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THE INFLUENCE OF USING COGNITIVE STRATEGY INSTRUCTION THROUGH WRITING RUBRICS ON HIGH SCHOOL STUDENTS' WRITING SELF-EFFICACY, ACHIEVEMENT GOAL ORIENTATION, PERCEPTIONS OF CLASSROOM GOAL STRUCTURES, SELF-REGULATION, AND WRITING ACHIEVEMENT

A Dissertation

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Doctor of Philosophy

By

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A Dissertation APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

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ABSTRACT

To determine benefits of cognitive strategy instruction when using writing rubrics, 164 students from a large suburban high school in the Southwest United States wrote three essays and completed pre- and post-measures assessing writing self-efficacy, achievement goals, self-regulation, and the perception of classroom goal structures. The essays were assessed for writing performance, the time spent writing, and the number and quality of revisions made. Repeated measures MANCOVAs revealed significant interactions for self-regulation, the number of minutes spent working on the writing, and the number of content-related revisions made. Students receiving a writing rubric and cognitive strategy instruction demonstrated benefits in comparison to the rubric-only group whose members received only the rubric and a brief explanation of the criteria. Interviews further provided a description of students' attributions regarding significant interactions.

CHAPTER 1

INTRODUCTION

Statement of the Problem

One charge given to teachers of English is to shape students into effective writers. As with any type of classroom instruction, approaches to teaching writing vary from teacher to teacher depending on state and district-level writing objectives, the school's curriculum, the expertise of the teachers, and the students who make up the class (Weaver, 1996).

One difficulty with teaching composition is that writing is a reflection of thought and expression. As students in any classroom may vary in their thinking or motivation to invest in meaningful thought, as well as their ability to express these ideas, composition teachers are faced with the daunting task of enabling students to think and express their thoughts in written form with unity, coherence, and the adequate development of ideas (Hodges & Whitten, 1986). Additionally, these teachers must hold students accountable for generating writing deemed standard in grammar, vocabulary, and spelling.

Another difficulty in teaching composition is that teachers may be uncertain how to design lessons that enable students to become effective writers. Teachers are given two charges that seem paradoxical: to use instructional strategies that may encourage prescribed, formulaic writing and to encourage students to develop their

own voice or sense of writing style. Providing a formula for the writing may serve as a scaffold (Bruner, 1973; Vygotsky, 1967) so that students are guided to include necessary structural elements (such as topic sentences, concrete details, commentary, etc., in the paragraphs) and necessary content elements (such as addressing all aspects of the topic or assignment). The formula may prove particularly helpful for students who are unequipped with strategies to get them started on the writing (De La Paz & Graham, 2002). However, using a formula approach may come at a cost. It may limit original thinking and expression on the students' part. In attending to the formula, students may lose their sense of voice, their own unique writing style that is a composite of diction, syntax, and vocabulary.

In looking at the research on how to develop effective lessons, instructional design models recommend that learning objectives be clearly communicated to the students and that formative feedback be incorporated into the instructional strategies (Dick & Carey, 1996; Smith & Ragan, 1999). In using formative evaluation, the teacher provides important information to the learners regarding their current performance level. However, providing timely, formative feedback is challenging for composition teachers. First, class sizes are often large. Second, usually composition teachers have the added responsibility of teaching literature, grammar, vocabulary, and oral communication skills. Thus, it seems extremely difficult, if even feasible, for teachers to provide quality feedback in a timely fashion that is specific and meaningful to each student. Under the pressure of providing feedback, composition

teachers frequently find themselves making evaluative statements that may be too general to be instructionally beneficial for the student (Maxwell & Meiser, 2001). Teacher comments such as "good," "needs improvement," or "work on this" may not provide sufficient guidance (Butler, 1987; Lackey, 1997). Students are left to question *what* was good, *what* needs improvement, or *why* and *how* they need to work on that particular area of the essay.

To remedy the situation, a popular time-saving strategy geared toward providing specific, formative feedback during writing instruction and assessment has been the utilization of descriptive scoring sheets, also referred to as rubrics (Maxwell & Meiser, 2001). If designed well, rubrics are often time-saving for teachers, as they only need to mark the level of proficiency for each criterion; yet at the same time, task-specific feedback is provided by the qualitative description of current performance (Maxwell & Meiser, 2001). When used as an assessment instrument, rubrics serve as a reactive tool in that students may see the ratings for each criterion and may make decisions on how to approach future assignments. However, rubrics may also serve as a proactive, process-oriented tool that up-front makes students aware of the criteria and that guides thinking, writing, and revising prior to teacher evaluation.

In order to develop proactive use, students likely need to be taught strategies *how* to use the rubrics explicitly. Research by Zimmerman, Bandura, and Martinez-Pons (1992) suggested that knowledge *of* criteria or strategies may not be sufficient in

helping students to make lasting gains in their writing. The students must be provided the knowledge of how to *use* the rubric as a guide during the writing process. The way that teachers present the use of the rubrics may encourage or inhibit the success of the rubric as a learning tool.

Students who write at a proficient level may already possess the ability to devise effective strategies at using rubrics or meeting writing requirements on their own. De La Paz and Graham (2002) suggested that "Skilled writers activate and coordinate an impressive array of mental operations, skills, and knowledge as they make plans, draw ideas from memory, develop concepts, organize ideas, create a written draft, reconceptualize plans, revise text, and so forth" (p. 690). Writers already proficient with the process are likely to have automatized many of the necessary skills (i.e., using varied, grammatically correct sentence structures), and as a result, many of the cognitive demands involved in the task are alleviated (Anderson, 1995). If these writers are already competent in the writing process, they may benefit in receiving instruction and employing strategies aimed at developing their personal writing style or voice (Zimmerman & Kitsantas, 1999).

On the other hand, less proficient writers are likely to lack automaticity and may demonstrate limitations in their thinking as their working memory will be divided between thinking about the content and the actual process of writing with clarity and in standard form (Anderson, 1995). Even if these students possess some of the necessary writing skills in isolation, they may not be able to coordinate them so

that they may be used conjunctively and effectively (Scardamalia & Bereiter, 1983). Thus, less proficient writers may need explicit instruction regarding approaches to coordinating these skills so that the writing process develops towards automaticity and eventual efforts may be directed at developing a sense of voice. Zimmerman and Kitsantas (1999) found that students who developed proficiency in writing revision when taught explicit self-regulatory strategies shifted from focusing on process-oriented goals to focus on outcome-oriented goals, such as improving the style or quality of the text.

Thus, it appears that all students would benefit from explicit strategy instruction regarding the use of rubrics through understanding how to interpret process and outcome feedback, through exposure to the thought processes one should undergo while completing the assignment, and through training in self-regulatory behaviors associated with the assignment (Danoff, Harris, & Graham, 1993; De La Paz & Graham, 2002; Zimmerman & Kitsantas, 1999). Unfortunately, little evidence exists that many teachers provide explicit instruction in writing strategies and many necessary writing skills (De La Paz & Graham, 2002). Additionally, although composition teachers have utilized rubrics for years, no research has been conducted to show how the use of rubrics, coupled with cognitive strategy instruction, influences students' performance and motivation.

The purpose of this study was to determine the extent to which teaching overt cognitive strategies when using a writing rubric influenced high school students'

motivation, their perceptions of classroom goal structures, their ability to regulate their own writing behaviors (including factors for time and the number and type of revisions), and their writing achievement. In this study, motivation referred to the students' self-efficacy (their perceived competence related to writing short, expository essays) (Bandura, 1986; Pajares, 2003) and their academic achievement goals (wanting to learn or to improve their competence, and/or wanting to outperform others or avoid looking incompetent) (Ames & Archer, 1988; Dweck, 1986). Students' perceptions of classroom goal structures referred to the extent to which students believed their teachers and/or classroom environment encouraged the adoption of particular academic achievement goals (Ames & Archer, 1988; Church, Elliot, & Gable, 2001; Dweck, 1986). Self-regulation referred to the students' use of personal strategies to guide them through the writing process for the task at hand (Zimmerman & Martinez-Pons, 1990). All of these variables were assessed prior to and after receiving either a writing rubric with an explanation of the criteria or a writing rubric and overt cognitive strategy instruction. Writing achievement was assessed via an essay scoring sheet composed of eight criteria commonly used in evaluating writing. Additionally, I documented the time individual students spent on the writing task and the number and types of revisions the students made during the task.

Significance of This Study

Data from the National Assessment of Educational Progress provided that

only twenty-five percent of American eighth- through twelfth-graders, at each grade level, demonstrated proficiency in writing (Greenwald, Persky, Campbell, & Mazzeo, 1999). Thus, there is a definite need to improve writing instruction, and the approaches to do so should include practices designed to develop writing knowledge, skills, and strategies (De La Paz & Graham, 2002). Strategies typically used in composition classrooms were under investigation here, specifically the use of rubrics and the presence or absence of cognitive strategy instruction in using the rubrics. This study expands on previous research in the following ways.

First, relatively no research exists regarding the use of rubrics. Even so, using rubrics has become a common practice in classrooms (Maxwell & Meiser, 2001). Although the practicality of the rubric seems obvious as a time-saving and task-specific feedback device, this study was designed to assess the effectiveness of two approaches to using the rubric.

Second, although research has indicated the influence of cognitive strategy instruction on student motivation, namely self-efficacy (Danoff, Harris, & Graham, 1993; Graham & Harris, 1989), and on self-regulatory behaviors (Harris & Graham, 1992), it has failed to explore the influence that teaching overt strategies may have on perceptions of classroom goal structures and achievement goal adoption. Research has suggested that when students perceive their teacher to provide more support, the students tend to find the learning more intrinsically interesting and tend to adopt a desire to learn or master the material (Church, Elliot, & Gable, 2001; Dweck, 1986;

Ryan & Deci, 2000a & 2000b). Since explicit cognitive strategy instruction is designed to further enable students with the relevant skills, in this case empowering them with writing skills, it is predicted that the students would perceive their teachers and the classroom environment as encouraging a mastery orientation. Consequently, the students would be encouraged to adopt a mastery approach to the learning.

Third, previous research related to cognitive strategy instruction has primarily utilized elementary-aged students (Danoff, Harris, & Graham, 1993; Graham & Harris, 1989), and has been limited somewhat to younger students with learning disabilities (De La Paz & Graham, 2002). High school students have been used in some research regarding the development of self-regulatory skills (Zimmerman & Kitsantas, 1999); however, the research has not focused on some of the aforementioned variables and the use of rubrics as a instructional tool. Given the importance of developing effective writing skills in high school for a future college career or vocation and given that writing may become a greater curricular emphasis as students approach their final years of their secondary education, it seems important that further research address this age group.

In all, the knowledge garnered from this study may better inform language arts teachers as to the influence of overt strategy instruction when using rubrics. As a result, this enlightenment may help these teachers to design lessons that maximize students' writing performance and motivation to learn how to write, while incorporating a commonplace assessment and instructional tool, the rubric.

CHAPTER 2

REVIEW OF THE LITERATURE

Review of Previous Literature and Opinion

I begin this chapter by presenting a review of current literature to address the use of rubrics as a tool to teach and to evaluate writing and the use of cognitive strategy instruction to promote cognitive engagement and to improve writing. Following the discussion of the topics mentioned above, each of the dependent variables in the study is defined, and known relationships among the variables are described. The dependent variables included writing self-efficacy, the three types of achievement goals (learning, performance-approach, and performance-avoidance), perceptions of classroom goal structures (as evidenced through learning, performance-approach, and performance-avoidance goals), self-regulation (a self-report measure, time spent writing, and the number and quality of revisions made), and writing achievement. Finally, a summary is provided, and the research questions are posed.

Surprisingly, little research exists advocating the use of a particular strategy or paradigm for providing feedback on student writing. After all, responding to student writing is a difficult task as teachers must consider approaches that "...motivate and nurture, yet are honest and instructional" (Crone-Blevins, 2002, p. 95). Given class sizes and the curricular demands English teachers must face, it is essential that the

useful information to the students. Writing rubrics seem to fulfill both of these requirements (Maxwell & Meiser, 2001).

Writing Rubrics

Rubrics are scoring guides that are created to rate how well a process or product meets particular specifications (Maxwell & Meiser, 2001). Rubrics serve as a tool for evaluation, yet their functionality is not limited to assessment. Rubrics may serve six purposes in addition to evaluation; they focus instruction, guide feedback, characterize desired results, operationalize performance standards, develop self-assessment competence, and cognitively engage students (Rubric Basics, 2003). Additionally, rubrics may serve as a visual reminder (Graham & Harris, 1989; Zimmerman & Martinez-Pons, 1990). Graham & Harris (1989) found graphic reminders to be of benefit, whether these visual aids were a list of steps, self-questions, or planning sheets to organize the writer's ideas, grammatical form, or thematic content. During the writing activity, students may reference the rubric to ensure that all criteria are being met. However, the utility value of the rubric is dependent on its quality.

The design of the rubric is of critical importance. Rubrics that are designed well provide specific, task-related feedback to the students. Certain properties must be in place for rubrics to encourage motivation in and better performance from students. Generally speaking, the feedback provided by the rubric should encourage students to "re-see" or question if appropriate grammatical and stylistic choices have been made

and if their writing clearly articulates the message given the intended audience (Crone-Blevins, 2002) . Furthermore, Quible (1997) claimed that the utility value of the feedback is influenced by the tone of the comments, the specificity of the comments, the purpose of the comments, and the background of the writer. He suggested that the comments provided be easily understood by the student and that they identify specific levels of performance, including areas needing improvement. Additionally he suggested that students be trained how to process and to use the feedback. These suggestions seem logical, and existing empirical research, as presented below, seems to support these claims.

In two studies, Butler (1987) and Lackey (1997) both found that task-specific feedback was important for students to show gains in writing achievement and motivation. In a study using divergent thinking tasks and two hundred high- and low-achieving fifth and sixth graders, Butler (1987) found that different forms of feedback impacted the students' motivation and achievement differentially. Feedback in the form of grades and praise increased ego involvement, attributions focused on one's ability in comparison to others. However, feedback in the form of specific task-related comments increased task involvement, attributions focused on enjoyment of the task and the desire to learn. Additionally, both high- and low-achievers evidenced a decrease in performance when provided with grades as feedback or when provided no feedback at all, while both high- and low-achievers demonstrated an increase in performance when presented with task-specific comments. High-achievers and low-

achievers were affected differentially by praise, as high-achievers showed a decrease in performance, and low-achievers demonstrated a very slight increase. Overall, a major implication from this study is that both high- and low-achieving students seem to benefit from task-specific comments rather than general comments or no feedback at all.

Similar to Butler's (1987) study, Lackey (1997) investigated the relationships among written feedback, motivation, and changes in writing performance. In a study using 137 students enrolled in a college freshman-level, second semester English composition class, he found a positive relationship between the number of teacher-made task-specific comments and students' task involvement and improvement in writing performance. Thus, both studies supported the use of specific commentary, as it encouraged better writing performance and more intrinsic or mastery-oriented types of motivation. Based on these suggestions, the well-designed rubric should include qualitative descriptions that delineate varying performance levels, ranging from superior to inadequate performance, for each criterion to be assessed.

In order for rubrics to be practical, they must additionally serve as a timesaving grading tool for teachers. According to Maxwell and Meiser (2001), teachers who use rubrics should refrain from making comments and revisions throughout the text of the paper and should mark appropriate ratings on the rubric. At most, teachers should only mark the text with a check mark or a similar mark to draw the students' attention to that area of the paper. When utilizing the rubric for

feedback, the students' role is to engage actively in the learning by problem solving and revising the weak areas indicated in order to meet the standards described in the higher gradations for each criterion. In doing so, teachers are freed from the burden of writing time-consuming remarks, while they are still providing guided, specific feedback. Maxwell and Meiser (2001) suggested that any comments provided by the teacher should reflect areas not addressed by the rubric, such as comments related to further prodding (i.e., "tell me more about this point") or direct praise.

As with any tool, the effectiveness of the rubric is likely to depend on the students' understanding of how to use it and on their perceptions of the importance of the rubric based on classroom expectations. From a theoretical perspective, Gagne suggested that intellectual skills form a hierarchy (Gagne & Driscoll, 1988). He claimed that when learning, an individual initially develops the ability to discriminate and then to form concepts. Concepts, then, may be further developed into rules. Whereas concepts were described as categorizations or classifications based on relevant features in two or more examples, rules were described as cognitive processes in which an action or procedure may be carried out when given specific stimuli. Learning a concept, then, was different than learning an application; for application, learners must develop concepts into rules of usage . In relation to the use of rubrics, an implication may be that students should be taught not only the concept of each criterion, but also the approach to successfully performing the criterion (Zimmerman, Bandura, & Martinez-Pons, 1992). After all, the writing skills taught by

composition teachers are procedures.

When learning procedures, students may first acquire necessary skills by applying declarative knowledge (Anderson, 1995), in which case they may memorize the steps to follow when writing. However, if the students rely on declarative knowledge while attempting to perform, in this case to write, their working memory resources will likely be taxed. In other words, the students' performance will not be efficient as their cognitive resources are divided between *how* to write and *what* to write. De La Paz and Graham (2002) characterized a typical approach often utilized by less-advanced writers by claiming that they "...[retrieve] any information from memory that is topic appropriate and ...[they write] it down, with each preceding phrase or sentence stimulating the generation of the next idea" (p.689). Students may be proficient at using a singular writing strategy, in this case sticking to the topic, yet to become a proficient writer *all* necessary writing skills must be coordinated (Scardamalia & Bereiter, 1983). In order for multiple writing skills to be used efficiently and in a manner less demanding on the working memory, these skills must become proceduralized.

Gagne's and Anderson's claims suggest the importance of not only teaching knowledge about things but also teaching knowledge of how to use things. Simply knowing about criteria or strategies does not guarantee that they will be utilized (Zimmerman, Bandura, & Martinez-Pons, 1992). It seems critical that to gain the maximum benefit from rubrics, teachers must not only discuss the components of the

rubric, but they must also teach the procedures and cognitive strategies for using the rubric (Quible, 1997). Because many students have not demonstrated proficiency as writers (Greenwald, et al., 1999) and may demonstrate limited cognitive ability regarding this complex task (Scardamalia & Bereiter, 1983), a rubric may serve as an impetus to encourage students to complete each criterion of the assessment, even if completed one at a time, so that the writing process and all necessary skills within their repertoire are used.

Based on the above findings, composition teachers' use of rubrics may be instrumental in encouraging better writing performance, more intrinsic forms (mastery-oriented) of motivation, and potentially for older students, such as a high school population, an increase in writing self-efficacy (Zimmerman & Kitsantas, 1999). Since rubrics are commonplace tools in the English classrooms and since expertise in writing requires developing procedures to coordinate the complex tasks inherent in effective writing, it seems important to investigate the influence of coupling cognitive strategy instruction with rubrics.

Cognitive Strategy Instruction

The influence of cognitive strategy instruction has been the focus of numerous studies (Danoff, Harris, & Graham, 1993; De La Paz & Graham, 2002; Graham & Harris, 1989; Zimmerman & Kitsantas, 1999 & 2002) because students often have knowledge regarding a topic or an activity, but lack the strategies to operate using the knowledge. In one study, Hillocks (1984) sought to determine the effects of different

modes of instruction on writing. Several modes of instruction were used: the *presentational* mode, in which the teacher presented rules, advice, and examples of good writing while the students remained passive "learners"; the *natural process* mode, in which, without providing any instruction, the teacher allowed the students to write for their peers and to revise based on feedback; and the *environmental* mode, in which the teacher planned activities specifically geared to remedy the problems that emerged in the students' writing and later helped to create criteria to guide the writing (Hillocks, 1984).

Using pre- and post-measures, Hillocks (1984) found that "the environmental mode was four times more effective than the traditional presentational mode and three times more effective than the natural process mode" at promoting writing performance (p. 160). From least effective to most effective, respectively, he found that certain strategies were beneficial tools for writing instruction: using models of "good" writing, using free writing, teaching sentence combining, incorporating the use of scales or criteria, and, specifically, teaching inquiry or strategy use.

However, there has been disagreement regarding the model of writing to use with students. Carkenord (1998) recommended using the best written response from his students as a model in class. He reported that "...students appreciate and find useful essay feedback in the form of an actual [student] example of a full-credit answer" (p. 191). He went further to claim that the students may see a connection between the feedback provided and their own writing. However, this approach may

come at a cost to those who are not the best writers in the class. More recent research has suggested that model similarity is important and that weak writers learn more from weak models, while good writers learn more from attending to good models (Braaksma, Rijlaarsdam, & van den Bergh, 2002).

Schunk and Pajares (2002) described a *coping model* as an individual who faces obstacles in the task at-hand and displays perseverance and mutable strategies to solve the problem; a *mastery model* refers to an individual who demonstrates an effective approach without problems. Observers of the "coping models" are afforded the benefit of vicarious strategy instruction as they watch problem-solving and overt metacognitive processes. Exposure to coping models has been shown to influence learning more than witnessing the flawless performance of a mastery model (Zimmerman & Kitsantas, 2002). Although research has provided that good writers benefit from observing good models (Braaksma, Rijlaarsdam, & van den Bergh, 2002), the good writers may benefit from "coping" in the sense that they are challenged to assess their own good practices in comparison to the effective strategies presented by others. Given the research regarding modeling, teachers may provide several models so that all levels of performance are represented, or they may select good, but not perfect examples so that strategies for addressing the weaknesses may be discussed. Evident in this discussion is the need to provide models and the potential influence of strategy instruction.

In addition to Hillocks' (1984) study, others have provided support for the use

of cognitive strategy instruction. Danoff, Harris, and Graham (1993) and Graham and Harris (1989) found that explicit writing strategy instruction significantly improved story-writing performance for fourth- through sixth-grade students with and without learning disabilities. Danoff, Harris, and Graham (1993) suggested that the strategy instruction provided through writer workshops possibly helped to make "important cognitive process more visible and concrete for these young writers" (p. 317).

Furthermore, Harris and Graham (1992) provided recommended guidelines for teaching cognitive strategies in their Self-Regulated Strategy Development (SRSD) model. Based on this model, students must be actively engaged in the strategy development process through interaction with the teacher. In other words, a dialogue between the students and the teacher rather than a monologue by the teacher should take place so that students are allowed to adopt, to generate, and to invest in personal strategies. Although they suggested this process must initially be guided through overt, explicit modeling by the instructor, eventually the responsibility for strategy acquisition rests with the student. The teachers facilitate strategy development through demonstrating "...any combination of self-statements, goal setting, self-assessment, self-recording, and self-reinforcement to regulate performance, including the use of target strategy" (Danoff, Harris, & Graham, 1993, p.302). During strategy instruction, the researchers also recommended that teachers discuss the importance of the strategies, provide individual feedback, and assess strategy development by means of criterion-referenced evaluation (Danoff, Harris, & Graham, 1993; Harris and

Graham, 1992). Of course, the strategy instruction must be tailored to the particular skills being taught. In the case of teaching composition, the writing process and revision skills should be taught.

First, a common practice for composition teachers is to encourage students to follow the steps in the writing process to promote a better quality of paper. These steps afford students the opportunity to collect their ideas, to express these ideas as they flow from their minds, to revise drafts based on relevant criteria, and to prepare a copy following publication guidelines (Sebranek, Meyer, & Kemper, 1996). In support of teaching students pre-writing strategies, De La Paz and Graham (2002) found that regular education middle school students who were provided cognitive strategy instruction in planning their writing wrote longer, better quality essays that contained more mature vocabulary than students who did not receive the strategy instruction. The inclusion of writing process strategy instruction seems important, then, in fulfilling process goals.

Second, in teaching cognitive strategies for revision, teachers must consider essential revision skills and the particular criteria on which their students will be evaluated. Stoddard and MacArthur (1993) provided six components of skilled revision:

> First, writers need at least implicit goals and purposes for writing to motivate and guide revision. Second, they need a general understanding of revision as an important and routine part of the writing process that can focus on meaning

> and organization as well as mechanics. Third, they need knowledge of evaluative criteria and of typical problems in writing. Fourth, they need to monitor actively the adequacy of their writing using these goals and criteria. Fifth, they need a repertoire of strategies or tactics for revising. Finally, they need sufficient general writing skill to generate alternative text. (p. 77)

These components conglomerate to form an individual's *task schema* for writing (Wallace, Hayes, Hatch, Miller, Moser, & Silk, 1996). According to Wallace, et al. (1996), revision involves three components: "...the ability to read critically and to fix text problems, working memory resources, and a learned task schema that includes... criteria of acceptable text, a list of problems to look for, strategies for fixing the problems, and an estimate of how much effort should be spent making revisions" (p. 683).

