan, Paris Hilton, and Misha Brton to the extent that their fame was eclipsed because they do not look beautiful at the red carpet because of their frailty (Graydon 18). Graydon used these examples to show that even actresses themselves can get in trouble out of media trends. The message that comes out of TV shows, magazines, and the artistic is that only good looking and beautiful people are the happier and the most successful which is completely wrong because there are more important factors that should measure happiness, not only appearance. Secondly, Graydon found many researches and statistics to support his ideas, which made the article more persuasive. She stated that a research was done in the Canadian Medical Association journal, they discovered that "Close to one in three preadolescent girls is trying to lose weight and one in 10 shows symptoms of eating disorders" (19). This might be very dangerous because eating disorder could end with death, as it is one of the most chronic illnesses in girls. An author called Marika Tiggemann seemed to agree with Graydon in her article "Media Influences on Body Image Development", when she stated that nearly half the women and one-third of the men addressed that unhealthy magazine models make them feel insecure and intend to lose weight (93). Both Graydona and Tiggemann supported their argument with statistics. It can be seen how Graydon supported her ideas with these real life examples and statistics to support her own ideas about body image, and she successfully persuade the audience about her points.

However, the solutions Graydon suggests are not effective and that weakness her argument. Although she listed many solutions, but they are unrealistic and cannot be applied in real life. According to Graydon, education should help in the awareness of media negative messages. She added that teachers at schools should teach the students how to think logically and not be fooled with what media shows. However, even if this awareness was given at school, it won't be effective if it doesn't apply at home too. Girls and boys are affected more by their parents and family rather than school. As the authors Derenne and Beresin acknowledged in their article "Body Image, Media, and Eating Disorders" that Parent have the responsibility to talk to their children about media messages and the healthy life style (260). Thus, the role of parents is much more important and effective than the school role that mentioned by Graydon. Another solution she mentioned is that people should create resistance toward the images that media shows, and should limit their exposure to media. She continued that girl should not read fashion magazines to avoid the exposure of the destructive pictures. This is impossible because advertisement is everywhere around the school, home, playgrounds, and on the streets. Plus, even if children create resistance toward the media, they cannot create resistance toward their peer’s comment and teasing, so this solution is not reasonable. In addition, Graydon suggested another ineffective solution, Advertisement companies and publishers should know that they are using unethical and destructive ways to publicize their ideas, and that public should have a role in informing the companies so. Graydon encouraged advertisement companies and fashion industries to change their skinny models and replace them with regular-sized women because they will profitably sell the products and clothes. However, this is not effective because the companies will not possitvely respond to that because all they care about is money, and fame. Tiggemann also said that advertising companies have economic pressure, and thus they are focusing in succession rather than ethical behaving (97). Furthermore, Graydon concluded by saying that these solutions may not be enough, so she confess that her article is not complete. These solutions listed by Graydon cannot really change the society view of body image because they lack the accuracy and efficiency to achieve her main goal. As a result, the solutions provided by Graydon are not effective and will not help to reduce the attention of body image between people.

Furthermore, Graydon seems to focus on blaming only the media for the development of negative body image. In her article, it is clear how she tend to fully blame the media of these destructive messages, although she mentioned that there are other influential factors leads to eating disorder, but she never touched to it and that weakness her article. There are many other causes of the negative development of body image, so Graydon is wrong in blaming only the media. In the article, "The Looks Heritage", Roberta Honigman and David Castle stated, "Body image is strongly affected by social factors, including the culture we live in, the media, fashion trends, and even opinions and feelings of our family members, friends, and colleagues" (7). Graydon did not illustrate more about other causes beside media. Finally, since she did not discuss any of the influential factors besides media, her argument of this point was week. Graydon failure to come up with other factors besides media was a weakness in her article.

In conclusion, Grydon demonstrated real life examples from the media and the fashion industry to support her argument, because she thinks that media is the main reason for the development of negative body image, she suggested some solutions that can help people to move gar from this influence. Although the examples she provided supported her argument of body image, the solution she listed and her blaming of the media, weakness her article because they are not effective and cannot be applied in the real world. Is really media harming our society or is it benefiting it? That is a question to be wondered. To sum up, the solutions and media blaming explained by Graydon weakness her article, but the great examples she provided strengthen it. (1,479).

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APPENDIX U
STUDENT SAMPLE ESSAY AWARDED AT THE FAILING LEVEL

Eng0812 (801)

Essay 1, Final Draft

September 24^{th}, 2012

Influence of Media Exposure

Media exposure has a strong influence that it can entrap people into health disorder through its pressure to pursue the certain proportion in style for beauty. Shari Graydon puts emphasis on formidability of media exposure in her magazine article "How the Media Kept Us Hung Up on Body Image". She insists that media exposure affects people to negatively worry about body image followed with facts that people especially adolescent women have been suffering from eating disorders such as anorexia and bulimia. The article by Graydon is not convincing because although she provides persuasive examples, she inadequately reveals the cause of the negative body image development, and fails to acknowledge a clear solution.

Graydon's claim that the media triggers eating disorders as a negative effect is accurate. Media features high standardized models to catch attention of the viewers, but those features comprises excessive risk for general people to attain. Marika Tiggemann, the author of "Media Influences on Body Image Development" states "Both composite and specific measures of media use are correlated with a variety of body image indices, including body dissatisfaction, perceptions of overweight, and eating disorder symptomatology" (93-94). It insists that the media exposure has a strong connection with the negative body image development which is the result of depression from comparison with oneself to the ideal featured. People who idealized the features in the media exposure as their goal are likely to fail and end up with eating disorders such as anorexia and bulimia. Moreover, even the models themselves who are featured in the media are suffering the problem that the issue is not the matter of the differences in constitution. Graydon provides examples of death of Luisel Ramos, the model by anorexia, and the idea of correlation between psychiatric disorder and eating disorder by Merryl Bear, the director of the National Eating Disorder Information Center. People are most likely to have an opportunity to see them, and when they see the models, they may compare the models with themselves which makes them feel the difference from the model being depressed. Media massively appeals through its features that people especially women tend to have higher possibilities of suffering from eating disorder since they try to attain the high standard: being like the models in the fashion magazines. The Graydon is persuasively asserting that the media exposure is causing eating disorder as the result of the depression from the comparison with the ideal features.

Although Graydon makes assumption that the media is the factor of the negative body image development, it is inadequate to say the media is the only factor. The impact of the media influence on body image is undeniable for its diversity, but there are also other factors that lead to the negative body image. Some people consider that not everyone is affected in body image by exterior sources like media, but there are people who induce body image by themselves. In “The Looks Heritage”, one chapter of the book, the author David J. Castle and Roberta Honigman mention “Our image of our body is constantly fluctuating, and is sensitive to changes in our moods, the environment, and physical experiences” (8). It is showing that people can derive body image in their mind that it is not always caused by the outside world. The idea makes sense that the level of the body image differ depending on each person. Those who are affected by media exposure, tend to have body image by making comparison with models featured in media as a certain ideal. Others can have negative body image not being confident in their appearance; for example, whether being fit or not, people think they are not fit enough. Regardless of the level, body image is induced by comparison of individuals with their certain ideals. Since negative body image can be caused by individuals, the assumption Graydon is making that media is the only cause of the negative body image development.

The solutions provided by Graydon to prevent the media influence is impractical. Graydon shows that the media is the source of negative body image with supportive examples, but provides the odd solutions. She suggests three solutions for individuals; to avoid mainstream magazines and televisions, to resist the media exposure, and to educate young people the way of thinking how media works. These solutions lack the detailed explanation of the way to achieve that they are unrealistic. The influence of the media is unfathomable according to the authors of “Body Image, Media and Eating Disorders”. They say “While cultural standards of beauty are certainly not new, today’s media is far more ubiquitous and powerful” (Derene 260).

Having the concept of the beauty as a prerequisite, media is spurring certain proportion of the style which is making it as a requirement instead of as an ideal. The roles of media are not only advertising and broadcasting, but also a medium of pressuring the viewers that being slender is some kind of necessary factor for beauty especially for women through featured models. The desire for beauty is certain that the pressure from the media is definitely affective that resisting to media exposure would be way difficult as long as pursuing beauty. Teaching the media effects is not an easy thing for its unlimited effectiveness, and media is ubiquitous that avoiding only the mainstream ones is difficult that there is enough possibility of seeing them by chance through the advertisements. Without any clear strategy for the solutions, it is undeniable to say that the solutions provided by Graydon are unrealistic considering that the media exposure is the unfathomable issue.

Shari Graydon makes effective assertion in the article in terms of suggesting the problems of media exposure by mentioning the facts to support her statement. Although she emphasizes media is the cause of the negative body image development, but people are also developing body image negatively by themselves through personal perceptions. Even though she offers solutions, they are lacking the detailed explanation to follow that they are unrealistic. While there is persuasive suggestion that media exposure leads to negative body image and health problem, there are also insufficient parts in her insistence through the article that the statement of Graydon is unconvincing. (1031 Words)

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