In support of the use of strategy instruction regarding writing revisions, Stoddard and MacArthur (1993) looked at the effects of teaching a systematic approach to peer editing, using cognitive strategy instruction, to seventh- and eighth grade students with learning disabilities. The baseline data demonstrated that during peer editing before strategy instruction was provided, few revisions were made during the writing process, and the revisions that were made tended to focus mostly on surface mechanical errors. As a result, the researchers reported that the revision employed had "no impact on the overall quality" of the writing. However, after peer editing strategies were taught through cognitive strategy instruction, the number of

substantive revisions increased. The overall quality of the writing improved as pre-test to posttest gains "...ranged from 2.6 to 5.5 points on an eight-point scale" (p. 96). Moreover, the gains were evident on posttests given one month and two months after the first posttest, and these gains even generalized to a posttest in which the students revised their work independently without the opportunity for peer revision.

In both the De La Paz and Graham (2002) and Stoddard and MacArthur (1993) studies, cognitive strategy instruction benefited students working through the process of writing. Both of these studies seem to support a paradigm in which knowledge of the task *and* the strategies to complete the task were emphasized. Once teachers have developed the criteria for their own assignments, as may be reflected by a writing rubric, the implication is that teachers should utilize strategy instruction regarding those elements (Danoff, Harris, & Graham, 1993).

As students advance in their writing expertise, however, research has suggested that teachers may need to shift their attention from process-oriented strategies to product-oriented strategies. Zimmerman and Martinez-Pons (1990) found that novice writers benefit from cognitive strategies in the initial learning phases of writing instruction. For example, one strategy may be planning writing before actually beginning the writing. As suggested previously, less-advanced writers may have a limited cognitive capacity regarding writing and may focus on only one aspect of completing the assignment, such as the topic. If taught to plan their ideas and, better yet, to write them down, the students may allocate their working memory to

addressing other areas or skills for their writing (De La Paz & Graham, 2002). However, a threshold seems to exist where students may no longer need to attend to or to follow overt procedures in fulfilling the process of the task; rather, with the procedures becoming more automatic and covert in their use, the students may attend to making qualitative changes, or product-based decisions, regarding the writing (Zimmerman & Kitsantas, 1999). At this point, teachers may focus their instruction so that they are teaching strategies to develop writing style or students' sense of voice. Overall, the findings presented in the review of literature thus far seem to justify the use of rubrics and cognitive strategy instruction as instructional tools.

Justification for the Use of Rubrics Coupled with Cognitive Strategy Instruction

To summarize the discussion to this point, the literature has suggested that rubrics serve as a functional tool in the language arts classroom by guiding lesson development and assessment for teaching writing, by communicating and characterizing standards of writing performance, and by encouraging cognitive engagement in writing tasks (Rubric Basics, 2003). Additionally, it is a practical tool in that teachers may provide specific feedback efficiently (Maxwell & Meiser, 2001). While a rubric serves as a visual reminder of the target criteria (Graham & Harris, 1989; Zimmerman & Martinez-Pons, 1990), students may use it to develop writing strategies aimed at satisfying the numerous skills that must be coordinated in effective writing (De La Paz & Graham, 2002). However, effective strategy development does not simply evolve for all students. Research has demonstrated that when teachers

provide explicit cognitive strategy instruction cognitive processes seem to become visible for students (Danoff, Harris, & Graham, 1993), and as a result, they may develop expertise in skill coordination (Zimmerman & Kitsantas, 1999) and demonstrate gains in writing performance (De La Paz & Graham, 2002; Graham & Harris, 1989; Zimmerman & Kitsantas, 2002).

Based on the literature, it seems evident that students benefit from the provision of a rubric, yet they are likely to show additional benefits when they are guided in developing cognitive and self-regulatory strategies in using the rubric. These benefits may surface in students' perception of the teacher and classroom environment, their willingness to invest more meaningfully in classroom tasks, their beliefs regarding competence in performing these tasks, their self-regulated behaviors, and their performance.

Relevant to my study, these benefits may surface when teaching writing in a language arts classroom. In addressing the one area of benefit, it seems that when enabled with specific approaches to using a writing rubric through cognitive strategy instruction, students would perceive the teacher and his practices as being supportive of learning or a mastery orientation rather than norm comparisons or a performance orientation. Literature on the perception of classroom goal structures lends support for this claim.

Perception of Classroom Goal Structures

Research has provided relationships and influences regarding students'

perceptions of classroom goal structures and the adoption of achievement goals (Church, Elliot, & Gable, 2001). Far too often, attempts to increase student motivation have been made by "raising the bar." These attempts encourage the desired behavior through extrinsic motivation (Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000a & 2000b) and through a performance goal orientation, determining one's own competence by making comparisons to the performances of others (Ames & Archer, 1988; Dweck, 1986; Elliot & Harackiewicz, 1996). For example, common "motivational" strategies that are used in composition classrooms include celebrating publicly the few exceptional papers (Carkenord, 1998), inflating the value of written assignments so that they become high-stakes activities (Crone-Blevins, 2002), emphasizing grades, and emphasizing the rigor through which the papers will be scrutinized.

Although these approaches may appear to be somewhat effective, they have implicit negative repercussions. For instance, although it may seem that recognizing the top writers of the class would be a positive teacher behavior, the competition evoked when the few top papers are celebrated publicly may be detrimental to the masses who know they are not among the elite. In yet another instance, high-stakes assignments are likely to increase student stress and may compromise the value of other important assignments.

Traditionally, teachers have often adopted the philosophy of "tightening the reins" as another approach to "motivating" students to do well. In some cases teachers

may even emphasize the stringency of the evaluation which has been shown to encourage performance goals which inhibit intrinsic motivation and mastery goals (Church, Elliot, & Gable, 2001). In this scenario, students may be forced into compliance in order to make a passing grade on an assignment. However, promoting an atmosphere of compliance may jeopardize a student's self-efficacy. Research by Greene, et al. (2002) found that student perceptions of classroom environments that support mastery and autonomy positively impacted self-efficacy. Inversely, the implication may be that classrooms supporting performance and compliance may negatively impact self-efficacy.

Seemingly, it is important that teachers make the effort through classroom practices to encourage students to adopt mastery goals or learning for the sake of learning (Dweck, 1986). A mastery orientation is more likely "...to foster long-term use of learning strategies and a belief that success is related to one's effort" (Ames & Archer, 1988, p. 265). Performance goals, on the other hand, have been positively related to shallow strategies and, in the case of performance-avoidance goals, negatively related to self-efficacy (Meece, Blumenfeld, & Hoyle, 1988; Middleton & Midgley, 1997; Pajares, Britner, & Valiante, 2000). However, when considering the present study, the task of encouraging English students to develop a genuine desire to learn how to improve their writing skills, the task seems far from easy.

Church, Elliot, and Gable (2001) claimed that the perceptions students develop of the classroom environment are directly linked to achievement goal

adoption, which is directly linked to performance and varying levels of intrinsic interest. Certain elements in the classroom environment seemed particularly influential on the type of achievement goals students adopted. For instance, mastery goal adoption was encouraged in classrooms where teachers presented the material in a manner perceived to be engaging, where there was a perceived absence of focus on evaluation, and where there was a perceived absence of harsh evaluation. A perception of harsh evaluation, in particular, actually inhibited the adoption of mastery goals. Performance-approach goals were adopted when the students perceived the teacher or classroom structure to focus on evaluation, while performance-avoidance goals were adopted when there was an evaluation focus combined with a perception of harsh evaluation practices (Church, Elliot, & Gable, 2001).

This study also provided other important findings. The use of an absolute grading structure demonstrated a positive relationship with intrinsic motivation. Church, Elliot, and Gable (2001) stated that "...achievement goals serve the role of proximal predictors of achievement outcomes..." (p. 53). In this case, mastery goal orientation positively predicted graded performance. In support of the linkage between goal adoption and intrinsic motivation in the Church, Elliot, and Gable model, Guthrie, Wigfield, and VonSecker (2000) found that mastery orientation associated with students' intrinsic motivation. To encourage the adoption of mastery goals Church, Elliot, and Gable (2001) recommended presenting material in an

engaging manner, de-emphasizing evaluation, and de-emphasizing the stringency of evaluations.

Research has demonstrated that students who perceive an emphasis of mastery goals in the classroom tend to use more effective strategies, to prefer challenge, to have a more positive attitude, and to attribute success to effort. On the other hand, students who perceive an emphasis on performance goals have reported more maladaptive motivational patterns and have attributed failure to ability (Ames & Archer, 1988).

Relevant to this study, the literature on perceptions of classroom goal structures seems to indicate that students are more likely to perceive their teacher as encouraging learning or a mastery orientation when she provides more instructional and emotional support. The utilization of rubrics, and moreover, the coupling of cognitive strategy instruction with the rubrics seem likely proponents in influencing students' perceptions of supportiveness in the classroom. If this is the case, then consequent effects may be demonstrated on students' adoption of achievement goals. Students who perceive the classroom goal structure to support mastery may be more inclined to invest in learning and a mastery orientation.

Achievement Goals

According to Dweck (1986), when an individual approaches, engages in, or responds to a situation for the purpose of attaining an end result, she is demonstrating an achievement goal orientation. The end result desired may be an increase in actual

competency or may be gains in the *semblance* of competency (Ames, 1992; Ames & Archer, 1988; Dweck, 1986; Elliot, 1999; Elliot & Harackiewicz, 1996). Ames (1992) suggested that beliefs, attributions, and affective concerns conglomerate to form the intention behind the action. In simpler terms, achievement goals are characterized by the motivation one exudes in performing a task.

Achievement goals have been dichotomized to represent those goals which are pursued out of a desire to master the material and those which are pursued as a means to achieve the semblance of competence, especially when compared others. Ames and Archer (1988) and Elliot (1999) categorized these goals as mastery and performance, respectively, while Dweck (1986) referred to them as learning and performance goals. Additionally, Middleton and Midgley (1997) referred to the mastery or learning goal orientation as a task goal. Individuals with a mastery goal orientation focus on the intrinsic value of learning and the association of effort with one's learning. Individuals with a mastery goal orientation strive to attain, or in other words to approach, their goal through effort and eventual task mastery.

In contrast, the focus of performance goal orientation is on ability and a sense of self-worth. Individuals with this orientation perform tasks for the purpose of demonstrating competence in relation to others. Although both of these definitions suggest an approach-orientation (e.g., approaching success through mastery or approaching success by establishing norm-related competence), performance goals may be adopted from an avoidance-orientation (Ames, 1992; Elliot, 1999; Elliot &

Harackiewicz, 1996; Middleton & Midgley, 1997). Some people exemplify performance-avoidance goals in that they perform to avoid personal failure or to avoid appearing incompetent in relation to others.

In fact, the threat and fear of failure seems to play an influential role in achievement goal orientation, particularly for those who adopt performance goals. If an individual's goal orientation is performance-based and he believes he is incapable of successful performance, there is a tendency for the individual to adopt maladaptive patterns of behavior or a sense of helplessness (Ames, 1992; Dweck, 1986; Elliot, 1999; Pintrich & Garcia, 1991). The term *helpless orientation* describes an individual who responds to the threat of failure by expending little to no effort towards the goal to avoid wasted effort and, more importantly, to "save face" (Dweck, 1986; Elliot & Harackiewicz, 1996; Pintrich & Garcia, 1991).

As stated, helplessness is an extension of a performance goal orientation which centers around looking good in comparison to others. As reported by Dweck (1986) and Ames (1992), those with performance goals, in general, incorporate maladaptive patterns such as low persistence when faced with adversity, higher levels of anxiety, a belief that intelligence is a fixed trait, singular or superficial strategies to meet the goal, and a view that low ability is the cause of failure. Because of the need to look good, minimally challenging tasks are most salient.

In contrast, students with mastery goals, even when perceived self-efficacy is low, tend to demonstrate adaptive patterns through desiring challenging tasks,

persevering in the face of adversity, experiencing lower levels of anxiety, seeing intelligence as changeable, and employing various strategies to reach goals. Failure, then, is viewed as the result of ineffective strategies which can be altered; mastery goal holders seem to be "failure tolerant" (Ames, 1992).

In one study, Pajares, Britner, and Valiante (2000) investigated the relationship among achievement goals, multiple motivational constructs, and gender in the areas of middle school writing and science by conducting hierarchical regressions and a multivariate analysis of covariance (MANCOVA). For the writing portion of the study, 497 sixth- through eighth-grade students completed a survey consisting of numerous subscales measuring achievement goal orientation, writing self-efficacy, writing self-concept, writing apprehension, and self-efficacy for self-regulated learning. Based on the data, Pajares, Britner, and Valiante (2000) claimed that task (mastery) goals were positively related with the following expectancy beliefs: writing self-efficacy, self-concept, and self-efficacy for self-regulation. On the other hand, performance-avoidance goals were negatively related to writing self-efficacy, whereas they were positively related to apprehension.

In sum, students holding mastery goals demonstrated higher writing self-efficacy, higher self-concepts related to writing, and greater perceived ability with regard to self-regulation. Prior lower achievers were more likely to adopt performance-related goals in order to look superior to others or to "save face." Those performing to avoid appearing less competent than peers expressed lower self-

performing to avoid appearing less competent than peers expressed lower self-efficacy and higher levels of apprehension. These findings suggest prior achievement is influential on self-efficacy, which in turn affects achievement goal adoption (Pajares, Britner, & Valiante, 2000).

Overall, mastery goal orientation has been advocated by researchers in general terms as the goal orientation most beneficial to learning. In addition to providing for adaptive patterns of behavior in approaching goals, it fortifies an important message to which students should attend- effort counts. Empowered with this notion, mastery-oriented students may focus on self-improvement rather than normative comparisons, and they may learn from experiences rather than engaging themselves by manipulating situations to capitalize on their existing state of knowledge or level of ability.

With this said, recent research has suggested that understanding the influences of achievement goals is more complicated than relegating those who report holding mastery goals as more adaptive and those who report holding performance goals as less adaptive (Pintrich, 2000). As complex as human behavior is, it is unlikely that individuals derive motivation in a singular fashion. Thus, multiple goals may combine to influence behavior. As the stimuli in each classroom afford students inestimable influences on the perceptions they develop, Pintrich (2000) suggested that multiple goals may be adopted.

In a study using 150 eighth- and ninth-graders, Pintrich (2000) found that

students who were identified as reporting a combination of high mastery and high performance goals responded to the classroom similarly to those who reported a combination of high mastery and low performance goals. Specifically, both groups reported similar scores for self-efficacy, cognitive strategy use, and metacognitive strategy use over time. Only those reporting low mastery and high performance orientations demonstrated maladaptive responses to experiences in the classroom. Of key interest, those who reported high mastery and high performance goals were not more anxious than those with low performance goals. Additionally, they did not express a decrease in positive affect or an increase in negative affect, and they did not engage in more self-handicapping behaviors or demonstrate less risk-taking behaviors. Those with high mastery and high performance goals even reported higher levels of task valuing over time in comparison to the other two groups. The implications from Pintrich's (2000) study indicated that even when students adopt a performance-approach orientation, maladaptive patterns of behavior may be averted if the student is simultaneously able to hold a mastery orientation.

In regard to the teaching of writing, research has provided that achievement goal orientation is related to self-efficacy (Pajares, Britner, & Valiante, 2000; Pajares & Johnson, 1994; Shell, Murphy, & Bruning, 1989) and that learning goals, in particular, are related to adaptive motivation patterns, while performance goals, in particular performance-avoidance (Pintrich, 2000), are related to maladaptive patterns (Ames & Archer, 1988). Other research has demonstrated a positive relationship

between learning goals and meaningful cognitive engagement and a positive relationship between performance goals and shallow cognitive engagement (Greene & Miller, 1996; Meece, Blumenfeld, & Hoyle, 1988). Additionally, mastery goal orientation predicted self-regulated learning (Middleton & Midgley, 1997). Thus, investigating the influence of coupling cognitive strategy instruction with a rubric on students' adoption of achievement goals seems worthwhile.

Self-Efficacy

An additional benefit from coupling cognitive strategy instruction with a rubric seems likely to surface in students' self-efficacy. When equipped with the writing criteria and the standards of performance and when presented strategies guiding how one may fulfill the criteria successfully, it seems that students would feel more empowered and more confident to complete the writing task in comparison to those who just received a rubric. Consequently, they should demonstrate higher self-efficacy.

Self-efficacy, has been defined as one's belief in his or her ability to produce or to perform in a specific domain (Bandura, 1995). In any given situation, people hold or formulate beliefs regarding their ability to perform specific tasks or skills. Bandura (1986) suggested this belief is the product of several interactive factors including possessing the skill level necessary for successful completion, one's current ability level, and personal history of successes or failures in a particular domain. As an opportunity to perform presents itself, self-efficacy serves as a mediating agent

between past experiences and the immediate task. The level of self-efficacy generated in the individual is a product of appraisal from past performance, vicarious experiences, verbal persuasions, outcome expectancies, and physiological reactions (Bandura, 1986; Pajares, 2003; Schunk & Pajares, 2002).

Whether the reward for task completion or skill performance is associated with intrinsic valuing, where interest and enjoyment are found to be inherent, or extrinsic valuing, where extrinsic rewards are salient (Greene & Miller, 1996; Miller, DeBacker, & Greene, 1999; Wigfield & Eccles, 2000), or goal attainment based on effort or ability (Ames, 1992; Ames & Archer, 1988; Dweck, 1986; Elliot & Harackiewicz, 1996), individuals may use self- and other-generated appraisals for establishing self-efficacy. Unfortunately, failure during past experiences may lower one's self-efficacy. Regardless, individuals seem to possess an appraisal system which provides beneficial or debilitating personal ability judgments based on prior experiences.

An individual does not have to experience consequences directly, however, for them to be influential. A potential influence on developing self-efficacy involves vicarious experiences, observing others who appear similar in knowledge or skills. In order to learn or to be influenced vicariously, Schunk and Pajares (2002) suggested that model similarity is important and that coping models, as discussed previously, serve as a better source to raise self-efficacy than mastery models.

In addition to past experiences and vicarious learning, Pajares (1994) reported

that invitations through verbal persuasion increase self-efficacy, while dissuasions diminish it. In a qualitative study, Pajares interviewed four participants, each representing one of the following four categories from a previous quantitative study: high self-efficacy, low ability; high self-efficacy, high ability; low self-efficacy, low ability; and low self-efficacy, high ability. The data revealed that whether the invitation or disinvitation was intentional, inviting behaviors (e.g., verbal persuasion or providing attention) increased self-efficacy.

Although the utility of increasing self-efficacy for those who have high ability might seem obvious, there may also be value in helping those with low ability to increase self-efficacy, particularly in the classroom. In order to move from one class or one grade to the next and, eventually, in order to graduate, students must complete designated course work. Many students are quick to realize that particular courses or course work poses learning challenges, and all too often they become easily discouraged and give up. Believing that regardless of the effort or strategy used there is no likelihood of success, these students may develop a sense of learned helplessness (Dweck, 1986). As a result, student effort ceases. If these students are not able to increase their self-efficacy enough to continue trying new strategies and to continue efforts towards success, they may never learn to rise above adversity in their learning, and they may fail to progress in school or to graduate. It may be critical that those with low ability and low self-efficacy recognize that present ability does not dictate future ability. They must view their present inabilities as unstable

characteristics and must find the motivation not to give up on the task at-hand.

Bandura (1986) proposed that one's self-efficacy was possibly as important as his actual ability. Self-efficacy influences the choices an individual makes, the effort one is willing to expend on a task, one's persistence in the face of adversity, one's thought patterns, and one's emotional reactions (Schunk & Pajares, 2002).

Pajares and Valiante (1999) conducted a study to determine the influence of middle school students' writing self-efficacy beliefs on their writing competence and to explore whether grade level and gender differences existed in writing self-beliefs. Seven hundred and forty-two (366 males and 376 females) sixth- through eighth-grade students at a primarily White, middle socioeconomic, public school initially completed multiple attitude instruments: a writing skills self-efficacy scale, Marsh's Academic Self-Description Questionnaire, Daly and Miller's Writing Apprehension Test, Eccles' Student Attitude Questionnaire, and Zimmerman et al.'s Self-Efficacy for Self-Regulated Learning scale. During a second session, the students wrote a thirty-minute essay evaluated on a five-point scale by the language arts teachers at the school.

A multiple regression analysis revealed that only the variable of writing self-efficacy was a significant predictor of writing competence. A MANCOVA, controlling for grade level and the interaction between grade level and gender, was then run. The data provided the following: Grade 6 students reported higher writing self-efficacy and reported higher scores related to the importance of developing good

writing skills; Grade 7 students demonstrated a drop in writing self-efficacy and their value regarding the importance of writing; Grade 8 students demonstrated a rebound, but still were not as strong as Grade 6 students, in writing self-efficacy and in the value they held toward writing. Both males and females reported similar levels of writing self-efficacy, while females, when responding comparatively, ranked their competence as superior to males.

Thus, Pajares and Valiante (1999) found that writing self-efficacy related positively to writing achievement, and they suggested self-efficacy be studied further as a motivator of writing. Although their findings, including the gender differences, are supported by other research (Middleton & Midgley, 1997; Pajares, Britner, & Valiante, 2000; Pajares & Johnson, 1994; Pajares & Johnson, 1996), investigators may take into consideration using multiple writing samples or a more holistic measurement of writing achievement. This study based the achievement score on only one thirty-minute writing response. Other research has suggested that acquisition of writing skills is a long-term process (McGroarty & Zhu, 1997; Zimmerman & Kitsantas, 1999).

Research has shown that self-efficacy is positively related to meaningful cognitive engagement (Greene & Miller, 1996) and that self-efficacy is related to writing achievement (Pajares, Hartley, & Valiante, 2001; Pajares & Johnson, 1994; Pajares & Valiante, 1999) or influential on writing achievement (Pajares, 2003; Pajares & Johnson, 1996; Zimmerman, 2000; Zimmerman, Bandura, Martinez-Pons,

1992). The research regarding the influence of self-regulatory practices on self-efficacy has not been as clear as Graham and Harris (1989) did not find statistical significance for this effect, yet other studies have found a significant link (Zimmerman & Kitsantas, 1999) or relationship (Zimmerman & Martinez-Pons, 1990).

In relation to my study, it seems that enabling students to use a writing rubric by modeling effective cognitive and self-regulatory strategies would enhance their self-efficacy. Another benefit, though, is still likely to result from the coupling of cognitive strategy instruction with a rubric. This coupling seems likely to promote meaningful cognitive engagement as students are equipped to coordinate writing skills and to invest more deeply in developing their text.

Cognitive Engagement

It has been suggested that deeper levels of cognitive processing result in more meaningful schematic representations (Ames, 1992; Ames & Archer, 1988; Meece, Blumenfeld, & Hoyle, 1988; Nolen, 1988). Meece, Blumenfeld, and Hoyle (1988) defined active [meaningful] cognitive engagement as "...students' reported use of metacognitive and self-regulation strategies rather than... help-seeking or effort-avoidant strategies" (p. 515). This definition seems indicative that active engagement involves a conscious effort to learn. As a result of this conscious effort, learning may be more meaningful as it is likely that an individual elaborates his thoughts by connecting them to existing schemata. This elaboration of thought is likely to be more

readily accessible and useable for the individual as it has been influential on or has become a part of schema for a particular topic. Various researchers have referred to this elaboration as meaningful/deep strategy use (Craik & Lockhart, 1972; Miller, et al., 1996), meaningful cognitive engagement (Greene & Miller, 1996; Meece, Blumenfeld, & Hoyle, 1988; Nolen, 1986), or effective learning strategies (Ames & Archer, 1988). Research by Ames & Archer (1988) and by Meece, Blumenfeld, & Hoyle (1988) demonstrated that intrinsic motivation and a mastery goal orientation, an orientation geared around the true desire to learn, were both positively related to meaningful strategy use.

Contrarily, shallow strategies (Greene & Miller, 1996; Meece, Blumenfeld, & Hoyle, 1988; Nolen, 1986) refer to approaches to learning based on short-term retention and rehearsal rather than elaboration. Shallow processing, then, does not afford the opportunity to build meaningful networks or connections with the information. Meece, Blumenfeld, & Hoyle (1988) reported that students demonstrating lower self-efficacy were more likely to employ shallow strategies; likewise, Nolen (1986) claimed that students who reported performance goal orientations, orientations based on performing for the purpose of appearing competent in relation to others, were more likely to utilize shallow strategies.

With regards to mastery and performance goals, Ames (1992) claimed that students with a mastery goal orientation spent more time actively engaged in task completion efforts than those with performance orientations. Because of this claim,

my study will include time involved in the task completion as a variable. This claim has been supported empirically, as follows.

Greene and Miller (1996) examined relationships among college students' goal orientation, perceived ability, cognitive engagement while studying, and course achievement. One hundred and six undergraduates enrolled in an educational psychology course completed a fifty-four item measure titled Motivation and Strategy Use Survey. Using multiple regression procedures for path analysis, all of the path coefficients were significant except for shallow engagement on achievement. While performance goals demonstrated a direct effect on shallow processing, learning goals and perceived ability demonstrated direct effects on meaningful cognitive engagement and with each other. Perceived ability and learning goals had an indirect effect on achievement, while the mediating variable, meaningful cognitive engagement, had a direct effect on achievement.

Although their findings regarding cognitive engagement differed from those of other researchers (e.g., Meece, Blumenfeld, & Hoyle, 1988), Greene and Miller (1996) concluded that individuals who hold performance goals utilize shallow cognitive engagement as compared with those who hold mastery goals utilizing meaningful cognitive engagement. Greene and Miller's argument seems logical since, unlike the instruments used by Meece et al., their measures were task specific, which is necessary for sound measurement with these constructs (Bandura, 1986).

Even though the research has suggested the benefits of meaningful cognitive

engagement, fostering meaningful engagement in students can be difficult. Recent research has investigated the causal link among learning strategies, rewards, and interest. McWhaw and Abrami (2001) found that students who reported high interest in the specific passages of text they were given were able to select more main ideas correctly than students with low interest in the text. The high-interest readers also reported using more metacognitive strategies than students who reported low interest. In fact, interest was the only main effect reported.

However, McWhaw and Abrami (2001) also found that students who were offered a reward for finding the main ideas in the text outperformed students who were encouraged to adopt a learning goal orientation for the task. The researchers suggested that "...there may be a threshold at which interest and reward may compete so that they cannot be combined by the learner to support the use of learning strategies. Below the threshold, the two sources do not compete" (p. 326).

Based on this research and in relation to teaching writing, it seems important that teachers assign topics that are likely to pique student interest to encourage the use of more metacognitive strategies. However, realistically teachers have curricular demands that at times may dictate the content covered or the assignment that must be completed. Faced with this predicament, teachers may resort to a reward system, possibly attached to the successful use of the rubric, to encourage the use of metacognitive strategies. The teacher, then, is a key player in monitoring the curriculum and student interest, and based on the results, crafting instructional

strategies so that meaningful strategy use is encouraged.

Research has also provided that teachers who structure their classroom around mastery learning, where the focus is on learning rather just performing tasks, encouraged student engagement (Ames and Archer, 1988; Butler, 1987). Both claimed that students who reported perceiving their classrooms as supportive of mastery goal adoption were more likely to report using meaningful cognitive strategies.

Meaningful cognitive processing has demonstrated a positive influence on achievement, whereas shallow engagement has had a negative influence (Ames & Archer, 1988; Danoff, Harris, & Graham, 1993; Graham & Harris, 1989; Greene & Duke, 2002; Greene & Miller, 1996; Greene, Miller, Duke, & Akey, 2002). When attempting to understand students' motivation to write and their writing performance, investigating cognitive strategy use seems worthwhile.

An area closely associated with meaningful cognitive engagement that is also likely to demonstrate benefits from coupling cognitive strategy instruction with a rubric is self-regulation. Students who are provided with explicit strategies to meet the criteria of a writing assignment seem likely to be better equipped with and to utilize more often strategies to regulate their own behavior.

Self-Regulation

One aim of education is to encourage students to become self-reliant in using knowledge and skills. In order to develop self-reliance, students must be able to

regulate their own learning and behaviors. This process, referred to as self-regulation, has been suggested to be a composite of three component processes: goal setting, self-monitoring, and self-reaction (Zimmerman & Kitsantas,1999). In other words, self-regulated behavior involves an individual establishing an objective, monitoring performance toward this objective, and reacting to the feedback provided in the monitoring process. The reaction may include continuing behaviors that seem to propel the individual toward goal attainment or may involve redirecting efforts. Ericsson, Krampe, & Tesch-Romer (1993) referred to this process of goal setting, performing, attending to relevant feedback, and concentrating on the monitoring process as *deliberate practice*. Inherent in this discussion is the implication that the learner must take an active role in developing a capacity for self-regulation. Zimmerman, Bandura, and Martinez-Pons (1992) claimed that "Knowledge of learning strategies does not ensure their effective and consistent use" (p. 674). Learners must be taught how to proceduralize or to use these strategies.

Of primary importance to the self-regulation process is goal setting. The adoption of achievement goals influences the quality of self-regulated learning (Covington, 2000). Influential on the adoption process are parents' aspirations for their children, self-efficacy beliefs, and the personal goals of the student (Zimmerman, Bandura, & Martinez-Pons, 1992).

Zimmerman and Kitsantas (1999) suggested that self-regulated behavior becomes progressively more automatized, and this progression evolves through four

levels: observation, emulation, self-control, and self-regulation. The first of these levels, observation, is demonstrated when an individual attends to the behaviors of others and learns through vicarious experience. This level is similar to the first two subprocesses of learning provided by Bandura (1986), attention and retention.

Next, the second level involves emulation, in which the learned behavior is performed. Whereas Bandura (1986) referred to this as motor reproduction in his subprocesses, emulation may include motoric and cognitive performance. Zimmerman & Kitsantas (1999) emphasized that emulation was more than mimicry or imitation; rather performance of learned behaviors generates within the individual and is based on this individual's mental representation regarding the performance.

The third level, self-control, is exemplified when an individual becomes capable of using strategies and monitoring processes on their own. In acquiring self-control, the strategies must be practiced independently from others. The component process of self-reaction and a system of self-rewards encourages the development of self-control, as effective self-monitoring may shape proficient performance.

The fourth level was termed self-regulation and refers to the performance of self-regulated behaviors at a level of automaticity. While performing at this level, an individual relegates little cognitive effort in regulating the strategies inherent to the performance, and as a result, is afforded the opportunity to place more cognitive effort toward performance outcomes (Zimmerman & Kitsantas, 1999). In the composition classroom, this shift in cognitive effort may be exemplified as a student develops the

capacity to perform strategies related to monitoring his or her own writing with little effort and can more readily focus on developing a unique sense of writing style.

In one study, Zimmerman and Kitsantas (1999) investigated the impact that the use of process goals, outcome goals, and a combination of the two had on writing revision skill, self-reactions, self-efficacy perceptions, and intrinsic interest. Eighty-four freshmen, sophomores, and juniors at an all-girl high school were provided the task of combining a group of "kernel" sentences into one nonredundant sentence. The differential treatment provided was that one-third of the girls were simply given an outcome goal of making the sentence combinations, while one-third was given process goals, goals attached only to the self-regulatory strategies that should be employed in combining the sentences. The last one-third was provided the process goals (self-regulatory strategies) until they demonstrated mastery of these strategies, and then the group was provided the outcome goal of simply making the sentence combinations. The researchers found that the group who adopted only the outcome goal demonstrated the lowest level of writing revision skill, the lowest perception of self-efficacy, and the lowest reports of intrinsic interest. Although the process goal-only group reported higher scores in all of these areas, the group that shifted from process to outcome goals demonstrated the highest levels of revision skill, self-efficacy, and intrinsic interest. The shift from process goals to outcome goals seemed to reflect the automatization of the self-regulatory process and the need to focus students' attention on the end goal and to allow for their unique approaches once the

base regulatory strategies are in place.

Additional research has indicated that having a repertoire of self-regulatory strategies was shown to positively relate to self-efficacy and to achievement, as gifted students reported the use of more self-regulated learning strategies than regular students (Zimmerman & Martinez-Pons, 1990). As intrinsic interest is encouraged, so is the adoption or sustenance of mastery goals. In particular, Zimmerman & Martinez-Pons (1990) suggested that instructional approaches that enhance self-efficacy and utilize mastery learning may be particularly salient for junior high and senior high students. Additionally, the development of self-regulated behavior may be more accessible to this age group. Zimmerman and Martinez-Pons (1990) found that the number of self-regulated learning strategies positively related to grade level. Specifically, in their study, eighth-graders demonstrated a significant increase in the self-regulatory processes of goal setting and planning over fifth-graders. Although the eleventh-graders demonstrated a significant decline in the use of these same processes when compared to the eighth-graders, Zimmerman and Martinez-Pons (1990) suggested that this result was likely due to more covert use of the strategies.

Relevant to this study is the support for using explicit strategy instruction to encourage self-regulation. When students are simply given a rubric, they may or may not possess strategies for effectively meeting the criteria, and those less proficient writers are likely not to have them. When students are provided strategy instruction, they at least have an awareness of and an opportunity to embrace strategies. As with

any variable related to classroom performance, motivation may encourage or discourage students to utilize these strategies; regardless, the students experiencing cognitive strategy instruction should be better equipped to regulate their own behavior.

Summary

In conclusion, when designing instruction, researchers and practitioners have claimed that an analysis of the students and of the task is of primary concern, as the instructional strategies must fit the needs of the students and must be delivered in a manner to engage and challenge the students without overwhelming them (Dick & Carey, 1996; Smith & Ragan, 1999). Rubrics serve as one tool to encourage engagement by informing students of performance criteria and standards so that they are empowered with knowledge of teacher expectations and they are provided guidelines for their assignment (Maxwell & Meiser, 2001). However, research has demonstrated that students benefit from strategy instruction that equips them with specific approaches to fulfilling the performance standards (Danoff, Harris, & Graham, 1993; De La Paz & Graham, 2002; Zimmerman & Kitsantas, 1999). These benefits may be revealed in numerous areas.

First, Church, Elliot, and Gable (2001) have suggested that what takes place in the classroom leads to students' perceptions of the classroom goal structures. Specifically, if students perceive that teacher behaviors and the expectations placed on students are supportive of learning, it seems they would be more likely to view the

classroom as promoting a mastery orientation. If students perceive an emphasis on evaluation, especially harsh evaluation, it seems they would be more likely to view the classroom as promoting a performance orientation.

Relevant to my study, if given performance criteria via a rubric without overt strategy instruction regarding the use of the rubric, students may perceive an emphasis on the performance and sense less support from the teacher than if strategy instruction had been provided. The rubric itself may be accepted by the students as somewhat supportive given that it provides expectations prior to assessment; however, when coupled with strategy instruction, the students may perceive more support as they learn to use the rubric for formative feedback during writing and revision and as a source of reminders guiding self-regulatory behaviors. Thus, I expect to see a beneficial effect for the cognitive strategy group.

Second, achievement goal adoption may be influenced differentially when students are given a rubric versus when they are additionally provided strategy instruction. When students perceive academic support, they are more likely to adopt mastery goals for themselves (Ames & Archer, 1988; Butler, 1987; Church, Elliot, & Gable, 2001). Seemingly, the provision of cognitive strategy instruction would be viewed as supportive of learning, so I would expect students receiving this treatment to demonstrate a differential benefit in their adoption of mastery goals. As a result the students should be more likely to invest in more adaptive forms of motivation and behavior, including self-efficacy, cognitive engagement, and self-regulation.

First, I would expect that students receiving cognitive strategy instruction as compared to those who do not would demonstrate gains in self-efficacy. Research has indicated that students who are equipped with strategies for a particular task are more likely to feel competent in completing that task (Danoff, Harris, & Graham, 1993). Second, these students should also be better equipped to engage more meaningfully in the task (Meece, Blumenfeld, & Hoyle, 1988; Middleton & Midgley, 1997). I would expect that those receiving cognitive strategy instruction would be empowered to concentrate not only on the shallow tasks involved in writing, such as focusing on mechanics, but would be able to extend their focus onto more complex tasks, such as writing with consideration to content and style. Third, those receiving cognitive strategy instruction should have a repertoire of self-regulatory strategies at their disposal. Whether or not these students use them and the quality to which they regulate their behavior is dependent on their motivation (Covington, 2000). However, it seems logical that students would rely on these strategies when the need to use them arose. Overall, the literature has suggested that through these adaptive behaviors, cognitive strategy instruction has been a predictor of achievement (Danoff, Harris, & Graham, 1993; Stoddard & MacArthur, 1993; Zimmerman & Martinez-Pons, 1990).

Given the importance of good writing on students' prospects for college and for successful employment, there is an evident need to enable students to become the best writers they can be. My review of literature explored known relationships amongst numerous motivational variables and has provided a rationale as to how the

use of rubrics and cognitive strategy instruction may influence students' motivation and learning regarding writing. This study was designed to test this rationale.

Specific Research Questions

1. Are there significant main effects for and interactions between the treatment (the rubric overview provision or the rubric plus overt cognitive strategies provision) and time (the pretest, in some cases a mid-measure, and the posttest) for the following variables: (a) self-efficacy; (b) learning goals and performance goals; (c) perceived classroom goal structures; (d) self-regulation, time spent on the writing task, and the number of revisions made; (e) the types of revisions made; and finally, (f) overall writing performance?

2. If there are significant main effects or interactions, to what do the higher and lower achievers in each intervention attribute the changes in their self efficacy, their adoption of academic achievement goals, their perception of classroom goal structures, their self-regulation, the time spent on completing the writing task, the number and quality of revisions made, and writing achievement?

CHAPTER 3

RESEARCH METHODS

This research was an experimental study of the influence of cognitive strategy instruction, coupled with a rubric, on high school students' writing achievement and motivation. In particular, the outcome variables were writing achievement, writing self-efficacy, achievement goal orientation (mastery, performance-approach, and performance-avoidance), perceptions of classroom goal structures (mastery, performance-approach, and performance-avoidance), self-regulation, and two elements potentially indicative of self-regulated behavior, the amount of time spent on the writing and the number and quality of revisions made during writing performance.

The study had as its focus cognitive strategy instruction, so the treatment groups reflected those not receiving cognitive strategy instruction and those receiving this instruction. Both groups utilized writing rubrics. I chose not to include a no rubric group as writing achievement and self-regulation were being assessed regarding specific criteria, and I made the assumption that any intervention making the criteria explicit (such as an overview of the rubric or an overview coupled with cognitive strategy instruction) would have an advantage over no intervention or no awareness of the criteria for evaluation. Additionally, instructional design methodology has emphasized the importance of making students aware of evaluative criteria (Dick & Carey, 1996; Smith & Ragan, 1999).

Two groups were used in this study. Students in the rubric-only group received a scoring rubric coupled with an overview of the rubric that described the evaluative criteria. In this study I used the rubric-only treatment as a control group because the achievement and motivation variables were assessed by instruments closely tied to the scoring rubric. I made the assumption that an awareness of these criteria would likely benefit student performance and motivation.

Like the rubric-only group, the cognitive strategy group received a copy of the writing rubric; however, this group additionally received cognitive strategy instruction regarding the use of the rubric. The focus of this study was intended to demonstrate any disparity between the rubric-only group described above and the treatment group.

Several repeated measures MANCOVAs were run to determine whether significant differences existed between the two groups. Given the importance of writing skills on a student's education and the complexity of designing lessons that effectively teach and assess writing, there is a definite need to understand the influence of current practices, such as using rubrics, and the potential influence of incorporating research-based strategies, such as cognitive strategy instruction.

Participants

One hundred and eighty-four students were recruited from a large, predominantly Caucasian, middle to upper-middle class high school in the Southwest United States. One hundred and sixty-four students actually completed the study, with 82 students randomly assigned to each the rubric-only group and the cognitive

strategy group. The voluntary participants were students enrolled in one of five participating teachers' English classes. Once teachers agreed to allow their students to participate and once the participating students returned signed consent forms, I randomly divided the participants into the two groups. During each of the data collection sessions, these two groups met outside of the regular English class setting at two separate locations on the school's campus.

Seventy-six (46%) of the participants were male, while 88 (54%) were female. Three (2%) of the students were sophomores, 109 (66%) were juniors, and 52 (32%) were seniors. The students ranged in age from 16 years to 20 years. Ethnicity was reported as follows: 11 (7%) African Americans, seven (4%) Asians/Pacific Islanders, 117 (71%) Caucasian, seven (4%) Hispanic, six (4%) Native American, one (1%) Other, and 15 (9%) Multiple Ethnicities. 158 (96%) of the participants reported that they planned to attend college, while six (4%) reported that they did not intend to go to college. One hundred and fifty-five (95%) reported English as their first language; nine (5%) reported that English was not their first language. Finally, one (1%) of the participants reported typically earning a grade of F on writing assignments, while eight (5%) reported earning a D, 24 (14%) reported earning a C, 75 (46%) reported earning a B, and 56 (34%) reported earning an A.

Data Sources

Demographics for Students Form. The items on the "Demographics for Students" form (Appendix A) asked the students to provide their teacher's name, their

gender, their grade level, their ethnicity, whether or not they planned to attend college, and whether or not English was their first language.

Demographics for Teachers Form. The "Demographics for Teachers" form (Appendix B) contained items asking the teachers to indicate whether or not they were certified to teach English, the number of years they had taught English, their gender, and their ethnicity.

Writing Appraisal Inventory Pre- and Post-Measure. The Writing Appraisal Inventory (See Appendices C & D for pre- and post-measures) was used to assess students' self-efficacy or perceived ability in relation to completing a specific writing task. Designed following the guidelines provided by Bandura (1995), this instrument was created by me and was composed of eight items that assessed components of the writing rubric (Appendix L). Students were asked to assign a number representing how certain they were that they could successfully complete each of the tasks described. Participants selected from 0 (No chance of completing the task) to 100 (Completely certain about completing the task); as such, the scores were represented as a continuous variable.

Pajares, Hartley, and Valiante (2001) claimed that using a scale with greater discrimination, such as the zero to one hundred scale, provided stronger psychometric results than using a five- or seven-point Likert scale. These researchers were able to account for more variance with the zero to one hundred scale and had some variables report significant values only when using the scale with greater discrimination versus

the seven-point scale. Scales similar to the one designed for this study have reported alpha coefficients of .89 or greater (Shell, Murphy, & Bruning, 1989; Pajares, Hartley, & Valiante, 2001; Pajares & Johnson, 1996; Pajares & Valiante, 1999).

Several types of validity and reliability were considered regarding the use of this instrument. Issues regarding construct and face validity were addressed in several steps. First, I operationalized the definition of self-efficacy for this study by referencing related empirical studies (Shell, Murphy, & Bruning, 1989; Pajares, Hartley, & Valiante, 2001; Pajares & Johnson, 1996; Pajares & Valiante, 1999) and by considering whether the items measured what they intended to measure. Second, I gathered feedback regarding content validity from experts in the field of motivation. Third, after making the changes suggested by these experts, I piloted the instrument with 22 high school students in the same school district where the study took place. Reliability analyses reported a Cronbach's alpha of .96. In addition to completing the instrument, the pilot participants were involved in a debriefing session to provide feedback regarding their comprehension of the items. The students reported that the items were easily understandable and that no revisions were needed for clarity.

PALS Achievement Goal Orientations- Revised. Another measure used was the PALS Achievement Goal Orientations- Revised survey (Midgley et al., 2000) (See Appendices E & F for pre- and post-measures). Ames (1992) described achievement goal orientation as the process of approaching, engaging in, or responding to a behavior for the purpose of achieving something. When an individual involves herself

in a task because of the intrinsic value or from a true desire to learn or to master the task, she is said to exemplify a learning goal orientation (Dweck, 1986) or a mastery goal orientation (Ames & Archer, 1988; Elliot 1999). When an individual participates in the task for the purpose of demonstrating superiority when compared to others, the goal orientation has been classified as performance-approach by Dweck (1986), Ames and Archer (1988), and Elliot (1999). These researchers also claimed that if performing a task to avoid looking incompetent or to avoid negative repercussions, the individual is said to exemplify performance-avoidance orientation. All three of these orientations were represented by items in this scale.

The achievement goals scale included fourteen items adapted from the Patterns of Adaptive Learning Survey (PALS) (Midgley et al., 2000) and used in a similar form in another study (Pajares, Britner, & Valiante, 2000). The participants were asked to respond to the items by selecting a number (1 through 5) on a Likert-type scale anchored by "Not At All True" (1) and "Very True" (5). An achievement goal measure based on middle school writing was created by Pajares et al. (2000) from the PALS and reported alpha coefficients of .89 for the task scale, .77 for the performance-approach scale, and .83 for the performance-avoid scale (Pajares, Britner, and Valiante, 2000). I piloted this measure in the same manner as the Writing Appraisal Inventory, and my pilot data revealed the following reliability coefficients: the mastery scale with five items ($\alpha = .93$), the performance-approach scale with five items ($\alpha = .82$), and the performance-avoidance scale with four items ($\alpha = .81$).

Perception of Classroom Goal Structures Scale. (See Appendices G & H for pre- and post-measures.) Scores from this scale were designed to reveal students' beliefs regarding the types of academic goals the teacher or teacher practices communicate.

The scale included fourteen items adapted from the Patterns of Adaptive Learning Survey (PALS) (Midgley et al., 2000). Items were adapted so that the students were instructed to answer the items based on their regular English classroom setting and the setting provided during the study. Again, students were asked to respond to items by selecting a number (1 through 5) on a Likert-like scale anchored by "Not At All True" (1) and "Very True" (5). Pilot data on 22 students revealed reliability coefficients as follows: mastery goal subscale of six items ($\alpha = .81$), performance-approach subscale of three items ($\alpha = .60$), and performance-avoidance subscale of five items ($\alpha = .82$). Although the reliability coefficient for the performance-approach subscale was low ($\alpha = .60$), I decided to use the subscale as it was since my pilot group included a small sample and Midgley et al.(2000) reported an acceptable reliability coefficient ($\alpha = .71$) when used in their study.

Self-Regulation Scale. (See Appendices I & J.) Self-regulated behavior involves *deliberate practice* (Ericsson, Krampe, & Tesch-Romer, 1993), in which an individual establishes an objective, monitors performance toward the objective, and reacts to the feedback provided during the monitoring process (Zimmerman & Kitsantas, 1999). The reaction may include continuing behaviors that seem to propel

the individual toward goal attainment or may involve redirecting efforts. The Self-Regulation scale was created from suggestions provided by Harris and Graham's (1992) Self-Regulated Strategy Development (SRSD) model, elements of the writing process (Sebranek, Meyer, & Kemper, 1996), and the criterion provided on the writing scoring sheet (See Appendix L).

This instrument (pre- and post-measures) had thirteen items, and it was written to assess students' regulation of their own behaviors while completing a writing task. Students were asked to respond to the items by selecting a number (1 through 6) on a Likert-like scale anchored by "Strongly Disagree" (1) and "Strongly Agree" (6).

As with the other instruments, validity was assessed by experts in the field of motivation. Additionally, evidence of concurrent validity was gathered during the piloting process. A pilot study involving 22 students revealed that scores as reported by the self-regulation instrument were positively related to self-efficacy (r = .460) and mastery goals (r = .654). The relationship between these constructs has been well-documented (Ames & Archer, 1988; Covington, 2000; Dweck, 1986; Pajares & Johnson, 1996; Zimmerman & Martinez-Pons, 1990). The reliability analysis with the pilot data yielded a Cronbach's alpha of .84.

Writing Instruction Sheet. (See Appendix K): This instrument provided the instructions for completing each writing activity. This sheet included one of three topics that was assigned randomly, with an equal number of groups receiving each

one of the topics, during each data collection session.

This instrument instructed the students to write a two-page essay in pen that addressed their topic. The students were required to use a pen so that the researcher could track the number of revisions the students made. The students were instructed to mark through any text they wished to revise. In the instructions, the students were also reminded to "look at the scoring criteria" provided by the rubric. Once finished with the writing, the students were instructed to turn their papers face down and to raise their hands.

The writing topics were chosen because they seemed relevant to the students' lives and because it was believed that all of the participants would have the necessary prior knowledge. Each topic instructed the students to address issues related to the *what*, the *how*, and the *why* of the topic. The Writing Instructions sheet, along with all three topics, were piloted to assess readability and student comprehension. Additionally, my research assistant and I were given the opportunity to practice scoring the writings using the rubrics so that by the time of the actual study we would be somewhat calibrated in our evaluations.

Scoring Sheet. (See Appendix L): This measure was a writing rubric used to determine the students' achievement scores on each of the writing samples. This scoring sheet included eight criteria and used a zero to three range for possible scores on each criterion. The criteria on this instrument reflected the areas assessed on the Writing Appraisal Inventory (See Appendices C & D). Several published rubrics and

guidelines for rubrics were accessed to guide the creation of the instrument designed for this study (Maxwell & Meiser, 2001; "MCAS Mentor Rubrics," 2003; "Really Fine Rubrics," 2003; "Rubric Basics," 2003; "SDCOE Rubrics," 2003; "TAKS Rubrics," 2003). The rubric was piloted for readability and so that I could determine its utility as a scoring device. Practice with the pilot data was indicative that the rubric was user friendly, as no concerns arose for me or my research assistant, and our calibration practice revealed an inter-rater reliability coefficient of .80.

At the bottom of the rubric, four lines were provided so that students' revisions in four areas could be summed. To investigate whether the teaching of cognitive strategies influenced cognitive engagement and self-regulation through the number and types of revisions students made, I counted the revisions on the students' papers based on each of the following categories: mechanics (capitalization, punctuation, spelling), grammar usage, style (diction, sentence structure and clarity), and content (the addition or deletion of words, phrases, or sentences). The same calibration practice with my research assistant, as described above, revealed the following inter-rater reliability coefficients: mechanics-related revisions (.83), grammar-related revisions (.83), style-related revisions (.88), and content-related revisions (.82).

Student Interviews. After I finished conducting the data collection sessions, a small number of students (around four) representing those who were high achievers and those who were low achievers from each treatment group were interviewed.

These individuals were chosen randomly by me. Appendix M provides a list of nineteen interview items that guided the dialogue regarding participants' perceptions of the classroom activities (including the researchers' instruction) associated with the rubrics and writing activities; their perceptions regarding their level of self-regulation during the writing activities, their sense of self-efficacy regarding the writing tasks, their beliefs about the types of goals (mastery or performance) they had during the study; and their attributions regarding influences on their performance and motivation during the study. Before the questions were used, face validity was assessed by several experts in the field of motivation. All recommended revisions to the items were made. The interview items were also piloted to check for student comprehension. Students were asked if the items were understandable and what changes, if any, would make the items clearer. No suggestions for change were provided by the pilot group. During the actual study, the interviews lasted approximately twenty-five minutes. Follow-up questions for elaboration or for clarification purposes were asked as deemed necessary. These follow up questions are not listed in the appendix.

Procedures

I proposed this study to the English Department at a high school located in the Southwest United States. English teachers were recruited to allow their students to participate. Teachers agreeing to participate signed consent forms (Appendix P).

I visited the classes and solicited student participation in the study. Student

Assent forms and Parent Informed Consent forms were distributed to all students. Only students with signed consent forms were allowed to participate. Teachers were provided a list of students who had been assigned to Group A and Group B each period of the school day, but neither the teachers nor the students were told which of the groups was the rubric-only one and which was the cognitive strategy one. Two classrooms were reserved on the campus, so that Group A reported to one, and Group B reported to the other. I conducted the sessions in one room, while my research assistant conducted the sessions in the other. To control for experimenter bias, my assistant and I led an equal number of groups undergoing each intervention.

During the first data collection session, the assigned researcher had the participants complete the Demographics sheet, the PALS Achievement Goal Orientations- Revised Pre-Measure, and the Perception of Classroom Goal Structures Pre-Measure. All of the surveys were distributed as a packet.

On this same visit, the researcher assigned one of the three writing topics in Appendix K to each of the participating groups during each period of the day so that all topics were represented equally during the first data collection session. The students were provided with a copy of the Writing Instruction Sheet with only that day's assigned topic present. The students were also provided a copy of the scoring sheet that, along with the instruction sheet, was read to them by the assigned researcher prior to beginning the writing task. The students were then instructed to complete the Writing Appraisal Inventory Pre-Measure. Next, the students were

instructed to begin the writing task and were allowed twenty-five minutes to complete it. The students worked independently on the writing assignment and were asked to write only in pen and to make any revisions by crossing out unwanted text and by writing in revised forms. Per the instruction sheet, the students raised their hands as they finished the writing, and the assigned researcher noted the time of each student's submission on the back of the student's paper. Once all of the students completed the writing task, the students were instructed to complete the Self-Regulation Pre-Measure, which was included in the original packet. After all students finished completing this form, the packets were collected.

Within the next week, I graded the students' writings by utilizing the rubric. Additionally, my research assistant scored a random selection of writings representing each treatment so that inter-rater reliability could be established. The procedures differed somewhat for the rubric-only group and for the cognitive strategy group at this point.

Rubric-Only Group. This group underwent an intervention similar to the "outcome goal group" in research conducted by Zimmerman and Kitsantas (1999), in that the group's attention was focused toward the evaluation criteria presented on the scoring sheet. About a week later, after the papers had been scored by me and a random sample of the papers had been scored by the research assistant, we distributed the papers back to the students. For the rubric-only group, we encouraged the students to look at the criteria on which the paper was scored. No specific instruction related to

self-regulatory strategies the students might choose to use was provided. If the students asked questions regarding the rubric or the assignment, we responded to them. As soon as this opportunity to ask questions was exhausted, the students submitted their papers and scoring sheets.

Roughly a week and a half after the first data collection session, the research team returned to have the students complete a second writing assignment. As with the first assignment, no explicit strategy instruction was provided; the students were simply given another copy of the rubric and another copy of the instruction sheet with a new topic. The students were allowed twenty-five minutes to complete the writing task. After the second session was conducted, the writings were evaluated and shared with the students in the same manner as the first set of writings.

During the third and final data collection session, the participants completed post-measures for all of the surveys and the third writing activity in the same manner as the first data collection session. After I scored the writings and a sampling was again scored by my assistant, we showed the participants their ratings and collected the papers once again.

Cognitive Strategy Group. This group underwent an intervention similar to the "process goals and outcome goals group" in research conducted by Zimmerman and Kitsantas (1999). The cognitive strategy group's attention was focused on learning and using self-regulatory and cognitive strategies based on the criteria presented on the scoring sheet. In addition to following the steps detailed above in the rubric-only

group, this group was provided explicit instruction regarding self-regulated writing and the use of the writing rubric. My assistant or I served as the "teacher" and utilized specific approaches to teaching self-regulated behavior (See Appendix Q).

The only difference in the treatment between the groups was the instruction regarding the overt use of cognitive strategies. This instruction was provided during the feedback sessions. Unlike with the rubric-only group, the assigned researcher used one or more of the writing samples collected during the pilot study to model the use of self-regulatory strategies while writing or revising the paper (See Appendix R). The strategy instruction was designed incorporating the five areas presented in Appendix N and based from Harris and Graham's (1992) Self-Regulated Strategy Development Model. Appendix O provides a copy of the lesson plans used while teaching the overt cognitive strategies. Students were instructed to look at their own writings and to practice applying self-regulatory strategies based on the rubric to their first assignment. Students' questions were answered regarding the assignment and the evaluations. Then, the writings and rubrics were collected.

Interview Sessions. Using the scores from the rubrics, I identified a small number of students from each of the interventions who performed well and poorly on the writing achievement scores. These students were invited to participate in a one-on-one interview with me based on the items presented in Appendix M. Each interview was conducted in the school's lecture center. The interviews began with the participants providing a pseudonym that would be used in the event their comments

were published. In order to minimize validity threats due to students' attitude toward the study, each participant was reminded of the importance of the study, the need for honest feedback, and the protection of his or her identity through the use of a pseudonym. The participants were informed that there were no right or wrong answers. Each interview lasted no longer than twenty-five minutes.

CHAPTER 4
RESEARCH FINDINGS

The purpose of this study was to determine the extent to which teaching overt cognitive strategies when using a writing rubric influenced high school students' motivation, their perceptions of classroom goal structures, their ability to regulate their own writing behaviors (including factors for time and the number and type of revisions), and their writing achievement. Prior to addressing the specific research questions posed by this study, a couple of procedures were conducted. First, the data were checked to ensure that all scores fell within the minimum and maximum ranges for each instrument. Second, I checked to make sure that students had complete sets of data.

On eighteen occasions, participants had missing values, so I replaced the missing values with the mean score for each affected item. During the first data collection session nine students failed to report a score for one of the items in the packet of instruments. Three of these nine students left Item 8 ("In our class, it's important not to look dumb") unanswered; the other six students left a different, random item unanswered. During the last data collection session, four students left different, random items unanswered. Additionally, five of the students had been involved in an altercation at the school just prior to this last data collection session and were required to report to the administrative office of the school. They had

completed their surveys, but were unable to complete their writings and were not available for a make up session. Writing achievement means were substituted for these five students for Writing 3.

In this chapter, reliability coefficients for each of the instruments have been reported. Then, the results of the repeated measures MANCOVA analyses have been presented. Finally, results from the qualitative data analysis have been provided to demonstrate student attributions for the significant interactions found in the study.

Reliability of Instruments

In all, eight scales were used during the course of the study. Cronbach alphas were used to report reliability coefficients for each of these scales. Three of the scales were from the PALS Achievement Goal Orientations-Revised instrument (Midgley et al., 2000). The first scale used five items to assess self-reports of a mastery goal orientation (pre-measure: $\alpha = .88$; post-measure: $\alpha = .92$). The second self-report scale also included five items and assessed performance-approach orientation (pre- and post-measure: $\alpha = .91$). The third scale, a self-report of performance-avoidance, was composed of four items (pre-measure: $\alpha = .84$; post-measure: $\alpha = .88$). The coefficients provided by the data in this study for all three scales surpassed the alphas reported by Midgley et al. (2000), as they provided alphas of .85 for the mastery scale, .89 for the performance-approach scale, and .74 for the performance-avoidance scale.

Three more scales were from the Perception of Classroom Goal Structures instrument adapted from Midgley et al.'s (2000) Patterns of Adaptive Learning

Survey. Measuring perceptions of classroom goal structures encouraging mastery goal orientation, the first scale included six items (pre-measure: $\alpha = .85$; post-measure: $\alpha = .89$). The second scale, perceptions of classroom goal structures encouraging performance-approach, included three items (pre-measure: $\alpha = .69$; post-measure: $\alpha = .71$). The third scale included five items assessing perceptions of classroom goal structures encouraging performance-avoidance (pre-measure: $\alpha = .88$; post-measure: $\alpha = .89$). Again, the coefficients provided by the data in this study surpassed the alphas reported by Midgley et al. (2000) for the mastery scale and the performance-avoidance scale, as they provided alphas of .76 for the mastery scale and .83 for the performance-avoidance scale. The alphas in this study for the performance-approach scale were consistent with Midgley et al.'s coefficient of .70.

Another scale used was the Writing Appraisal Inventory designed according to guidelines provided by Bandura (1995). A scale assessing writing self-efficacy, this instrument included eight items and yielded an alpha of .93 on the pre- and post-measures. Similar scales have reported coefficients in the same vicinity at .89 or higher (Shell, Murphy, & Bruning, 1989; Pajares, Hartley, & Valiante, 2001; Pajares & Johnson, 1996; Pajares & Valiante, 1999).

The final scale was used to assess self-regulation. Composed of thirteen items, this instrument, created from suggestions provided by Harris and Graham (1992), reported coefficients of .88 and .92 on the pre- and post-measures, respectively. As this scale was created very specifically to fit this study, comparative reliability scores

were not available.

In addition to reporting the reliability for the instruments described above, I calculated inter-rater reliability coefficients for the writing rubric created for this study. Although I scored the writings during the course of the study, my research assistant scored a random sampling from each of the treatments during each writing collection session so that reliability coefficients could be determined. Both of our ratings for each criterion on the rubric (achievement-related and revision-related) were entered into SPSS. While entering the data, I noticed that our scoring was somewhat consistent in that discrepancies between raters were generally within one point. Our similarity in scoring was likely due to practice evaluating the pilot study data. Correlations were run for overall writing achievement and for each type of revision. inter-rater reliability for achievement scores was .83. Regarding revisions, the reported alphas were as follows: mechanical revisions equaled .83, grammatical revisions equaled .83, style revisions equaled .88, and content revisions equaled .82.

Repeated Measures Analyses

Doubly multivariate repeated measures MANCOVAs were run in order to detect "...whether the difference between the pretest and posttest means of the experimental group... [were] significantly greater or less than the difference for the control group" (Gall, Borg, & Gall, 1996, p. 536). Initially, MANOVAs rather than MANCOVAs were run because Maxwell and Howard (1981) suggested that an ANCOVA model is not the preferred method in two situations susceptible to

response-shift bias: "when self-report measures are used in a pre/post design to evaluate interventions" and "when the design is a multivariate pretest-posttest design" (pp. 750-751). Both of these situations apply to my study.

However, initial MANOVA analyses revealed significant differences between the groups even though they were randomly assigned. A check of the demographic information provided that only one of the demographic variables assessed, a self-report of the typical writing grade earned, might explain a portion of the significant differences between the groups. As a result, MANCOVA analyses were run using the self-report of the typical writing grade earned as a covariate.

An alpha level of .05 was used when conducting the statistical tests, overall, but since three MANCOVAs were run, I made a Bonferoni adjustment setting the alpha at .0167 for each MANCOVA. Several MANCOVAs were run for the whole group (rubric-only and cognitive strategy groups combined), with each MANCOVA grouping certain variables together based on two factors: whether the variables were assessed two or three times during the course of the study and how the variables logically grouped together. The first MANCOVA run included writing self-efficacy, achievement goals (mastery, performance-approach, and performance-avoidance), and self-regulation, as these variables were assessed by pre- and post-measures, and they all reflected constructs regarding motivation. The second MANCOVA included the three orientations for perceptions of classroom goal structures (mastery, performance-approach, and performance-avoidance), as they were also assessed in pre- and post-

fashion, and they reflected perceptions of teacher behaviors that might encourage the adoption of certain achievement orientations. The third MANCOVA included the number of minutes students spent working on the writing assignment, the overall number of revisions made during the writing activity, the number of revisions made in four specific areas (mechanics, grammar, style, and content), and writing achievement. These variables were grouped together as they were assessed three times during the course of the study, and they all reflected measures directly linked to the writing assignments.

To further support the grouping of these variables in the above manner, I looked at the correlation matrix (Appendix S) for evidence that the variables in each MANCOVA were somewhat related. All of the MANCOVA 1 variables were significantly related to one another with the exception of performance-avoidance goals and writing self-efficacy ($r = .127$). The MANCOVA 2 variables were also significantly interrelated with the exception of perceptions of classroom mastery goals to perceptions of classroom performance-avoidance goals ($r = .134$). Additionally, MANCOVA 3 variables for the most part demonstrated significant interrelatedness, except for writing achievement with mechanical revisions ($r = .141$) and with stylistic revisions ($r = .145$). None of these exceptions were cause for removing any of the variables from the sets used in the MANCOVA analyses.

Prior to running MANCOVAs for the whole data set, I checked for equal cell sizes. For the first two MANCOVAs, the cell sizes were equal with 82 participants

each. For the third MANCOVA, the cell sizes were slightly different, as 72 participants were in the rubric-only group and 67 were in the cognitive strategy group. Group membership differed on this analysis due to missing data for the second writing sample. For the first two MANCOVAs, Box's test was not significant; thus, the homogeneity of variance assumption was not violated. However, the third MANCOVA evidenced a significant score for Box's test, and, as will be reported, corrections were made for this violation.

Repeated Measures MANCOVA 1: Self-Efficacy, Achievement Goals, and Self-Regulation.

Table 1 presents MANCOVA 1 means, standard deviations, minimum and maximum scores, and sample size for the pre- and post-measures for the rubric-only group, the cognitive strategy group, and the two groups combined.

The first MANCOVA demonstrated significance at the multivariate level for between-subjects factor of the self-report of the typical writing grade earned, as the Wilks' Lambda reported an $F(1, 157) = 13.301$, $p < .000$, accounting for 29.8% of the variance at an observed power of 1.000. The within-subjects factor of TIME*TREATMENT barely missed significance, as the Wilks' Lambda reported an $F(1, 157) = 2.794$, $p = .019$, accounting for 8.2% of the variance at an observed power of .686. Mauchly's test was not significant, so there was no apparent violation of the sphericity assumption.

Table 1

Descriptive Statistics for Motivation and Achievement Variables of MANCOVA 1

Variable	Mean	Std Deviation	Minimum	Maximum	n
Pre Writing Self-Efficacy					
Control	578.77	139.12	180.00	790.00	82
Cog. Strat.	570.24	133.56	254.00	790.00	82
Overall	574.51	136.02	180.00	790.00	164
Post Writing Self-Efficacy					
Control	535.09	161.93	20.00	800.00	82
Cog. Strat	550.78	140.92	250.00	782.00	82
Overall	542.93	151.53	20.00	800.00	164
Pre Mastery Goals					
Control	17.74	4.57	7.00	25.00	82
Cog. Strat	17.68	4.42	5.00	25.00	82
Overall	17.71	4.48	5.00	25.00	164
Post Mastery Goals					
Control	17.74	4.85	5.00	25.00	82
Cog. Strat	19.18	4.75	5.00	25.00	82
Overall	18.46	4.84	5.00	25.00	164

Table 1 (Continued)

Variable	Mean	Std Deviation	Minimum	Maximum	n
Pre Performance-Approach					
Control	12.96	5.63	5.00	25.00	82
Cog. Strat	13.48	5.54	5.00	25.00	82
Overall	13.22	5.57	5.00	25.00	164
Post Performance-Approach					
Control	12.43	4.92	5.00	25.00	82
Cog. Strat	13.15	5.14	5.00	25.00	82
Overall	12.79	5.03	5.00	25.00	164
Pre Performance-Avoidance					
Control	11.03	4.30	4.00	20.00	82
Cog. Strat	11.38	4.35	4.00	20.00	82
Overall	11.20	4.31	4.00	20.00	164
Post Performance-Avoidance					
Control	10.59	4.33	4.00	20.00	82
Cog. Strat	10.48	4.14	4.00	20.00	82
Overall	10.53	4.22	4.00	20.00	164

Table 1 (Continued)

Variable	Mean	Std Deviation	Minimum	Maximum	n
Pre Self-Regulation					
Control	55.13	9.99	33.00	76.00	82
Cog. Strat	54.22	9.65	23.00	73.00	82
Overall	54.68	9.80	23.00	76.00	164
Post Self-Regulation					
Control	51.69	10.77	14.00	78.00	82
Cog. Strat	55.82	12.48	13.00	77.00	82
Overall	53.75	11.80	13.00	78.00	164

Since the self-report of the typical writing grade reported significance at the multivariate level, a t-test was run for evidence of univariate significance. The t-test did not reveal significance as $p = .173$, with reported means of 3.99 ($SD = .84$) for the rubric-only group and 4.17 ($SD = .87$) for the cognitive strategy group.

Although TIME*TREATMENT barely failed to reach statistical significance at the multivariate level, due to the exploratory nature of this study I looked at the univariate data. When controlling for the self-report of the typical writing grade earned, an interaction effect (TIME*TREATMENT) was reported for self-regulation and barely missed significance for mastery goals. Differences between the groups across time regarding self-regulation were significant at $p = .004$, with $F(1, 157) = 8.617$. The total variance accounted for by the self-regulation by time interaction was 5.1% at .697 observed power. Tests of Within-Subjects Contrasts revealed a linear effect for the time and treatment interaction for self-regulation. Data for the interaction effect are presented in Table 2.

The two groups differed significantly in their means for self-regulation. Whereas the rubric-only group demonstrated a decrease in self-regulation from 55.13 to 51.69, the cognitive strategies group demonstrated an increase from 54.22 to 55.82. See Figure 1 for a graph of the means.

Thus, the first repeated measures MANCOVA demonstrated that even when the self-report of the typical writing grade earned was controlled for, significant differences existed between the control and the cognitive strategy groups across time

Table 2

Repeated Measures MANCOVA 1 Main Effects and Interaction Effects for Self-Efficacy, Achievement Goals, and Self-Regulation

Variable	*df*	*F*	Sig.	Eta-Squared	Obs. Power
TIME					
Self-Efficacy	1	2.047	.154	.013	.165
Mastery Goals	1	.575	.449	.004	.051
Performance-Approach Goals	1	.341	.560	.002	.036
Performance-Avoidance Goals	1	.092	.763	.001	.022
Self-Regulation	1	.486	.487	.003	.045
TIME*TREATMENT					
Self-Efficacy	1	2.095	.150	.013	.169
Mastery Goals	1	5.549	.020	.033	.477
Performance-Approach Goals	1	.165	.685	.001	.026
Performance-Avoidance Goals	1	.717	.398	.004	.061
Self-Regulation	1	8.617	.004	.051	.697

in self-regulation. While the rubric-only group reported a decrease of self-regulation, the cognitive strategies group showed an increase. Thus, the experimental treatment demonstrated a benefit for the cognitive strategies group in comparison with the rubric-only group in increased self-regulation.

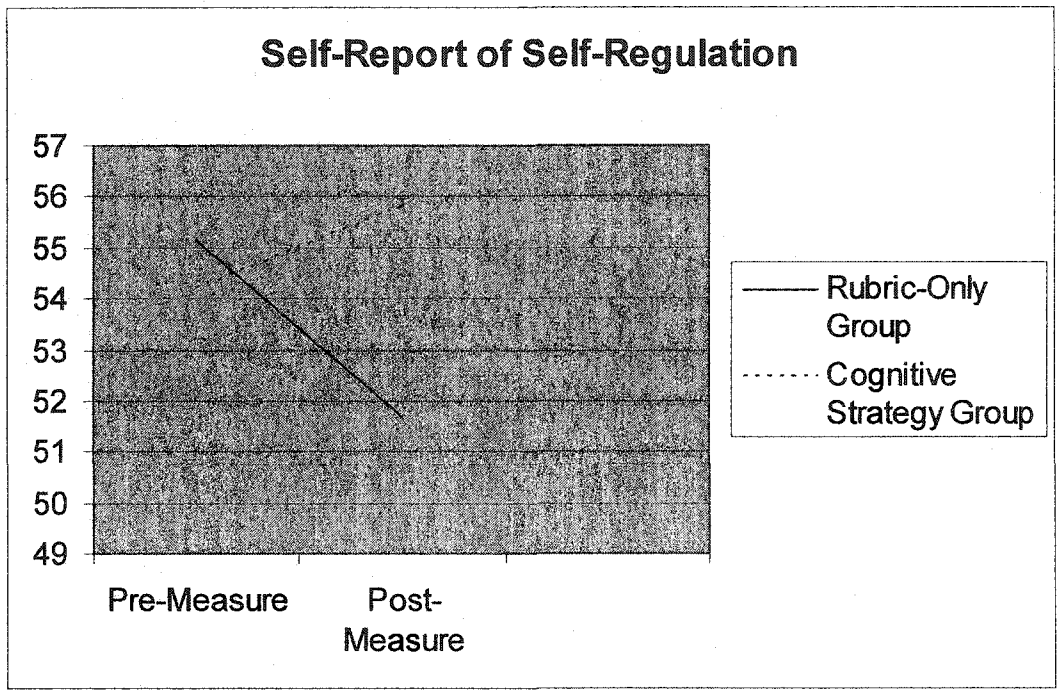

Figure 1. Interaction Effects of Time and Treatment on Students' Self-Reports of Self-Regulation.

Repeated Measures MANCOVA 2: Perceptions of Classroom Goal Structures.

Table 3 presents MANCOVA 2 means, standard deviations, minimum and maximum scores, and sample size for the pre- and post-measures for the rubric-only

group, the cognitive strategy group, and the two groups combined.

In the second MANCOVA, the multivariate tests revealed no significant main effects or interactions at the multivariate level. Mauchly's test was not significant, so there was no apparent violation of the sphericity assumption.

Due to the exploratory nature of this study, I looked at the univariate tests, and there were no significant main or interaction effects. Thus, when the self-report of the typical writing grade was controlled for, significant differences were not apparent between the groups for perceptions of classroom goal structures. Table 4 provides the statistics for Repeated Measures MANCOVA 2.

Table 3

Descriptive Statistics for Motivation and Achievement Variables of MANCOVA 2

Variable	Mean	Std Deviation	Minimum	Maximum	n
Pre Perc. Class Goals/Mastery					
Control	23.19	4.40	9.00	30.00	82
Cog. Strat	24.04	4.74	13.00	30.00	82
Overall	23.61	4.58	9.00	30.00	164
Post Perc. Class Goals/Mastery					
Control	23.46	5.25	6.00	30.00	82
Cog. Strat	24.62	5.02	9.00	30.00	82
Overall	24.04	5.16	6.00	30.00	164
Pre Perc. Class Goals/Perf-App					
Control	10.53	2.73	3.00	15.00	82
Cog. Strat	10.56	2.42	4.00	15.00	82
Overall	10.55	2.57	3.00	15.00	164
Post Perc. Class Goals/Perf-App					
Control	9.26	2.94	3.00	15.00	82
Cog. Strat	9.65	2.59	3.00	15.00	82
Overall	9.46	2.77	3.00	15.00	164

Table 3 (Continued)

Variable	Mean	Std Deviation	Minimum	Maximum	n
Pre Perc. Class Goals/Perf-Avd					
Control	11.88	4.80	5.00	24.00	82
Cog. Strat	11.39	5.02	5.00	25.00	82
Overall	11.64	4.90	5.00	25.00	164
Post Perc. Class Goals/Perf-Avd					
Control	11.48	4.11	5.00	23.00	82
Cog. Strat	11.59	4.60	5.00	25.00	82
Overall	11.54	4.35	5.00	25.00	164

Table 4

Repeated Measures MANCOVA 2 Main Effects and Interaction Effects for Perceptions of Classroom Goal Structures

Variable	*df*	*F*	Sig.	Eta-Squared	Obs. Power
TIME					
Perc. of Classroom Goals/ Mastery	1	.166	.684	.001	.026
Perc. of Classroom Goals/ P-APP	1	2.159	.144	.013	.174
Perc. of Classroom Goals/ P-AVD	1	.137	.711	.001	.024
TIME*TREATMENT					
Perc. of Classroom Goals/ Mastery	1	.214	.644	.001	.029
Perc. of Classroom Goals/ P-APP	1	.509	.477	.003	.047
Perc. of Classroom Goals/ P-AVD	1	.319	.573	.002	.035

Repeated Measures MANCOVA 3: Minutes Spent Writing; Overall Revisions; Revisions to Mechanics, Grammar, Style, and Content; Writing Achievement.

Table 5 presents MANCOVA 3 means, standard deviations, minimum and maximum scores, and sample size for the pre-, mid-, and post-measures for the rubric-only group, the cognitive strategy group, and the two groups combined.

Multivariate tests for the third MANCOVA revealed significant between-subjects effects for TYPGRADE (the self-report of the typical writing grade earned) and for TREATMENT, while TIME*TREATMENT barely missed evidencing a significant within-subjects effect once corrections were made for sphericity violations as described below. TYPGRADE reported a Wilks' Lambda of $F(1, 132) = 6.143, p <$ .000 and accounted for 21.8% of the variance at an observed power of .993. TREATMENT reported a Wilks' Lambda of $F(1, 132) = 8.667, p < .000$ and accounted for 28.3% of the variance at an observed power of 1.00. TIME*TREATMENT reported a Wilks' Lambda of $F(1, 538) = 1.900, p = .032$ and accounted for 4.1% of the variance at an observed power of .816. Mauchly's test reported significant scores for the number of minutes students spent writing ($p = .009$) and for revisions made regarding grammar ($p < .000$). The sphericity assumption was violated, so Greenhouse-Geisser scores were reported for these two variables to correct for this violation.

Table 5

Descriptive Statistics for Motivation and Achievement Variables of MANCOVA 3

Variable	Mean	Std Deviation	Minimum	Maximum	n
Time Spent on Writing #1					
Control	16.81	4.73	5.00	25.00	82
Cog. Strat	18.57	3.65	9.00	25.00	82
Overall	17.65	4.32	5.00	25.00	164
Time Spent on Writing #2					
Control	14.78	4.31	5.00	24.00	77
Cog. Strat	18.63	4.85	8.00	25.00	68
Overall	16.63	4.95	5.00	25.00	145
Time Spent on Writing #3					
Control	12.79	3.82	5.00	24.00	82
Cog. Strat	17.10	5.37	5.00	25.00	82
Overall	14.87	5.10	5.00	25.00	164
Mechanical Revs for Writing #1					
Control	1.72	1.77	0.00	11.00	82
Cog. Strat	2.52	2.36	0.00	13.00	82
Overall	2.11	2.10	0.00	13.00	164

Table 5 (Continued)

Variable	Mean	Std Deviation	Minimum	Maximum	n
Mechanical Revs for Writing #2					
Control	1.86	2.11	0.00	9.00	77
Cog. Strat	3.25	3.13	0.00	13.00	68
Overall	2.53	2.73	0.00	13.00	145
Mechanical Revs for Writing #3					
Control	2.39	2.25	0.00	8.00	82
Cog. Strat	3.10	3.13	0.00	15.00	82
Overall	2.73	2.72	0.00	15.00	164
Grammatical Revs for Writing #1					
Control	0.29	0.57	0.00	2.00	82
Cog. Strat	0.67	1.47	0.00	11.00	82
Overall	0.47	1.11	0.00	11.00	164
Grammatical Revs for Writing #2					
Control	0.14	0.45	0.00	3.00	77
Cog. Strat	0.30	0.60	0.00	3.00	68
Overall	0.22	0.54	0.00	3.00	145

Table 5 (Continued)

Variable	Mean	Std Deviation	Minimum	Maximum	n
Grammatical Revs for Writing #3					
Control	0.17	0.41	0.00	2.00	82
Cog. Strat	0.34	0.59	0.00	3.00	82
Overall	0.25	0.51	0.00	3.00	164
Stylistic Revs for Writing #1					
Control	0.46	0.71	0.00	3.00	82
Cog. Strat	0.81	1.37	0.00	8.00	82
Overall	0.63	1.09	0.00	8.00	164
Stylistic Revs for Writing #2					
Control	0.26	0.61	0.00	3.00	77
Cog. Strat	0.72	1.30	0.00	5.00	68
Overall	0.48	1.02	0.00	5.00	145
Stylistic Revs for Writing #3					
Control	0.19	0.55	0.00	3.00	82
Cog. Strat	0.63	1.14	0.00	6.00	82
Overall	0.40	0.91	0.00	6.00	164

Table 5 (Continued)

Variable	Mean	Std Deviation	Minimum	Maximum	n
Content Revs for Writing #1					
Control	1.97	1.91	0.00	7.00	82
Cog. Strat	2.88	2.78	0.00	14.00	82
Overall	2.41	2.40	0.00	14.00	164
Content Revs for Writing #2					
Control	1.97	2.37	0.00	10.00	77
Cog. Strat	4.31	4.01	0.00	16.00	68
Overall	3.10	3.46	0.00	16.00	145
Content Revs for Writing #3					
Control	1.28	1.40	0.00	6.00	82
Cog. Strat	3.69	3.55	0.00	15.00	82
Overall	2.44	2.91	0.00	15.00	164
Writing #1 Achievement					
Control	11.00	3.57	3.00	21.00	82
Cog. Strat	12.66	4.20	3.00	20.00	82
Overall	11.80	3.96	3.00	21.00	164

Table 5 (Continued)

Variable	Mean	Std Deviation	Minimum	Maximum	n
Writing #2 Achievement					
Control	11.00	3.97	4.00	22.00	77
Cog. Strat	13.36	4.63	3.00	23.00	68
Overall	12.14	4.45	3.00	23.00	145
Writing #3 Achievement					
Control	11.36	4.36	3.00	22.00	82
Cog. Strat	14.13	4.76	5.00	23.00	82
Overall	12.70	4.75	3.00	23.00	164

Tests of Between-Subjects Effects demonstrated significant differences in the amount of time students spent writing and writing achievement based on the self-report of the typical writing grade earned. Additionally, these tests revealed significant differences in all six of the variables in this MANCOVA based on group assignment by treatment. The statistics are presented in Table 6.

Since the amount of time spent writing and content-related revisions reported significant interactions, they will be discussed later. For the other four variables, the cognitive strategy group demonstrated higher means than the rubric-only group on the pre-, mid-, and post-measures. The gap between each group on these measures has been described below.

Mechanical revisions demonstrated the following differences in means: .80 (pre-measure), 1.39 (mid-measure), and .72 (post-measure). The gap between the two groups increased initially and showed an overall decrease.

The following differences were reported for grammatical revisions: .38 (pre-measure), .16 (mid-measure), and .18 (post-measure). The gap between the two groups decreased overall during the course of the study, although there was a slight rebound from the mid-measure.

Regarding stylistic revisions, the difference in means were as follows: .35 (pre-measure), .45 (mid-measure), and .43 (post-measure). The gap increased overall, yet the gap was slightly smaller by the post-measure.

Table 6

Repeated Measures MANCOVA 3 Typical Grade Earned and Treatment Effects for Minutes Spent Writing; Revisions to Mechanics, Grammar, Style, and Content; and Writing Achievement

Variable	*df*	*F*	Sig.	Eta-Squared	Obs. Power
TYPGRADE					
Time Spent Writing	1	9.823	.002	.067	.761
Mechanical Revs	1	1.790	.183	.013	.143
Grammatical Revs	1	2.721	.101	.019	.223
Stylistic Revs	1	2.215	.139	.016	.179
Content Revs	1	.667	.416	.005	.057
Writing Achievement	1	30.353	.000	.181	.999
TREATMENT					
Time Spent Writing	1	26.521	.000	.162	.997
Mechanical Revs	1	10.536	.001	.071	.793
Grammatical Revs	1	7.483	.007	.052	.623
Stylistic Revs	1	10.875	.001	.074	.808
Content Revs	1	25.846	.000	.159	.996
Writing Achievement	1	10.951	.001	.074	.811

Finally, writing achievement demonstrated these differences in means: 1.66 (pre-measure), 2.36 (mid-measure), and 2.77 (post-measure). The gap progressively increased during the duration of the study.

Although the multivariate tests barely failed to report significant within-subjects effects, due to the exploratory nature of this study, I observed the univariate statistics. When controlling for the self-report of the typical writing grade earned, the univariate tests revealed two interaction effects in this MANCOVA. Specifically group differences across time were reported for the amount of time spent writing and the number of content revisions made.

The Greenhouse-Geisser scores for the amount of time spent writing were reported as $F(1.874, 538) = 5.633$, $p = .005$. The total variance accounted for between the groups in the time spent writing was 3.9% with an observed power of .712. Differences between the groups across time regarding the number of content-related revisions were significant at $p = .011$, with $F(2, 538) = 4.541$. The total variance accounted for between groups was 3.2% at .620 power. Table 7 presents the statistics for Repeated Measures MANCOVA 3. Tests of Within-Subjects Contrasts revealed linear effects for the time and treatment interaction for the amount of time spent writing [$F(1, 538) = 7.724$, $p = .006$, eta-squared = .053 at .639 power] and the number of content-related revisions [$F(1, 538) = 6.433$, $p = .012$, eta-squared = .045 at .546 power].

Table 7

Repeated Measures MANCOVA 3 Main Effects and Interaction Effects for Minutes Spent Writing; Revisions to Mechanics, Grammar, Style, and Content; and Writing Achievement

Variable	*df*	*F*	Sig.	Eta-Squared	Obs. Power
TIME					
Time Spent Writing	1.874	4.372	.015	.031	.574
Mechanical Revs	2.000	2.428	.090	.017	.320
Grammatical Revs	1.592	.376	.639	.003	.044
Stylistic Revs	2.000	.001	.999	.000	.017
Content Revs	2.000	3.038	.050	.022	.413
Writing Achievement	2.000	.064	.938	.000	.021
TIME*TREATMENT					
Time Spent Writing	1.874	5.633	.005	.039	.712
Mechanical Revs	2.000	1.492	.227	.011	.180
Grammatical Revs	1.592	.923	.380	.007	.093
Stylistic Revs	2.000	.103	.903	.001	.024
Content Revs	2.000	4.541	.011	.032	.620
Writing Achievement	2.000	1.190	.306	.009	.139

Differences between the groups across time were demonstrated in the amount of time spent writing and the number of content-related revisions made. The rubric-only group demonstrated a decrease in the amount of time spent writing. The pre-measure provided a mean of 16.81, and the midpoint measure provided 14.78, while the post-measure provided a mean of 12.79. There was a slight initial increase followed by a decrease in the amount of time spent writing for the cognitive strategy group. On this measure, the pre-score was 18.57, the mid-score was 18.63, and the post-score was 17.10. See Figure 2 for a graph of the means of the significant interaction of time and treatment on the amount of time spent writing.

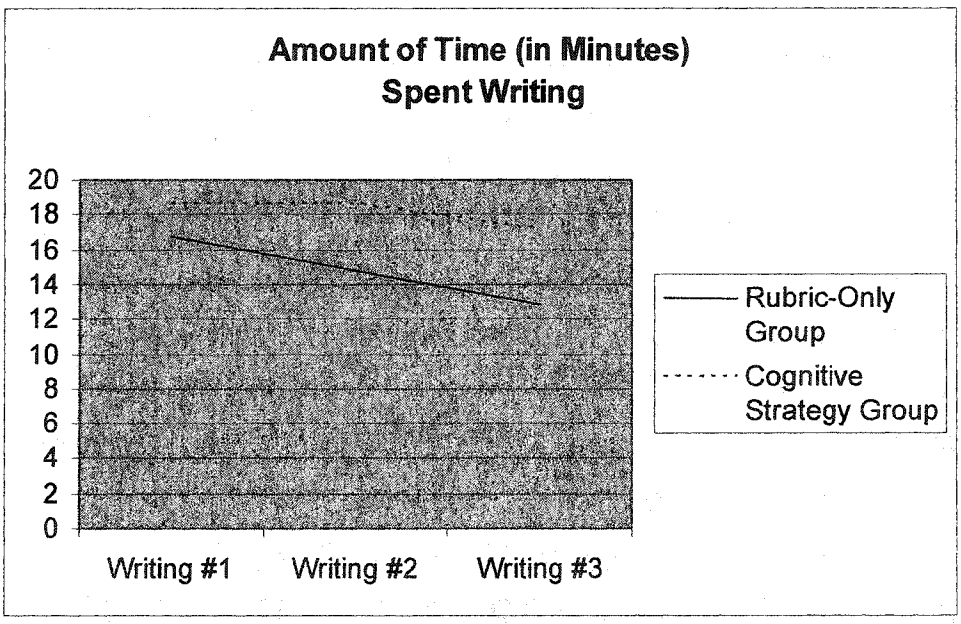

Figure 2. Interaction Effects of Time and Treatment on Students' Amount of Time Spent Writing.

Different trends were also provided by the number of content revisions made in each group. Whereas the rubric-only group had identical pre- and mid-measure scores of 1.97 and then a decline to 1.28 for the post-measure, the cognitive strategy group demonstrated a sizable increase from 2.88 to 4.31 between the pre- and mid-scores and then a decline for the post-score, reporting a mean of 3.69. See Figure 3 for a graph of the means of the significant interaction of time and treatment on the number of content revisions.

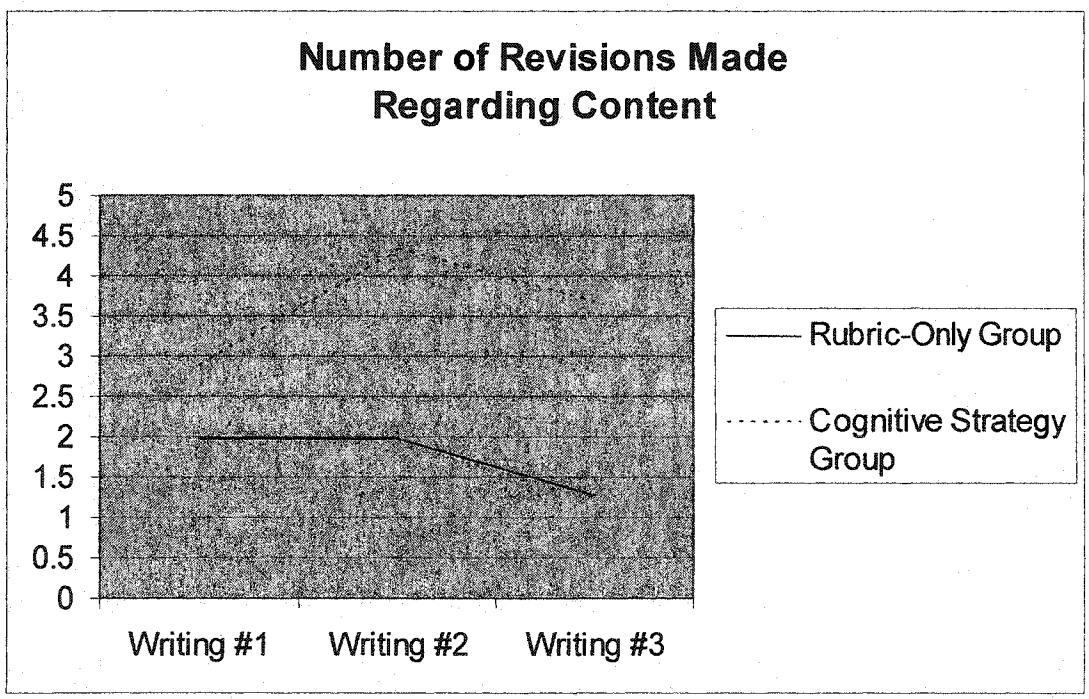

Figure 3. Interaction Effects of Time and Treatment on Students' Number of Content-Related Writing Revisions.

Thus, during the course of the study, when controlling for the self-report of the typical writing grade earned, significant differences were demonstrated between the groups across time in the amount of time spent writing and the number of content-related revisions that were made. While both groups showed a decrease in the time spent writing, the rubric-only group demonstrated a sizable decrease compared to a small decrease in the cognitive strategy group. Regarding content revisions, the rubric-only group showed an overall decrease, while the cognitive strategy group reported an overall increase, even though there was a decline from mid-measure to post-measure.

Student Attributions Regarding Significant Effects

To gather qualitative feedback via interviews, twenty-four participants were chosen randomly to represent students from both treatment groups and to represent high and low achievers. Students who were identified as low achievers reported scores ranging from four to thirteen out of a possible twenty-four points on the third writing assignment. Students who were identified as high achievers reported scores ranging from seventeen to twenty-two out of a possible twenty-four points on the third writing assignment. Although twenty-four students were invited to participate in the interviews, only seventeen students actually participated: five representing low achievers in the rubric-only group, four representing low achievers in the cognitive strategy group, three representing high achievers in the rubric-only group, and five representing high achievers in the cognitive strategy group. Six of the participants

actually responded in writing to the "interview" questions, as complications in data collection arose when the school's schedule was changed due to tornado damage in the community. Although numerous items (see Appendix M) were discussed in the interviews, only comments pertaining to students' attributions for the significant interactions will be addressed here. Specifically, the discussion has been limited to self-regulation, the amount of time spent writing, and the number of content revisions made.

The first significant effect across time between groups was self-regulation. In regard to self-regulation, students representing the low achievers in the rubric-only group reported that, for the most part, they did not use or think about using self-regulatory strategies (i.e. brainstorming, planning out their writing, monitoring their writing based on the expected criteria, budgeting their time, revising based on the criteria, etc.) while writing. Some of these participants reported that they "tried to stay on topic," that they "tried to check grammar," or that they tried to improve their writing but did not know how to improve it. Although these comments sound like attempts at regulating their writing behavior, the students reported a lack of regulation strategies, and as a result, it appeared that their attempts were somewhat shallow, focusing on the topic and grammar, rather than attempting to develop meaningful content or refining their style.

All of the high achievers in the rubric-only condition except for one reported using some level of self-regulation during their writing. Specifically, one of these

students reported not using the scoring sheet while writing, but "thinking about it [the scoring sheet] after writing." However, this same student claimed that she only made spelling revisions; she did not attempt any other types of revisions (grammatical, stylistic, or content) that may have benefited her writing. Another one of these students attempted to regulate his writing behavior, as he reported that he "looked at the scoring sheet" while writing, and that he "tried to write so that... [he] would not have to make revisions." In contrast to the low achievers, it seemed that for the most part the high achievers attempted to consider at least some of the criteria provided by the scoring sheet in order to improve their writing. Although there may have been attempts to regulate their behavior, none of the students in this group shared a common strategy for self-regulation.

On the other hand, both low and high achievers in the cognitive strategy groups reported attempts to think about or to use self-regulatory strategies. The low achievers claimed to have "looked at the scoring sheet," to have "thought about the discussion [from our feedback sessions]," or to have "thought about it [the writing] all the way through right before... writing to make sure... [he] had everything correct of what needed to be done." Interestingly, all of these students reported relying on a singular source, either the discussion from our sessions or the scoring sheet, prior to or during the writing activity. None of them made reference to thinking back on our discussions *and* to using the scoring sheet, simultaneously. One student claimed that she "tried to" think about the instruction and the scoring sheet, yet she "didn't really

have time during the writing time to refer back to the rubric." Although all of these students reported some use of self-regulatory strategies, none seemed to demonstrate the most effective use of the strategies, combining the cognitive strategies discussed during our sessions with references to the scoring sheet.

The high achievers in the cognitive strategy setting all reported using a combination of strategies based on our feedback sessions and the scoring sheet as an available tool. Unlike members of the other groups, these students reported a more meaningful application of self-regulatory behaviors, an application in which concerted efforts were made to critique their writing based on the scoring sheet and to use cognitive strategies. One student made the following claim: "I used it [the scoring sheet] in my head. I remembered the things I was weak on. I think a lot of these things came from the discussion. But the paper did help narrow down things to think about rather than having all kinds of crazy stuff going on in your head. Teachers tell you how they want you to write, but there is no reference. The scoring sheet and the teacher [in the study] was a reference." Another student claimed the following: "I [thought] about the scoring sheet mainly. I remember[ed] examples that you [the teacher during the study] gave us, but usually I look[ed] at the score sheet and check[ed] to see if I've done what they are asking for." Finally, another student claimed that he "...would go through each step and think what... [he] could do to get the highest score."

A second significant difference reported across time and between groups was

the amount of time students spent writing. Low achieving students in the rubric-only group claimed that they did not increase the amount of time they spent writing from session to session; in fact some attributed their decreases to being "tired," to the fact that they "did not care," to the fact that they were "just getting the writing done," or to the explanation that they tried to use more time, but they "...got stuck. It [Spending more time] didn't help." In the case of this last comment, it appeared that a lack of strategies for critiquing the writing inhibited the student from seeing any benefit to spending more time.

Of the high achievers in the rubric-only group, one reported no influences during the course of the study on the time she spent writing, while two reported increasing the amount of time they spent. One of those who increased his time claimed that as he became comfortable with the time constraints, he realized that he had time to "collect... [his] thoughts before... [he] wrote." He stated, "I pretty much could think about my thoughts." Another student in this group who increased his time reported that as he progressed during the study, he "... went into more detail to provide examples." He stated, "I just wanted to make sure that there were less loose ends than could possibly have been there."

All except one of the students representing the low achievers from the cognitive strategy setting reported increasing the time spent writing. Unlike the low achievers in the rubric-only group, the ones from the cognitive strategy group took more time and attributed the time spent to brainstorming ideas, to thinking about the

topic, and to simply working at a slower pace. Although these attempts did utilize more time, these students still performed fairly low, as these strategies remained fairly shallow, detached from interacting with the text that they actually generated. In other words, although there was some pre-planning via brainstorming and thinking about the topic and although they may have worked at a slower pace, the students did not report allocating time to critiquing their writing, develop ideas more explicitly in their writing, revising, or using some of the other strategies provided during the feedback sessions.

All of the high achieving members of the cognitive strategy group reported spending more time on the writing. Although one student claimed only to spend more time due to brainstorming, the others attributed their use of time to making sure their writing "read smoothly," to taking the time to "develop their ideas by providing examples," and to "planning how... [to] use all the tips from the scoring sheet." In all of the latter cases, the students' comments demonstrated genuine interaction with the text they were creating. The strategies used by the high achieving cognitive strategy group members differed from the high achieving rubric-only group members in that those in the former group made references to specific strategies that they were cognizant of using while writing.

Third, the only other variable reporting significant differences across time between the two groups was the number of content revisions made by the students. Low achievers in the rubric-only group reported avoiding making revisions to the

content or making revisions because they were unhappy with previous scores. One student suggested he wanted his scoring sheet simply to show that he attempted content revisions, while another suggested he made these revisions "to make it [her writing] sound better." None of these students reported specific approaches used to develop the content of their writings; instead, as one student claimed, "...it [making revisions] just made me cross out more stuff."

Ironically, the high achieving rubric-only group members claimed that they did not make revisions to content. One of the students claimed that he "...didn't understand what was done with revisions." He stated, "I tried to write without [so as not to have to] make revisions." Another student claimed that the time constraint kept him from spending time making content revisions; instead, he allocated all of his time to just writing.

The low achievers from the cognitive strategy group reported a similar reaction to making content revisions. All of these students except for one claimed to avoid making any kind of revision. The one student who did report making revisions in his content was more accurately making revisions in his grammar usage, as he reported making changes to sentence structure.

Surprisingly, the high achieving cognitive strategy group members reported making mostly revisions in the areas of spelling and grammar, but not in content. One student claimed that "The scoring sheet definitely... [influenced the number of content revisions he made in] taking out babble and stuff like that." Although most all of

these students did not directly report making content revisions, two of them suggested that they thought about content revisions while writing. Thus, since their expressions had not been committed to paper or had been revised just after they had initially been written, the students may not have viewed these changes as true revisions. For some students, the revision process may be viewed as something that only takes place after the writing has been completed rather than as a subprocess or an activity that may occur during writing.

Overall, it comes as no surprise that the higher achievers had a tendency to report more adaptive learning behaviors than the lower achievers. Generally speaking, higher achievers claimed to use more specific self-regulatory strategies, to increase the amount of time they spent writing by thinking about and manipulating the text they were creating, and to put forethought into their writing in an effort to avoid making later revisions to content.

Although barely missing statistical significance as an interaction ($p = .020$), a major difference between the high achieving rubric-only group members and the high achieving cognitive strategy group members was their reports of mastery goal orientation. The high achievers in the cognitive strategy group reported a greater desire to learn how to become better writers.

Low achievers in the cognitive strategy group demonstrated attempts at adaptive behaviors, yet their efforts seemed to fall short regarding specific strategy use. Although this group claimed to use self-regulatory strategies, they did not

provide specific procedures for their self-regulatory actions. Increases in the amount of time spent writing were attributed to revisions, especially sentence structure; wanting to improve scores; and thinking about the scoring sheet or the discussion of cognitive strategies. None of these students, however, provided specific ways in which they used the scoring sheet or the discussion to their benefit. It seemed there was disparity between knowing useful strategies, using the strategies they understood in a haphazard fashion, and using their existing strategies effectively.

The low achievers in the rubric-only group demonstrated the least adaptive strategies as only one individual reported a desire to learn how to write better, and none employed truly impactful, specific self-regulatory strategies. While a couple of the students attributed their time spent writing to improving their writings on a surface level, such as sticking to the topic and making grammatical corrections, rather than on making revisions based on the full criteria of the scoring sheet or developing their style or the content of their writing, the others reported using no self-regulatory strategies. As said by one of the students, "I was just getting it [the writing] done."

CHAPTER 5

DISCUSSION

The purpose of this study was to determine the extent to which teaching overt cognitive strategies when using a writing rubric influenced high school students' motivation, their perceptions of classroom goal structures, their ability to regulate their own writing behaviors (including factors for time and the number and types of revisions), and their writing achievement. In this chapter, I present a discussion of the results framed primarily around the first research question. I begin by discussing the main effects; then, significant interaction effects are discussed. The second research question is addressed when students' attributions are used to further the discussion of the significant interactions. Finally, I discuss limitations of the study. In closing, suggestions for future research are stated, and overall conclusions are drawn.

A part of the first research question sought to determine whether there were main effects based on time or group assignment (treatment). One premise of this study was that providing students any information relevant to their writing assignments or to the evaluation of these assignments would benefit them, especially when the criteria to be met were highly specific. Helping students develop a clear understanding of teacher expectations and teaching them a repertoire of strategies to complete tasks have been advocated as key components of instructional design models (Dick & Carey, 1996; Smith & Ragan, 1999) and are components directed at

promoting student competence and confidence. Thus, it would seem that the provision of a rubric and an explanation of the criteria (as provided to the rubric-only group) would empower students to a certain degree with an understanding of assignment expectations and, as a result, would encourage motivation and achievement. A second premise of this study was that providing greater elaboration of the criteria through teaching overt cognitive strategies to use during writing activities (as provided to the cognitive strategy group) would encourage even greater motivation and achievement. The data in my study provided partial support for these premises.

Main Effects for Treatment

Since the groups were randomly assigned, I predicted that the members of the rubric-only group and the cognitive strategy group would not demonstrate a main effect for treatment. However, as mentioned in the previous sections, all six of the variables associated with the writing measures (time spent writing, the revision variables, and writing achievement) demonstrated that significant differences existed between the groups.

The cognitive strategy group means were higher than those of the rubric-only group at all data collection points. Even when students' self-report of their typical writing grade was controlled for, the number of mechanics-related, grammar-related, and style-related revisions, as well as writing achievement, reported a treatment effect, yet failed to report a significant interaction effect.

Even though the groups were created by random assignment, I checked to see

what demographic information might help to explain why there were significant differences between the groups regarding the writing variables from the outset of the study. Each group consisted of eighty-two students, and the demographics suggested they were very similar in composition regarding the frequencies for gender, grade level, age, ethnicity, the number of English classes previously taken, and plans to attend college. The only demographic variable seeming to show divergence was the typical writing grade students reported earning. A scale from one to five was used when I entered the data regarding typical writing grades (A = 5, B = 4, C = 3, D = 2, and F = 1).

The mean for the rubric-only group was 3.99, while the mean for the cognitive strategy group was 4.17. The mean difference, then, was .18. The number of B's, D's and F's reported were nearly identical for both groups. However, in the rubric-only group seventeen students reported usually making C's, and twenty-four claimed to earn A's. In the cognitive strategy group seven students reported usually earning C's, and thirty-two reported usually making A's. Pajares, Britner, and Valiante (2000) suggested that prior achievement was influential on certain forms of motivation, such as self-efficacy and goal adoption. If past performance was an influential agent, then that may help to explain the pre-existing significant differences reported between the groups. For this reason, MANCOVA analyses were run so that the self-report for the typical writing grade earned could be used as a covariate. As reported in Chapter 4, the MANCOVA analyses revealed that three of the variables reported significant

interactions for time and treatment: self-regulation, the amount of time spent writing, and the number of content-related revisions made.

Significant Interactions for Time and Treatment

Self-Regulation. I predicted that the rubric-only group members would maintain their level of self-regulation or would show a slight increase, while cognitive strategy group members would show an increase, in fact a greater increase than the rubric-only group. In my study, the rubric-only group means actually showed a decrease in self-regulation (pre = 55.13; post = 51.69), and the cognitive strategy group means demonstrated an increase (pre = 54.22; post = 55.82). Although my prediction for the rubric-only group was not upheld, my prediction regarding the benefits to self-regulation for the cognitive strategy group was upheld.

There are several reasons why the rubric-only group might have differed significantly from the cognitive strategy group regarding self-regulation. Even though mastery goal adoption barely failed to reach significance in this study ($p = .02$), which would have been indicative of a differential, beneficial effect for the cognitive strategy group, the trend of increased mastery goal adoption was obvious. While the rubric-only group maintained mastery orientation, the cognitive strategy group showed an increase. Middleton and Midgley (1997) found that a mastery orientation predicted self-regulated learning. It is possible that the trend of increased mastery goal adoption for the cognitive strategy group members reflected a greater desire to master the material than for the rubric-only group. As a result the cognitive strategy group

members reported more self-regulated behavior than the rubric-only group.

A second reason, and one that supports the first, is that while rubric-only students were left to employ pre-existing or self-derived strategies when completing the writing, cognitive strategy group members were taught explicit strategies. Numerous studies have demonstrated that writing achievement is promoted when students utilize revision strategies, a form of self-regulation, and are provided cognitive strategy instruction (Danoff, Harris, & Graham, 1993; Fleming & Alexander, 2001; Graham & Harris, 1989; Stoddard & MacArthur, 1993). Students equipped with more strategies have been shown to be more successful and to feel that they have more control over success than those unequipped (Zimmerman & Martinez-Pons, 1990). In reference to my study, rubric-only group members were limited to using strategies they had gained from past experience or one's that were self-generated during the course of the study. If these students performed well initially, then there was little cause for them to change the strategies they employed. If these students did not perform successfully and they were not equipped with new strategies to improve their performance, then it is likely that they would choose not to invest in trying to improve. In this case, self-efficacy may have influenced the level of investment for the students.

Current performance, in this case on the writing assignment, or past experiences are influential on students' self-efficacy in that domain (Bandura, 1986; Pajares, 2003; Schunk & Pajares, 2002). Without being given new strategies, low-

performing students may have demonstrated learned helplessness (Dweck, 1986). If success seems elusive because of beliefs regarding ability or because the students lack the strategies to improve, then there may be reason for them to opt out of participation. Zimmerman, Bandura, and Martinez-Pons (1992) claimed that self-efficacy was influential on the adoption of self-regulatory behaviors.

Yet, a third reason that rubric-only students demonstrated a decrease in self-regulation rather than the increase exhibited by the cognitive strategy group may be that they simply lost interest in the study, especially if they did not feel they were in control of their improvement because of limited strategies. McWhaw and Abrami (2001) reported that students demonstrated the use of more metacognitive strategies when they reported higher levels of interest when completing a particular task. Interest, then, may influence the use of self-regulatory strategies. Over time, the novelty of participating in the study may have waned (and seemed to do so based on my observations), and the absence of grades in their English classes based on their writing performance during the study may have removed external influences encouraging their motivation to participate with full investment.

Conversely, these explanations regarding feelings of control or student interest also address the increase in self-regulation reported by the cognitive strategy group. Equipped with specific strategies to complete the writing tasks, these students demonstrated an increase in their desire to learn, even though the mastery goal variable barely failed to report significance. Although this group reported a decrease

in self-efficacy, this phenomenon may be a product of more accurate self-reports during the course of the study. Regardless, with task-specific strategies at their disposal, cognitive strategy group members reported choosing to invest in more self-regulatory behaviors than the rubric-only group, and feelings of control and student interest were both referenced in students' attributions regarding their performance.

In addressing research question two, students' attributions regarding self-regulation support the explanations provided above. The low-achieving rubric-only group members reported not trying to regulate behaviors or, in one case, making an attempt to improve writing but not having the strategies at his disposal to know what to do. High-achieving rubric-only group members reported varying levels of interest in and effort toward regulating their behaviors, with most of them providing generalizations of their attempts to improve their writing.

On the other hand, all of the cognitive strategy group members reported attempts at regulating their writing behaviors. The low achievers differed from the high achievers in that they claimed to use a singular approach, yet even the low achievers referenced having at least one approach at their disposal. What was evident in the qualitative data is that members of the cognitive strategy group claimed to be interested in learning to write, whereas that same level of interest was not displayed by members of the rubric-only group.

The implications are that cognitive strategy instruction does improve students' self-regulation when completing a writing task, and based on the qualitative feedback,

it seems that these students may invest in regulating behaviors because they feel empowered to do so, they experience an increase in their desire to learn, and they demonstrate a greater level of interest in the task in comparison to those who only receive the rubric. Composition teachers, and in all actuality all teachers who utilize rubrics, should consider providing cognitive strategy instruction coupled with the use of rubrics. Admittedly, the effect size was not large for self-regulation; however, any approach that can further student motivation to learn and that fosters students' understanding and the students' responsibility for learning should be employed.

Amount of Time Spent Writing. Because of the provisions for each treatment, my prediction for the amount of time spent writing was identical to the prediction for self-regulation: the rubric-only group would maintain or would increase the amount of time, while the cognitive strategy group would show more of an increase, one significantly different than the rubric-only group. Research has reported a tendency for students with a mastery orientation, as would seemingly be encouraged through cognitive strategy instruction, to engage more meaningfully (Ames & Archer, 1988; Butler, 1987; Meece, Blumenfeld, & Hoyle, 1988; Greene & Miller, 1996) and to spend more time actively engaged in a task (Ames, 1992) than those with a performance orientation.

As discussed previously, the rubric-only means for mastery goals remained the same, while the cognitive strategy group's means demonstrated growth, just falling short of reporting significance. However, significant differences were still reported

between the groups for the amount of time spent writing. Opposite to what I predicted, the mean scores revealed that the amount of time spent writing decreased for both the rubric-only group (pre = 16.81; mid = 14.78; post = 12.79) and the cognitive strategy group (pre = 18.57; mid = 18.63; post = 17.10).

Since the rubric-only group decreased its self-regulation, it is not surprising that the amount of time spent writing progressively decreased. As discussed previously, these students may have had limited strategies to employ, and if they did not feel a personal sense of control regarding improvement, they may have adopted feelings of helplessness (Dweck, 1986) and, as a result, may have chosen to limit the energy and time they invested. Additionally, these students may have had limited interest in the study (McWhaw & Abrami, 2001) and allocated less time over the course of the study than they were willing to give originally.

On the other hand, the cognitive strategy group members demonstrated increased levels of self-regulation, yet an overall decrease in the time spent writing. One possible explanation for the decrease in time for this group is that these students might have become more adept at using the cognitive strategies. Zimmerman and Kitsantas (1999) reported that self-regulated behavior becomes progressively more automatized, and Zimmerman and Martinez-Pons (1990) suggested that decreases in self-reports of self-regulation may be demonstrated as a result of self-regulatory behaviors becoming more covert. Thus, the students may have internalized the strategies taught during the course of the study to a certain extent and may have used

them more efficiently. Consequently, growing proficiency in self-regulation may have required less time for them to complete the writing tasks.

Quite possibly, the opposite might be true. Members of the cognitive strategy group might have demonstrated a decrease in means as a result of cognitive load. Equipped with multiple strategies for completing the writing task, these students may have felt taxed cognitively when they coordinated more complex approaches to completing the writing; consequently, they may have depleted existing strategies or may have exhausted all of their effort in less time. The students' attributions regarding this variable provide little insight into the cause of decreased time investment.

In addressing research question two, students' attributions for the amount of time they spent writing proved interesting. The low achieving rubric-only group members were the only ones to report using less time, yet the mean scores for both the rubric-only group and the cognitive strategy group decreased. The low achieving rubric-only group members stated that they reduced their time because they did not care about the writing, they were simply trying to get the writing finished, or they did not really know how they should spend more time writing.

The high achievers from the rubric-only group claimed to use more time because they spent more time thinking about their writing prior to beginning or while writing and because they wanted to come up with more examples in their writing. The cognitive strategy group members, who also reported increased use of time, differed

in that the low achievers claimed to spend time brainstorming, thinking about the topic, or simply working at a slower pace, while the high achievers reported using more specific strategies: reading through the writing to ensure that it "read smoothly," developing their ideas "to make sure that all loose ends were tied," or planning how to use the "tips" from the rubric.

Only the low achievers from the rubric-only group explained why the time may have decreased. Members of the three other groupings who claimed to spend more time did not explain why there were overall decreases reported for their groups.

One way to elicit evidence that the skills were becoming more automatized would be to look at the writing scores to see if achievement reported gains while the students spent less time writing. However, as will be further discussed later, the writing achievement variable did not reach statistical significance, potentially due to problems in the design of the instrument. For implications to be drawn, the significance of this interaction should be investigated in future research.

Content-Related Revisions. Again, I predicted that content-related revisions for the rubric-only group would be consistent during the study, while I predicted an increase for the cognitive strategy group. Research has indicated that students tend to use more substantive revisions, such as with content and style, when they have been specifically taught the cognitive strategies to do so (Fleming & Alexander, 2001; Graham & Harris, 1989; Stoddard & MacArthur, 1993; Wallace, et al., 1996). However, a lack of strategy instruction often resulted in students making surface

revisions, often revisions tied to mechanics and grammar (Slaughter, 1987; Stoddard & MacArthur, 1993).

Of the multiple variables assessing the number of revisions made, only the number of content-related revisions yielded a significant interaction. While the rubric-only group demonstrated an overall decrease in content-revision mean scores (pre = 1.97; mid = 1.97; post = 1.28), the cognitive strategy group demonstrated an overall increase (pre = 2.88; mid = 4.31; post = 3.69). The increase in content-related revisions, rather than surface mechanical or grammatical revisions, was indicative of improved quality of revisions and coincided with findings from other studies (Fleming & Alexander, 2001; Graham & Harris, 1989; Stoddard & MacArthur, 1993)

For the rubric-only group, since the desire to learn how to write better failed to increase, the use of self-regulatory behaviors decreased, and the time allocated to writing decreased, it was no surprise that a drop in content-related revisions was revealed. As described previously, this phenomenon may be the result of limited strategies for improvement, a sense of learned helplessness (Dweck, 1986), or a decline in interest.

For the cognitive strategy group, significant gains in the number of content revisions, yet no other types of revisions, may suggest that a hierarchy exists when making revisions. As the desire to learn seemed to increase and self-regulation did increase, even though the amount of time spent writing decreased, these students may have attended to using selected self-regulatory strategies that they felt made

observable improvements in the quality of their writing without exhausting all of the possible self-regulatory strategies within their repertoire. Previous research claimed that after learning more meaningful strategies like developing content, students have been reported to rely on them more than the shallower strategies, particularly mechanical revisions (Stoddard & MacArthur, 1993). Thus, the students may have been more inclined to demonstrate meaningful cognitive engagement (Meece, Blumenfeld, & Hoyle, 1988).

Another possibility is that the students protected themselves against having to make many of the surface-level revisions. Since students are typically expected to write using proper capitalization, punctuation, and basic grammar in the English classroom, the students from both groups may have automatized a proactive approach to avoiding problems in these areas. While writing, they may have made the effort to contemplate proper usage of mechanics and grammar so that revisions would be unnecessary. Thus, these revisions were more covert and undetected by the researcher in their usage (Zimmerman & Martinez-Pons, 1990), while the students may have found it necessary to make overt changes to content not only during but also after writing the first copy- a practice supported by the writing process (Sebranek, Meyer, & Kemper, 1996).

In addressing research question two, students' attributions for the number of content-related revisions supported, to a degree, the discussion presented above. Members of the rubric-only group, particularly the low achievers, but also one of the

high achievers, claimed not to make revisions related to content. These students reported that they did not care about making the revisions, that they did not have time to make revisions, or they did not know how to improve their writing. One high achieving rubric-only group member suggested that he wrote to avoid making the revisions; in doing so, he actually was revising his thoughts before committing them to paper.

The low achieving cognitive strategy group members also expressed some attempt at trying to write to avoid having to make later revisions or not revising at all. Even though they were exposed to strategy instruction, these students may have needed more guidance. However, the high achievers from the cognitive strategy group all reported making content revisions either while writing or after completing a draft copy.

The implications are that when provided cognitive strategy instruction, students may be better equipped to make more meaningful, qualitative changes in their writing than those who simply receive the expected criteria, as per the rubric. As evidenced in this study, when students are not empowered with explicit strategies, they may focus on surface-level components in their writing or, worse yet, they may not invest much effort at all in developing their writing. The evidence provided in this study advocates using cognitive strategy instruction coupled with a rubric, as this approach not only teaches students how to regulate their writing behaviors, but it encourages them to develop the content, and likely the quality, of their text.

Summary of Group Differences

In sum, the treatments used in this study reported differential effects across time for the rubric-only group and the cognitive strategy group, with the latter demonstrating greater increases or more of a beneficial effect than the rubric-only group. As discussed previously, significant interactions were reported for self-reports of self-regulation, the amount of time spent writing, and the number of content-related revisions made. First, the cognitive strategy students reported an increase in self-regulation, whereas the rubric-only students reported a decrease. Second, even though the cognitive strategy students demonstrated an overall decrease in the time spent writing, they showed an initial increase and a much less severe overall decrease than the rubric-only students. Third, the cognitive strategy group demonstrated an overall increase, even though there was a decrease from the mid- to post-measure, in the number of content-related revisions made, while the rubric-only students showed an overall decrease. Thus, it seems the experimental treatment encouraged more adaptive behaviors (increased self-regulation, more time spent writing, and more substantive, content-related revisions) than the treatment for the rubric-only group.

Limitations

Numerous limitations were inclusive in the design and protocol of this study, such as the artificial nature of the treatment setting. In order to accomplish random assignment, participants were removed from their regular English classrooms during data collection sessions. Thus, everything about their normal environment was

changed: the teacher (in this case the researcher), their peers, any history amongst the peers, and the room itself. Unlike the regular classroom setting, attendance was the only form of accountability as the students' writing performance did not influence the grade students would earn in their regular class. The novel environment likely introduced variance not assessed by the instruments in this study.

Another limitation was the short duration of the study. Many similar studies cited in my literature review used one or two writing samples collected over a relatively short time frame. I chose to include three samples to increase the opportunity to see change and designed my study to run for a period of around four weeks. Even though there was a trend of achievement gains, in particular for the cognitive strategy group, a significant interaction was not revealed. The length of the study may not have provided enough time and opportunities for students to make great strides in improving their writing. Writing improvement has been characterized as a long-term process (McGroarty & Zhu, 1997; Wallace, et al., 1996; Zimmerman & Kitsantas, 1999). If the study had covered a longer period of time, the discrepancies in achievement may have become more pronounced. I would suggest that future studies span a nine week period or even a semester, if feasible.

Additionally, the restricted range of the writing rubric provided a limitation. The writing rubric provided a zero to three rating scale for each criterion; thus, there was limited room to parse out discrepancies for the scores. During the course of the study, I found it particularly challenging at times to rate students' writings, as I found

the need to have a wider range of scores. In order to earn a three, the students had to perform the criterion near to perfection. In order to earn a zero, the student had to fail to demonstrate any evidence of meeting the criterion. With this being the case, most of the ratings were limited to ones and twos. There was not much room for writers who were good at the beginning of the study to make sizable gains, and even the marginal writers could make numerically limited gains.

According to Gall, Borg, and Gall (1996), "A ceiling effect occurs when the range of difficulty of the... items is limited, and therefore scores at the higher end of the possible score continuum are artificially restricted" (p. 533). This phenomenon may be partly to blame in why writing achievement failed to report a significant interaction in my study. To support this claim, although their research was based on self-efficacy scales, Pajares, Hartley, and Valiante (2001) claimed that using scales with greater discrimination, such as a zero to one hundred scale, resulted in statistically significant results that were not provided by more limited scales such as a seven-point Likert scale. Stoddard and MacArthur (1993) reported significant increases in writing achievement after teaching strategy use when using an eight-point scale. It seems logical that the limited scale used on my writing rubric failed to provide the necessary room for an accurate appraisal of writing achievement.

Yet another limitation to the study may revolve around the protocol, specifically the presentation of the self-efficacy scale, and initial inflated self-reports of self-efficacy. Opposite to what I would have predicted, self-efficacy declined for

both groups during the course of the study. Research by Wallace, et al. (1996) and Zimmerman and Kitsantas (2002) suggested that when completing self-report measures students may overestimate their actual ability. As this study progressed, the decrease in self-efficacy may have been an indication of more accurate self-evaluation. The students completed the self-efficacy measure just after being assigned the first writing, yet prior to completing the activity. To encourage more accurate initial reports of self-efficacy, the pre-measure might be given just after the first writing sample has been evaluated and returned to the students, but prior to conducting the experimental treatment. Feedback from the evaluators would give the students a frame of reference for their initial performance so that students do not rely wholly on wishful thinking.

In my study, after the first writing was handed back to the students many of them were overheard making statements such as, "I thought I did better than that." This first feedback experience may have influenced students' outcome expectancies and even their physiological reactions to their performance for the duration of the study. In turn, these expectancies and reactions may have influenced students' reports of self-efficacy on the post-measure (Bandura, 1986; Pajares, 2003; Schunk & Pajares, 2002). Thus, students who may have felt quite capable of fulfilling the rubric criteria at the outset of the study, may have more accurately realized their present performance levels after receiving feedback via the rubrics.

Two other limitations of this study included the honesty of students'

responses on the self-report instruments (e.g., the self-efficacy scale, the self-regulation scale, the achievement goals scale, and the perception of classroom goal structures scale) and the reliability of researcher coding. First, although the instructions on the self-report instruments requested that the students respond honestly, the students may or may not have done so. Second, even though procedures were followed to encourage the reliability of researcher coding, the inter-rater reliability coefficients for the writing samples were modest. More practice at calibrating the scoring of the writing may have improved the inter-rater reliability. As a result of these limitations and other considerations, I have provided several recommendations regarding future research.

Suggestions for Replicating this Study and for Future Research

There are several suggestions regarding changes that could be made in the design of this study and the design of the instruments used so that the future findings might reflect more closely the influence of cognitive strategy instruction on students' writing motivation and achievement in a regular English classroom.

One suggestion is that future research be conducted in the classrooms to which the students have normally been assigned. A component of this study was to assess students' perceptions of classroom goals or, in other words, whether their teacher's behaviors encouraged a mastery orientation, a performance-approach orientation, or a performance-avoidance orientation. In this study, the directions on the pre-measure asked for the students to use their regularly assigned English teacher as the basis for

answering the items. However, the post-measure directions asked that the teacher assigned to their study group be used as the basis. Numerous differences were likely to exist between the regular classroom and the class setting to which the students were assigned for the study. Not only were the teachers different, but so were their classmates and the room. More than teacher behaviors might be influencing the perceptions of classroom goals that these students reported, including the student makeup either in their regular class or in the study setting, so removing this discrepancy might yield more reliable, valid results.

Additionally, whether in the regular English classroom or not, future research might make the students accountable to their regular English teachers by attaching their writing achievement scores to their course grade. The novelty of participating in a study wore off for the students, and by the second or third writing samples, quite a few students quit the study or reported not trying their hardest because "...it [his performance] really didn't matter." Holding the students accountable would more likely encourage them to invest in working to their potential rather than just going through the motions. With genuine effort expended, the true effect of the strategies may better be determined. Regardless, even if a performance orientation is encouraged somewhat by accountability tactics, the regular classroom situation to which the results will hopefully be generalizable invariably will use a grading system to report performance.

Another suggestion for future research would be to conduct the study toward

the beginning of the school year and to extend the study over a longer duration of time. Forgetting about the numerous interruptions that occur during the last weeks of school, I collected data during this period. Numerous school events caused some of my participants to miss data collection sessions and eventually to drop from the study. Motivation to do any kind of work, much less a voluntary study in writing, was low. Even though the interest level of my participants seemingly waned during the short duration of my study, it could probably be maintained during a longer study if the students were held accountable for their performance, as suggested above. Future research might also consider assessing levels of student interest during the span of the study.

Regarding the design and use of the instruments, as stated in the limitations section, I recommend that future research make attempts toward helping students avoid overestimating self-reports of constructs such as self-efficacy. Additionally, instruments such as the writing rubric should be discrepant enough to parse numerous levels of performance for each criterion. One other possible change that should be considered if replicating this study involves the writing topics. Several students reported that the topics were not very interesting. The topics were generated by the researcher and were written so that all students should be able address them. They were written so that they would be relevant to all high school students so that prior knowledge would not be an overriding influence on the writing score. Since there were indications, comments during the interviews, that the students did not care for

the topics, future research might try to utilize topics that are accessible to all students but that are more interesting.

Overall, this study was designed to be causal, and it used several MANCOVAs to assess change scores due to the interventions. Future research may look at a path model in order to determine a clearer picture of the overall links between the many variables that are likely to influence writing. Additionally, qualitative studies aimed at revealing the metacognitive strategies, the self-regulatory behaviors, or the revision process of good writers may further inform teachers about the thoughts and behaviors they can try to encourage in all of their students. A better understanding of the processes good writers use may inform teachers in how to develop cognitive strategy instruction for their classrooms.

Conclusion

Given the instructional and grading demands of teaching writing, composition teachers are in need of assessment instruments and strategies that can benefit students maximally, while at the same time, that alleviate some of these demands. Given that one approach to aiding teachers in assessment is the use of rubrics (Maxwell & Meiser, 2001), it seemed important to investigate the differential effects regarding how teachers utilize rubrics. Consistent with Zimmerman, Bandura, and Martinez-Pons (1992), this study found that just because students are presented knowledge of expected behaviors, they may not know how to fulfill these expectations or may not be as motivated to fulfill them when compared to others who receive more support

through cognitive strategy instruction. When provided a brief explanation of a writing assignment, students in the rubric-only group reported a decrease in self-regulation, a decrease in the amount of time spent writing, and a decrease in the number of content revisions they made. Contrarily, students in the experimental group who received support through cognitive strategy instruction displayed growth, at least initially, in all of these areas. Thus, using cognitive strategy instruction coupled with the rubric was shown to encourage students' self-regulatory behaviors.

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Appendix A
Demographics for Students

Directions: Please answer the following questions about yourself and your background.

1. What is your English teacher's name? _____

2. What is your gender? _____ Male _____ Female

3. What is your grade level? _____ 10th _____ 11th _____ 12th

4. What is your birth date? _____

5. How many English classes have you taken in high school, including this one?

6. Which English class are you currently taking? _____

7. What grade do you typically make on writing assignments in your English class?

(Circle ONE.) A B C D F

8. Ethnicity: (Select all that apply.)

_____ African-American

_____ Asian/ Pacific Islander

_____ Caucasian

_____ Hispanic

_____ Native American

_____ Other: _____

9. Do you plan on going to college? _____ Yes _____ No

10. Is English your first language? _____ Yes _____ No

If NO, please write your first language here _____

Appendix B
Demographics for Teachers

Directions: Please answer the following questions about yourself and your background.

1. Participating Teacher's Name _____

2. Gender: _____ Male _____ Female

3. Ethnicity: (Please select only ONE.)

_____ African-American

_____ Asian/ Pacific Islander

_____ Caucasian

_____ Hispanic

_____ Native American

_____ Other: _____

4. Are you certified to teach English? _____ Yes _____ No

5. How many years have you taught English? _____

Appendix C
Writing Appraisal Inventory Pre-Measure

Directions: Answer all of the following questions based on the writing assignment your teacher has given to you. On a scale from **0 (No Chance)** to **100 (Completely Certain)**, how confident are you that you can perform each of the writing skills below? **Remember that you may use any number between 0 and 100.**

0--------10--------20--------30--------40--------50--------60--------70--------80--------90--------100
No Chance Completely Certain

_____ 1. I can write coherently, making sure that my ideas flow together smoothly, when writing this paper.

_____ 2. I can use transitions in order to provide logical movement in my paper from idea to idea and paragraph to paragraph.

_____ 3. I can express my ideas clearly, making sure to avoid wordiness and repetition, when writing this paper.

_____ 4. I can develop my ideas fully and in depth by using support sentences when writing this paper.

_____ 5. I can write using my own ideas and unique experiences when writing this paper.

_____ 6. I can correctly spell, capitalize, and punctuate when writing this paper.

_____ 7. I can use standard grammar (i.e. verb tenses, singular and plural forms, subject-verb agreement, etc.) correctly when writing this paper.

_____ 8. I can write varied, complete sentences (simple, compound, complex, compound-complex) when writing this paper.

Appendix D
Writing Appraisal Inventory Post-Measure

Directions: Answer all of the following questions based on the writing assignment your teacher has given to you. On a scale from **0 (No Chance)** to **100 (Completely Certain)**, how confident are you that you can perform each of the writing skills below? **Remember that you may use any number between 0 and 100.**

0--------10--------20--------30--------40--------50--------60--------70--------80--------90--------100
No Chance Completely Certain

_____ 1. I can write coherently, making sure that my ideas flow together smoothly, when writing this paper.

_____ 2. I can use transitions in order to provide logical movement in my paper from idea to idea and paragraph to paragraph.

_____ 3. I can express my ideas clearly, making sure to avoid wordiness and repetition, when writing this paper.

_____ 4. I can develop my ideas fully and in depth by using support sentences when writing this paper.

_____ 5. I can write using my own ideas and unique experiences when writing this paper.

_____ 6. I can correctly spell, capitalize, and punctuate when writing this paper.

_____ 7. I can use standard grammar (i.e. verb tenses, singular and plural forms, subject-verb agreement, etc.) correctly when writing this paper.

_____ 8. I can write varied, complete sentences (simple, compound, complex, compound-complex) when writing this paper.

Appendix E

PALS Achievement Goal Orientations- Revised: Pre-Measure

Part I: The following statements are behaviors or thoughts students might demonstrate in their English classes. Decide how closely these statements reflect your own behaviors in and thoughts about your English class. There are no right or wrong answers. Please answer honestly, as your answers will remain confidential.

Not At All True Somewhat True Very True

1----------2----------3----------4----------5

1.	It's important to me that I learn new writing concepts this year.	1	2	3	4	5
2.	It's important to me that I improve my writing skills this year.	1	2	3	4	5
3.	It's important to me that other students in my class think I am a good writer.	1	2	3	4	5
4.	One of my goals is to show others that writing is easy for me.	1	2	3	4	5
5.	It's important to me that I don't look stupid when writing in class.	1	2	3	4	5
6.	One of my goals is to master a lot of new writing skills this year.	1	2	3	4	5
7.	It's important to me that I look like a good writer compared to others in my class.	1	2	3	4	5
8.	One of my goals is to keep others from thinking I'm not a good writer.	1	2	3	4	5
9.	One of my goals in class is to avoid looking like I have trouble writing.	1	2	3	4	5
10.	One of my goals is to show others that I'm good at writing.	1	2	3	4	5
11.	It's important to me that I thoroughly understand how to write.	1	2	3	4	5
12.	It's important to me that my teacher doesn't think that I know less about writing than others in class.	1	2	3	4	5
13.	One of my goals is to look like a good writer in comparison to the other students in my class.	1	2	3	4	5
14.	One of my goals in class is to learn as much about writing as I can.	1	2	3	4	5

Appendix F

PALS Achievement Goal Orientations- Revised: Post-Measure

Part I: The following statements are behaviors or thoughts students might demonstrate in their English classes. Decide how closely these statements reflect your own behaviors in and thoughts about your English class. There are no right or wrong answers. Please answer honestly, as your answers will remain confidential.

Not At All True — Somewhat True — Very True

1----------2----------3----------4----------5

1.	It's important to me that I learn new writing concepts this year.	1	2	3	4	5
2.	It's important to me that I improve my writing skills this year.	1	2	3	4	5
3.	It's important to me that other students in my class think I am a good writer.	1	2	3	4	5
4.	One of my goals is to show others that writing is easy for me.	1	2	3	4	5
5.	It's important to me that I don't look stupid when writing in class.	1	2	3	4	5
6.	One of my goals is to master a lot of new writing skills this year.	1	2	3	4	5
7.	It's important to me that I look like a good writer compared to others in my class.	1	2	3	4	5
8.	One of my goals is to keep others from thinking I'm not a good writer.	1	2	3	4	5
9.	One of my goals in class is to avoid looking like I have trouble writing.	1	2	3	4	5
10.	One of my goals is to show others that I'm good at writing.	1	2	3	4	5
11.	It's important to me that I thoroughly understand how to write.	1	2	3	4	5
12.	It's important to me that my teacher doesn't think that I know less about writing than others in class.	1	2	3	4	5
13.	One of my goals is to look like a good writer in comparison to the other students in my class.	1	2	3	4	5
14.	One of my goals in class is to learn as much about writing as I can.	1	2	3	4	5

Appendix G

Perception of Classroom Goal Structures: Pre-Measure

Part I: The following statements are thoughts students might have about their classes. Decide how closely these statements reflect your own thoughts **about writing in your English class**. There are no right or wrong answers. Please answer honestly, as your answers will remain confidential.

Not At All True — Somewhat True — Very True

1----------2----------3----------4----------5

1.	In our class, trying hard is very important.	1 2 3 4 5
2.	In our class, it's important to get high scores on tests.	1 2 3 4 5
3.	In our class, showing others that you are not bad at class work is really important.	1 2 3 4 5
4.	In our class, one of the main goals is to avoid looking like you can't do the work.	1 2 3 4 5
5.	In our class, learning new ideas and concepts is very important.	1 2 3 4 5
6.	In our class, it's OK to make mistakes as long as you are learning.	1 2 3 4 5
7.	In our class, getting good grades is the main goal.	1 2 3 4 5
8.	In our class, it's very important not to look dumb.	1 2 3 4 5
9.	In our class, it's important that you don't make mistakes in front of everyone.	1 2 3 4 5
10.	In our class, getting right answers is very important.	1 2 3 4 5
11.	In our class, it's important to understand the work, not just memorize it.	1 2 3 4 5
12.	In our class, how much you improve is really important.	1 2 3 4 5
13.	In our class, it's important not to do worse than other students.	1 2 3 4 5
14.	In our class, really understanding the material is the main goal.	1 2 3 4 5

Appendix H

Perception of Classroom Goal Structures: Post-Measure

Part I: If your teacher were to use the activities you have participated in during the course of this study, decide how closely these statements would reflect your thoughts **about writing in your English class**. There are no right or wrong answers. Please answer honestly, as your answers will remain confidential.

Not At All True — Somewhat True — Very True

1----------2----------3----------4----------5

1.	In our class, trying hard is very important.	1 2 3 4 5
2.	In our class, it's important to get high scores on tests.	1 2 3 4 5
3.	In our class, showing others that you are not bad at class work is really important.	1 2 3 4 5
4.	In our class, one of the main goals is to avoid looking like you can't do the work.	1 2 3 4 5
5.	In our class, learning new ideas and concepts is very important.	1 2 3 4 5
6.	In our class, it's OK to make mistakes as long as you are learning.	1 2 3 4 5
7.	In our class, getting good grades is the main goal.	1 2 3 4 5
8.	In our class, it's very important not to look dumb.	1 2 3 4 5
9.	In our class, it's important that you don't make mistakes in front of everyone.	1 2 3 4 5
10.	In our class, getting right answers is very important.	1 2 3 4 5
11.	In our class, it's important to understand the work, not just memorize it.	1 2 3 4 5
12.	In our class, how much you improve is really important.	1 2 3 4 5
13.	In our class, it's important not to do worse than other students.	1 2 3 4 5
14.	In our class, really understanding the material is the main goal.	1 2 3 4 5

Appendix I

Self-Regulation Scale: Pre-Measure

Part II: The following statements are things students might do when completing writing assignments. Decide if each is an action you did when completing Writing #1. Please answer honestly, as your responses will be confidential.

Strongly Disagree Disagree Slightly Disagree Slightly Agree Agree Strongly Agree

1----------2----------3----------4----------5----------6

1. I made an effort to collect my thoughts or to brainstorm some ideas **before** writing. 1 2 3 4 5 6
2. I made an effort to think about whether my ideas were focused on the topic or not. 1 2 3 4 5 6
3. I made an effort to think about making my sentences flow together smoothly. 1 2 3 4 5 6
4. I made an effort to use transitions to provide a logical ordering of my thoughts. 1 2 3 4 5 6
5. I made an effort to avoid being wordy or repeating myself unnecessarily. 1 2 3 4 5 6
6. I made an effort to develop my ideas fully. 1 2 3 4 5 6
7. I made an effort to write from my own unique point of view. 1 2 3 4 5 6
8. I made an effort to check for appropriate spelling, capitalization, and punctuation. 1 2 3 4 5 6
9. I made an effort to check my grammar usage. 1 2 3 4 5 6
10. I made an effort to check my sentence structures to see if they were complete and varied. 1 2 3 4 5 6
11. I made an effort to revise and to improve my writing. 1 2 3 4 5 6
12. I made an effort to budget the time allowed for this writing. 1 2 3 4 5 6
13. I made an effort to address ALL parts of the assignment. 1 2 3 4 5 6

Appendix J

Self-Regulation Scale: Post-Measure

Part II: The following statements are things students might do when completing writing assignments. Decide if each is an action you did when completing Writing #3. Please answer honestly, as your responses will be confidential.

Strongly Disagree Disagree Slightly Disagree Slightly Agree Agree Strongly Agree

1----------2----------3----------4----------5----------6

1. I made an effort to collect my thoughts or to brainstorm some ideas **before** writing. 1 2 3 4 5 6
2. I made an effort to think about whether my ideas were focused on the topic or not. 1 2 3 4 5 6
3. I made an effort to think about making my sentences flow together smoothly. 1 2 3 4 5 6
4. I made an effort to use transitions to provide a logical ordering of my thoughts. 1 2 3 4 5 6
5. I made an effort to avoid being wordy or repeating myself unnecessarily. 1 2 3 4 5 6
6. I made an effort to develop my ideas fully. 1 2 3 4 5 6
7. I made an effort to write from my own unique point of view. 1 2 3 4 5 6
8. I made an effort to check for appropriate spelling, capitalization, and punctuation. 1 2 3 4 5 6
9. I made an effort to check my grammar usage. 1 2 3 4 5 6
10. I made an effort to check my sentence structures to see if they were complete and varied. 1 2 3 4 5 6
11. I made an effort to revise and to improve my writing. 1 2 3 4 5 6
12. I made an effort to budget the time allowed for this writing. 1 2 3 4 5 6
13. I made an effort to address ALL parts of the assignment. 1 2 3 4 5 6

Appendix K
Writing Instruction Sheet

General Directions: Please read all of the directions carefully. Your assignment is to write a two-page essay addressing a specific topic on sheets of notebook paper. The researcher will provide you with a slip of paper on which you should write your name. You will staple this name slip to your essay. ***You are asked to use a blue or black pen. Should you desire to change something that you have written, simply mark through your original writing and then make necessary revisions.*** Before you begin writing, look at the scoring criteria on the back side of this sheet. If you have any questions regarding the criteria, please ask your teacher prior to the beginning of this assignment. When finished with this assignment, please turn your paper face down on your desk and raise your hand so that the researcher may collect your paper. ***The researcher will be writing the time that you finished writing your paper.*** You may read silently or complete other work while waiting for everyone to finish.

Topic:

If you could change any one thing about school, **what** would you change? Make sure to explain **how** you would make this change and to discuss **why** you would make it.

Writing Instruction Sheet

General Directions: Please read all of the directions carefully. Your assignment is to write a two-page essay addressing a specific topic on sheets of notebook paper. The researcher will provide you with a slip of paper on which you should write your name. You will staple this name slip to your essay. ***You are asked to use a blue or black pen. Should you desire to change something that you have written, simply mark through your original writing and then make necessary revisions.*** Before you begin writing, look at the scoring criteria on the back side of this sheet. If you have any questions regarding the criteria, please ask your teacher prior to the beginning of this assignment. When finished with this assignment, please turn your paper face down on your desk and raise your hand so that the researcher may collect your paper. ***The researcher will be writing the time that you finished writing your paper.*** You may read silently or complete other work while waiting for everyone to finish.

Topic:

If you were given the opportunity to perform a great deed for someone else, **what** would you choose to do? Make sure to explain **how** you would carry out this deed and to discuss **why** you would do it.

Writing Instruction Sheet

General Directions: Please read all of the directions carefully. Your assignment is to write a two-page essay addressing a specific topic on sheets of notebook paper. The researcher will provide you with a slip of paper on which you should write your name. You will staple this name slip to your essay. ***You are asked to use a blue or black pen. Should you desire to change something that you have written, simply mark through your original writing and then make necessary revisions.*** Before you begin writing, look at the scoring criteria on the back side of this sheet. If you have any questions regarding the criteria, please ask your teacher prior to the beginning of this assignment. When finished with this assignment, please turn your paper face down on your desk and raise your hand so that the researcher may collect your paper. ***The researcher will be writing the time that you finished writing your paper.*** You may read silently or complete other work while waiting for everyone to finish.

Topic:

If you were provided the opportunity to learn any new skill (whether job-related, school-related, or hobby-related), **what** skill would you choose to learn? Make sure to explain **how** you think that learning this new skill would change your life and to discuss **why** you would choose this particular skill.

Appendix L

Scoring Sheet Directions: For EACH criteria, check the appropriate point value box based on the student's performance.

Criteria	3 Points	2 Points	1 Point	0 Points
Coherence: The ideas...	are focused on the topic and flow smoothly together.	are somewhat related but could flow more smoothly.	seem unrelated and shift abruptly.	are completely unrelated to the topic or to each other.
Transitions: The transitions...	create a logical movement from idea to idea or paragraph to paragraph.	are generally smooth, but the movement from idea to idea could be stronger.	are not always smooth or completely logical; there needs to be a clearer link.	do not make sense or are not used at all.
Careful Wording: Wordiness and repetition...	are avoided; the progression is clear and to the point.	are avoided for the most part, but the paper could be clearer.	are evident, but the paper is still somewhat understandable.	are evident, and they make it difficult to understand the paper.
Development of Ideas: The writer...	develops the ideas thoughtfully and with the necessary depth to make his/her points clear.	develops the ideas briefly, yet the development remains superficial.	attempts to develop the ideas, but the development is too vague.	does NOT develop ideas in the paper.
Voice: The writer's voice...	sounds authentic and original.	seems somewhat authentic, but it lacks a unique perspective.	does NOT seem authentic or original.	is NOT apparent.
Mechanics: Spelling, capitalization, and punctuation are used...	correctly and consistently throughout the paper.	correctly for the most part; however, infrequent and minor errors are evident.	incorrectly on numerous occasions.	incorrectly throughout the paper.
Usage: Grammar is used...	correctly and consistently throughout the paper.	correctly for the most part; however, infrequent and minor errors are evident.	incorrectly on numerous occasions.	incorrectly throughout the paper.
Sentence Structure: The sentences are...	properly written, and they are varied in their structures.	slightly awkward, or if properly written, they are NOT varied.	awkward, making the paper difficult to read.	incomplete or very awkward, making the paper unintelligible.

__I __II __III Mech _____ Gram_____ Style_____ Cont_____

Appendix M
Potential Interview Items

1. What did your teacher do to prepare you for this writing activity?
2. How helpful was the teacher's instruction related to this writing activity?
3. How helpful was the scoring sheet (rubric) related to this writing activity?
4. Did you think about your teacher's instruction or the scoring sheet while you were writing? If so, what were you thinking?
5. Did you use your teacher's instruction or the scoring sheet while you were writing? If so, how?
6. Did anything during this research study change your confidence in your ability to complete the writing activities successfully? If so, what?
7. Did anything during this research study change your desire to master these writing activities? If so, what?
8. Did anything during this research study change your desire to earn a higher score or to perform better on these writing activities? If so, what?
9. Did anything during this research study change your level of concern in regards to looking "stupid" or performing poorly in comparison to others? If so, what?
10. Did anything during this research change how you view the expectations your teacher has for you as a student? If so, what?
11. Did anything during this research study change how you view the opportunities that are provided to you in this class? If so, what?
12. Did anything during this research study change the amount of control you felt over completing the assignment successfully? If so, what?
13. Did anything during this research study change how much time you chose to spend writing each one of your responses? If so, what?
14. Did anything during this research study change the amount of or the types of revisions you made while completing the writing activities? If so, what?
15. Did you show improvement in your writing during the course of this study? Why do you think this is the case?
16. On a scale from one to ten, how would you rank your writing performance on these activities?
17. What ONE factor would explain why you rank your performance this way?
18. Do you see this influence on your performance as something that is changeable or something that will stay the same?
19. Do you see this influence on your performance as something that is within your control, or is it something that is external, out of your control?

Appendix N
Guide for Teaching Cognitive Strategies

The following guidelines are intended to help educators to teach composition and self-regulation strategies explicitly and overtly in the high school setting. These guidelines were created based on recommendations from the Self-Regulated Strategy Development (SRSD) Model (Harris & Graham, 1992).

1. Identify and define the eight criteria listed on the scoring sheet. Make sure the students understand what these elements entail.
2. Using the sample essay provided for the essay you have just scored and handed back, identify examples of EACH of the criteria and discuss how the students would have rated these examples.
3. Generate corrections for problem areas in the essay.
4. Model, as an expert, the thought processes that you would go through to make sure that you have carefully written your paper based on EACH of the criteria.
5. Encourage the students to develop "self-talk" in following these procedures:
    a. "What ideas do I have related to the topic?" "Which topic interests me the most?" (Make a list.)
    b. "How will I address the *what*, the *how*, and the *why* in this writing?" (Make a list of the *what*, *how*, and *why*.)
    c. "How can I make sure that I have met all of the criteria on the scoring sheet to the best of my ability?" (Look for examples of EACH criteria and put a check mark by the criteria after I have checked my work.)
    d. "Did I take the time to revise and edit my paper so that I have put forth my best effort?" (Do another read-through to identify whether you wish to make any changes.)

Appendix O
Lesson Plans/Interventions for the Cognitive Strategy Group

Lesson Plan for Feedback Session I

1. Before handing back the papers and rubrics, inform the students that this process is about improving their writing. Thus, the scorers of the writing samples were fairly critical in order to provide honest feedback.
2. Hand back the writing samples and rubrics, and ask the students to avoid making any marks on the scoring sheets. They may make marks on their writing samples if they choose.
3. Recommend that students look at their writing samples and the scoring sheets , and instruct them to ask any questions they have about how their samples were scored. **(GROUP A PARTICIPANTS WILL NOW BE ASKED TO HAND BACK THEIR WRITING SAMPLES AND SCORING SHEETS. REMIND THE PARTICIPANTS THAT ON THURSDAY, MAY 1, THEY WILL MEET HERE AGAIN TO COMPLETE WRITING #2.)**
4. Identify and define the eight criteria listed on the scoring sheet. Make sure the students understand what these elements entail. (See attached suggestions, if necessary.)
5. Using the sample essay provided for the essay you have just scored and handed back, identify examples of EACH of the criteria and discuss how the students would have rated these examples. Also, inform them of the actual score given.
6. Identify and generate corrections for problem areas or weaknesses in the essay.
7. Model, as an expert, the thought processes that you would go through to make sure that you have carefully written your paper based on EACH of the criteria.
8. Encourage the students to develop "self-talk" in following these procedures:
    a. "What ideas do I have related to the topic?" "Which topic interests me the most?" (Make a list.)
    b. "How will I address the *what*, the *how*, and the *why* in this writing?" (Make a list of the *what*, *how*, and *why*.)
    c. "How can I make sure that I have met all of the criteria on the scoring sheet to the best of my ability?" (Look for examples of EACH criteria and put a check mark by the criteria after I have checked my work.)
    d. "Did I take the time to revise and edit my paper so that I have put forth my best effort?" (Do another read-through to identify whether you wish to make any changes.)
9. Collect all writing samples and scoring sheets and remind the participants that this Thursday, May 1, they will meet again to complete writing sample #2.

Lesson Plan for Feedback Session II

1. Before handing back the papers and rubrics, inform the students that this process is about **improving** their writing. Thus, the scorers of the writing samples were fairly critical in order to provide honest feedback.
2. Hand back the writing samples and rubrics, and ask the students to avoid making any marks on the scoring sheets. They may make marks on their writing samples if they choose.
3. Recommend that students look at their writing samples and the scoring sheets, and instruct them to ask any questions they have about how their samples were scored. **(GROUP A PARTICIPANTS WILL NOW BE ASKED TO HAND BACK THEIR WRITING SAMPLES AND SCORING SHEETS. REMIND THE PARTICIPANTS THAT ON THURSDAY, MAY 8, THEY WILL MEET HERE AGAIN TO COMPLETE THE SURVEYS AND WRITING #3.)**
4. Have the students (**Group B**) define the eight criteria listed on the scoring sheet. Make sure the students understand what these elements entail. (See attached suggestions, if necessary.)
5. Hand out copies of the sample essay provided for the essay you have just scored. Have the students read the essay and mark the rubric based on how they would evaluate it. Instruct the students to be prepared to defend why they gave the ratings they did.
6. Discuss the ratings provided by the students.
7. Identify and generate corrections for problem areas or weaknesses in the essay.
8. Model, as an expert, or have volunteer students model the thought processes that you would go through to make sure that you have carefully written your paper based on EACH of the criteria.
9. Using the chalkboard or a transparency, encourage the students to develop "self-talk" in following these procedures:
    a. "What ideas do I have related to the topic?" "Which topic interests me the most?" (Make a list.)
    b. "How will I address the *what*, the *how*, and the *why* in this writing?" (Make a list of the *what*, *how*, and *why*.)
    c. "How can I make sure that I have met all of the criteria on the scoring sheet to the best of my ability?" (Look for examples of EACH criteria and put a check mark by the criteria after I have checked my work.)
    d. "Did I take the time to revise and edit my paper so that I have put forth my best effort?" (Do another read-through to identify whether you wish to make any changes.)
10. Have the students practice using the "self-talk" with the following topic: If you could change one thing about your life, **what** would you change? Make sure to explain **how** you would make this change and to discuss **why** you would make it.

11. Collect all writing samples and scoring sheets and remind the participants that this Thursday, May 8, they will meet again to complete writing sample #3.

Appendix P

Student Assent Form for research being conducted under the auspices of the University of Oklahoma- Norman Campus

You are being asked to participate in a study titled The Influence of Using Cognitive Strategy Instruction through Writing Rubrics on High School Students' Writing Achievement, Writing Self-Efficacy, Self-Regulation, Achievement Goal Orientation, and Perceptions of Classroom Goal Structures. This research is being conducted by Bryan Duke of the University of Oklahoma.

One purpose of this study is to investigate how instructional practices regarding writing assignments influence students' motivation to write and their perceptions of the classroom. Another purpose is to investigate whether these practices influence writing scores.

If you decide to participate in this study, you will be asked to complete a series of questionnaires **just before** and **just after** completing a short in-class writing assignment. You will be asked to complete a similar series of questionnaires **just before** and **just after** you complete the final in-class writing assignment. In all, you will be completing three short, in-class writings. It should take no longer than one hour of your class time each time you complete the questionnaires and writings. The questionnaires will ask the students to give their opinions of their own writing behaviors, instructional activities, and the classroom environment. The students' writing samples will be evaluated using a scoring sheet, and I am requesting permission to obtain these scores from the teacher. Several students may be invited to participate in an interview related to this study after all of the surveys and writings have been completed. The interview will last approximately twenty-five minutes.

Your answers on the questionnaires will be kept strictly private. Neither your parents, teacher, principal, nor classmates will be allowed to see your answers. When completing the questionnaires, you will be asked to print your name on a sliver of paper attached to the questionnaires. All of the names will be removed from the questionnaires and a random number will be assigned to the questionnaires once all of the data has been collected. At no time will your name be made public. In the event that individual data is reported, an alias will be used.

There is no risk from being in this study. Your participation is voluntary, and you may choose to quit at any time. There will be no penalty should you decide not to participate. Your participation will benefit educators as they may better understand the influence of instructional strategies on students' motivation and writing achievement so that they may create or refine these instructional strategies to improve learning.

By agreeing to participate in this research and by signing this form you do not waive any legal rights. You must be at least 18 years old or have parent/guardian consent to participate.

If you have any questions about this study, please contact Bryan Duke at (405) 974-5529, or you may contact his University supervisor Dr. Raymond B. Miller at (405) 325-1501. If you have any questions about your rights as a research participant, please contact the OU-NC Institutional Review Board at (405) 325-4757.

I hereby agree to participate in the above-described research. I understand my participation is voluntary and that I may withdraw at any time without penalty or loss of benefits.

Yes, I am willing to participate in this study.

_____ Initial here if you are willing to be interviewed and audiotåped during the interview.

Name (Please Print) _____ Age _____

Signature _____ Date _____

Parent/Guardian Permission Form
for research being conducted under the auspices of the
University of Oklahoma- Norman Campus

Your son/daughter, as well as his/her entire English class, is being asked to participate in a study titled The Influence of Using Cognitive Strategy Instruction through Writing Rubrics on High School Students' Writing Achievement, Writing Self-Efficacy, Self-Regulation, Achievement Goal Orientation, and Perceptions of Classroom Goal Structures. This study is being conducted by Bryan Duke of the University of Oklahoma.

One purpose of this study is to investigate how instructional practices regarding writing assignments influence students' motivation to write and their perceptions of the classroom. Another purpose is to investigate whether these practices influence writing scores.

Your child will be asked to complete a series of questionnaires **just before** and **just after** completing a short in-class writing assignment. Your child will be asked again to complete a similar series of questionnaires **just before** and **just after** he/she completes the final in-class writing assignment. In all, your child will be completing three short, in-class writings. It should take no longer than one hour of your child's class time each time he/she completes the questionnaires and writings. The questionnaires will ask the students to give their opinions of their own writing behaviors, instructional activities, and the classroom environment. The students' writing samples will be evaluated using a scoring sheet, and I am requesting permission to obtain these scores from the teacher. Several students may be invited to participate in an interview related to this study after all of the surveys and writings have been completed. The interview will last approximately twenty-five minutes.

All answers on the questionnaires will be kept strictly private. No one other than the researcher will be allowed to see your child's answers. At no time will your child's name be made public. In the event that individual data is reported, an alias will be used.

Being involved in this study poses no risk for the students, as they will not be doing anything that is not normally a part of their school day. Participation is voluntary, and your child may choose to quit at any time. There will be no penalty should your child decide not to participate. Your child's participation will benefit educators as they may better understand the influence of instructional strategies on students' motivation and writing achievement so that they may create or refine these instructional strategies to improve learning.

By allowing your child to participate in this research and by signing this form you do not waive any legal rights. Your child must be at least 18 years old or have parent/guardian consent to participate.

If you have any questions about this study, please contact me at (405) 974-5529, or you may contact my University supervisor Dr. Raymond B. Miller at (405) 325-1501. If you have any questions about your child's rights as a research participant, please contact the OU-NC Institutional Review Board at (405) 325-4757.

Bryan L. Duke, M.Ed.
Doctoral Candidate, Instructional Psychology and Technology

I hereby give permission for my child to participate in the above-described research project. I understand participation is voluntary and that I may withdraw my child at any time without penalty or loss of benefits.

Parent/Legal Guardian: Please initial the line below if you grant permission for the researcher to attain your child's writing scores and/or to be interviewed related to this study.

_____ Yes, the researcher has my permission to ask the teacher for my child's writing scores.
_____ Yes, the researcher has my permission to interview and to audiotape my child.

Student's Name (Please Print) _____
_____

Parent/Guardian Name (Please Print) _____

Parent/Guardian Signature _____ Date _____

Teacher Informed Consent Form
for research being conducted under the auspices of the
University of Oklahoma- Norman Campus

You, along with your students, are being asked to participate in a study titled The Influence of Using Cognitive Strategy Instruction through Writing Rubrics on High School Students' Writing Achievement, Writing Self-Efficacy, Self-Regulation, Achievement Goal Orientation, and Perceptions of Classroom Goal Structures. This research is being conducted by Bryan Duke of the University of Oklahoma.

One purpose of this study is to investigate how instructional practices regarding writing assignments influence students' motivation to write and their perceptions of the classroom. Another purpose is to investigate whether these practices influence writing scores.

By participating in this study, you will agree to allow your students to complete a series of questionnaires on two separate occasions: during the first and during the last data collection sessions. In all, the researcher will conduct three data collection sessions in addition to recruiting students to participate in the study. Each data collection session will last no longer than one hour. The questionnaires will ask the students to give their opinions of their own writing behaviors, instructional activities, and the classroom environment. Several students may be invited to participate in an interview related to this study after all of the surveys and writings have been completed. The interview will last approximately twenty-five minutes. All participants under the age of eighteen will have parent permission.

All responses from your students on the questionnaires will be kept strictly private. No one other than the researcher will be allowed to see an individual's answers. At no time will your name be made public. In the event that individual results are reported, an alias will be used.

Being involved in this study poses no risk for you or your students since you will not be doing anything that is not normally a part of your school day. Your participation is voluntary, and you may choose to quit at any time. There will be no penalty should you decide not to participate. Your participation will benefit educators as they may better understand the influence of instructional strategies on students' motivation and writing achievement so that they may create or refine these instructional strategies to improve learning.

By agreeing to participate in this research and by signing this form you do not waive any legal rights. If you have any questions about this study, please contact me at (405) 974-5529, or you may contact my University supervisor Dr. Raymond B. Miller at (405) 325-1501. If you have any questions about your rights as a research participant, please contact the OU-NC Institutional Review Board at (405) 325-4757.

Please indicate below whether you are willing to have this study conducted in your classroom.

I hereby agree to participate in the above-described research.

Name (Please Print) _____

Signature _____ Date _____

Pilot Study Student Assent Form
for research being conducted under the auspices of the
University of Oklahoma- Norman Campus

You are being asked to participate in a study titled The Influence of Using Cognitive Strategy Instruction through Writing Rubrics on High School Students' Writing Achievement, Writing Self-Efficacy, Self-Regulation, Achievement Goal Orientation, and Perceptions of Classroom Goal Structures. This research is being conducted by Bryan Duke of the University of Oklahoma.

One purpose of this study is to investigate how instructional practices regarding writing assignments influence students' motivation to write and their perceptions of the classroom. Another purpose is to investigate whether these practices influence writing scores.

If you decide to participate in this study, you will be asked to complete a series of questionnaires **just before** and **just after** completing a short in-class writing assignment. It should take no longer than one hour of your class time to participate. The questionnaires will ask the students to give their opinions of their own writing behaviors, instructional activities, and the classroom environment. The students' writing samples will be evaluated using a scoring sheet, and I am requesting permission to obtain these scores from the teacher.

Your answers on the questionnaires will be kept strictly private. Neither your parents, teacher, principal, nor classmates will be allowed to see your answers. When completing the questionnaires, you will be asked to print your name on a sliver of paper attached to the questionnaires. All of the names will be removed from the questionnaires and a random number will be assigned to the questionnaires once all of the data has been collected. At no time will your name be made public. In the event that individual data is reported, an alias will be used.

There is no risk from being in this study. Your participation is voluntary, and you may choose to quit at any time. There will be no penalty should you decide not to participate. Your participation will benefit educators as they may better understand the influence of instructional strategies on students' motivation and writing achievement so that they may create or refine these instructional strategies to improve learning.

By agreeing to participate in this research and by signing this form you do not waive any legal rights. You must be at least 18 years old or have parent/guardian consent to participate.

If you have any questions about this study, please contact Bryan Duke at (405) 974-5529, or you may contact his University supervisor Dr. Raymond B. Miller at (405) 325-1501. If you have any questions about your rights as a research participant, please contact the OU-NC Institutional Review Board at (405) 325-4757.

I hereby agree to participate in the above-described research. I understand my participation is voluntary and that I may withdraw at any time without penalty or loss of benefits.
Yes, I am willing to participate in this study.
Name (Please Print) _____ Age _____

Signature _____ Date _____

Pilot Study Parent/Guardian Permission Form
for research being conducted under the auspices of the
University of Oklahoma- Norman Campus

Your son/daughter, as well as his/her entire English class, is being asked to participate in a study titled The Influence of Using Cognitive Strategy Instruction through Writing Rubrics on High School Students' Writing Achievement, Writing Self-Efficacy, Self-Regulation, Achievement Goal Orientation, and Perceptions of Classroom Goal Structures. This study is being conducted by Bryan Duke of the University of Oklahoma.

One purpose of this study is to investigate how instructional practices regarding writing assignments influence students' motivation to write and their perceptions of the classroom. Another purpose is to investigate whether these practices influence writing scores.

Your child will be asked to complete a series of questionnaires **just before** and **just after** completing a short in-class writing assignment. It should take no longer than one hour of your child's class time to complete the questionnaires and the writing. The questionnaires will ask the students to give their opinions of their own writing behaviors, instructional activities, and the classroom environment. The students' writing samples will be evaluated using a scoring sheet, and I am requesting permission to obtain these scores from the teacher.

All answers on the questionnaires will be kept strictly private. No one other than the researcher will be allowed to see your child's answers. At no time will your child's name be made public. In the event that individual data is reported, an alias will be used.

Being involved in this study poses no risk for the students, as they will not be doing anything that is not normally a part of their school day. Participation is voluntary, and your child may choose to quit at any time. There will be no penalty should your child decide not to participate. Your child's participation will benefit educators as they may better understand the influence of instructional strategies on students' motivation and writing achievement so that they may create or refine these instructional strategies to improve learning.

By allowing your child to participate in this research and by signing this form you do not waive any legal rights. Your child must be at least 18 years old or have parent/guardian consent to participate.

If you have any questions about this study, please contact me at (405) 974-5529, or you may contact my University supervisor Dr. Raymond B. Miller at (405) 325-1501. If you have any questions about your child's rights as a research participant, please contact the OU-NC Institutional Review Board at (405) 325-4757.

Bryan L. Duke, M.Ed.
Doctoral Candidate, Instructional Psychology and Technology

I hereby give permission for my child to participate in the above-described research project. I understand participation is voluntary and that I may withdraw my child at any time without penalty or loss of benefits.

Parent/Legal Guardian: Please initial the line below if you grant permission for the researcher to attain your child's writing scores related to this study.

_____ Yes, the researcher has my permission to ask the teacher for my child's writing scores.

Student's Name (Please Print) _____
Parent/Guardian Name (Please Print) _____
Parent/Guardian Signature _____ Date _____

Pilot Study Teacher Informed Consent Form
for research being conducted under the auspices of the
University of Oklahoma- Norman Campus

You, along with your students, are being asked to participate in a study titled The Influence of Using Cognitive Strategy Instruction through Writing Rubrics on High School Students' Writing Achievement, Writing Self-Efficacy, Self-Regulation, Achievement Goal Orientation, and Perceptions of Classroom Goal Structures. This research is being conducted by Bryan Duke of the University of Oklahoma.

One purpose of this study is to investigate how instructional practices regarding writing assignments influence students' motivation to write and their perceptions of the classroom. Another purpose is to investigate whether these practices influence writing scores.

By participating in this study, you will agree to allow your students to complete a series of questionnaires and a short writing activity. The data collection session will last no longer than one hour. The questionnaires will ask the students to give their opinions of their own writing behaviors, instructional activities, and the classroom environment.

After the students have completed the short writing assignments, you will also agree to evaluate the students' writing samples by using a specified scoring sheet. These scores will then be reported to the researcher. All participants under the age of eighteen will have parent permission regarding the release of these scores.

Any responses or documentation you provide and all responses from your students on the questionnaires will be kept strictly private. No one other than the researcher will be allowed to see an individual's answers. At no time will your name be made public. In the event that individual results are reported, an alias will be used.

Being involved in this study poses no risk for you or your students since you will not be doing anything that is not normally a part of your school day. Your participation is voluntary, and you may choose to quit at any time. There will be no penalty should you decide not to participate. Your participation will benefit educators as they may better understand the influence of instructional strategies on students' motivation and writing achievement so that they may create or refine these instructional strategies to improve learning.

By agreeing to participate in this research and by signing this form you do not waive any legal rights. If you have any questions about this study, please contact me at (405) 974-5529, or you may contact my University supervisor Dr. Raymond B. Miller at (405) 325-1501. If you have any questions about your rights as a research participant, please contact the OU-NC Institutional Review Board at (405) 325-4757.

Please indicate below whether you are willing to have this study conducted in your classroom.

I hereby agree to participate in the above-described research.

Name (Please Print) _____

Signature _____ Date _____

Appendix Q
Script for Data Collection Session One
April 17, 2003

1. **Quickly take roll.** Students who are NOT on the list cannot participate, as I do no have required permission on file. Have students get out a couple of sheets of notebook paper and a pen.
2. *"We really appreciate that you are agreeing to participate in this study. Since this is an actual study, I have to follow very specific procedures, so please make sure that you listen carefully and follow the instructions. Remember, during the course of this study to put forth your best effort, and also remember that there are no right or wrong answers on any of the surveys."*
3. **Hand out the packet that has "Demographics for Students" as page 1 and ask the students NOT to begin completing the packet.**
4. *"The first thing I need you to do is to write your name at the bottom of page 1. You'll notice that it states that your name will be removed once your packet is coded with a secret number. After writing your name, please complete pages 1-3 only. Remember that no one will see your answers except for Mr. Duke, and he will only look at your answers once your name has been removed."*
5. **Hand out the "Writing Instruction Sheet" and "Scoring Sheet."**
6. *"Before completing page 4, let me read the instructions for today's writing sample. First, notice that there is a space at the bottom of the instruction sheet for you to write your name. Please write your name now. You should NOT write your name on your writing sample. [Read the "Writing Instruction Sheet."] Additionally, let me take a minute to read over the criteria that will be used to score your writing. [Read the "Criteria" and "3 Points" columns from the "Scoring Sheet."] Are there any questions about the writing instructions or the scoring sheet? You will be allowed only 25 minutes to complete the writing activity. Before you start on the writing activity, please complete page 4 of the packet. Do NOT complete page 5 yet, and please do not start writing until you are instructed to do so."*
7. **Once everyone has finished page 4, assign the students to begin writing. PLEASE MAKE SURE TO WRITE DOWN THE TIME THAT THE STUDENTS BEGAN THE WRITING SAMPLE. Remember, do NOT write your name on your writing sample.**
8. **As the students finish their writing sample and raise their hands, please write the time that they finished on the top of their scoring sheet, and collect the instruction/scoring sheet and their essay. After**

25 minutes has passed, please announce that the students must finish the sentence on which they are working. Record the time for all of these students as you collect their instruction/scoring sheets and writing samples.

9. *"To finish today's session, I need you to complete page 5 of the packet."*
10. **Once the students have finished page 5, please collect all packets.**
11. **Remind the students about ALL of the following things: the next session has been changed from April 29th to Wednesday, April 30th; the students should report to the same location next session; during the next session the students will get to see how their writings were scored by members of the research team; the next session may not take the full period so make sure that they bring something to read with them.**
12. **Please thank them once again and remind them that their continued participation is very important.**

Writing Start Times:

2nd _____

3rd _____

4th _____

5th _____

6th _____

7th _____

Script for Data Collection Session Two

1. Quickly take roll and have the students get out a sheet of notebook paper and a pen.
2. Hand out the writing instruction sheet for today's session.
3. Have the students write their names on the bottom of the writing instruction sheet.
4. Remind the students to utilize the rubric to encourage a better writing sample.
5. **[For the cognitive strategies group]** Remind the students to think about their thinking; in other words, suggest that they monitor their behaviors by using the scoring sheet as practiced earlier.
6. Read the instructions and the topic to the students. Check to see if there are any questions.
7. Begin the writing and allow only 25 minutes. Record the start times below.
8. Collect the writings and submit a list of names for those who were absent.

Start Times:

_____ 2nd Hour

_____ 3rd Hour

_____ 4th Hour

_____ 5th Hour

_____ 6th Hour

_____ 7th Hour

Script for Data Collection Session Three
May 8, 2003

1. **Quickly take roll.** It's important to have an accurate account today for make up purposes. Have students get out a couple of sheets of notebook paper and a pen.
2. *"We really appreciate that you have participated in this study. Please make sure that you listen carefully and follow the instructions. Please do not complete any of the surveys until you have been instructed to do so. Although the surveys are almost identical to the first set you completed, the instructions are a bit different. I will read all of the instructions out loud so that you are clear on what to do. Remember, when completing the surveys, please answer honestly; there are no right or wrong answers on any of the surveys."*
3. **Hand out the packet that has "PALS Achievement Goal Orientations-Revised" as page 1 and ask the students NOT to begin completing the packet.**
4. *"The first thing I need you to do is to write your name at the bottom of page 1. You'll notice that it states that your name will be removed once your packet is coded with a secret number.* ***[Read Part I Directions on page 1.] The directions ask for you to answer the items based on your English class. In this case, base your answers on what we have done in the study groups during your English class period."***
5. *"Next, we will complete page 2."* ***[Read Part I Directions on page 2.]***
6. **Hand out the "Writing Instruction Sheet" and "Scoring Sheet" for today's lesson.**
7. *"Before completing page 3, let me review the instructions for today's writing sample. First, notice that there is a space at the bottom of the instruction sheet for you to write your name. Please write your name now. You should NOT write your name on your writing sample. [Review the "Writing Instruction Sheet."] Additionally, let me reference the criteria that will be used to score your writing.* ***Remember to use the scoring sheet as we have discussed in class.*** *(Feel free to review with the cognitive strategies group, if necessary.) Are there any questions about the writing instructions or the scoring sheet? You will be allowed only 25 minutes to complete the writing activity. Before you start on the writing activity, please read the directions and complete page 3 of the packet. Do NOT complete page 4 yet, and please do not start writing until you are instructed to do so."*
8. **Once everyone has finished page 3, assign the students to begin writing. PLEASE MAKE SURE TO WRITE DOWN THE TIME**

THAT THE STUDENTS BEGAN THE WRITING SAMPLE.

9. **As the students finish their writing sample and raise their hands, please write the time that they finished on the top of their scoring sheet, and collect the instruction/scoring sheet and their essay. After 25 minutes has passed, please announce that the students must finish the sentence on which they are working. Record the time for all of these students as you collect their instruction/scoring sheets and writing samples.**
10. *"To finish today's session, I need you to read the directions and to complete page 4 of the packet."*
11. **Once the students have finished page 4, PLEASE HAVE THEM DOUBLE-CHECK TO MAKE SURE THEY HAVE ANSWERED ALL OF THE ITEMS and then collect all packets.**
12. **Remind the students about ALL of the following things: the students should report to their study groups on Tuesday, May 13. We will only meet for about 5 minutes so that they can see their writings. Please thank them once again.**
13. **If there is time before the students leave, please double-check to see that all surveys have been filled out completely.**
14. **Let the students know that some of them may be asked to participate in a one-on-one interview with me Tuesday. The interview will only last about 10-15 minutes. Interviewees will be randomly selected from both study groups.**

Writing Start Times:

2nd _____

3rd _____

4th _____

5th _____

6th _____

7th _____

Appendix R

Student Writing Samples Used for Feedback Sessions

Topic I

If you could change any one thing about school, what would you change? Make sure to explain how you would make this change and to discuss why you would make it.

There are many changes that I feel would improve the quality of my school and school in general. The one thing that sticks out to me is the level of dedication that is necessary for high school students.

Many people in high school do not want to be there. I think it should be a students choice to attend high school. I understand that we need an educated country in order to continue a well founded country, but I feel that we should want to learn rather than be forced to learn.

Another reason I believe that the level of difficulty should be raised is that post-high school education is becoming so common that a college degree is beggining to mean less and less. I like the fact that many people are attending college but I feel that a legitament degree is being cheapened by the fact that a high level of effort is not necessary to complete college level classes.

One way that I feel we could increase the standards at the high-school level and beyond is that our teachers should have a more extensive knowledge of their subject to be able to teach. Many times I have come into a difficult math class and had a teacher that I feel has a very difficult time educating his or her students. Also, I constantly recieve substitute teachers that are called to handle a class that they know nothing about. I feel that a higher level of education calls for higher standards than are being met.

This is one of many changes that I feel would improve our education system, but I feel that it is the most relavent to our current situation in schools. Higher levels of dedication should be necessary, and these levels are not rising as they should.

Topic II

If you were given the opportunity to perform a great deed for someone else, what would you choose to do? Make sure to explain how you would carry out this deed and to discuss why you would do it.

Some people deserve something special sometimes. My mother, for example, works very hard to support her family and give them what they need. So if I had the opportunity to perform a great deed, it would be for her.

If I could, I would send her on a wonderful vacation. She wouldn't have to worry about making any of the plans or money because I would take care of everything. I'd let her pick anywhere in the world she wanted to go. She could do any of the activities she wished to do. It would be the best experience of her life.

I would do this deed for my mom because she deserves it. She's a single, working mother that always made it to band concerts and colorguard perfomances or piano recitals. My sister and I always had someone to go to with our problems and she always helped in the best way she could. Even though my sister and I are growing up and becoming more independent, she still looks out for us.

Maybe someday when I'm rich I will be able to send my mother on the vacation of her dreams. However, until that day comes I guess I'll just have to do all the little things that I can to show her that I love her and appreciate her.

Topic III

If you were provided the opportunity to learn any new skill (whether job-related, school-related, or hobby-related), what skill would you choose to learn? Make sure to explain how you think that learning this new skill would change your life and to discuss why you would choose this particular skill.

I have always desired to become an expert in the field of money-counterfeiting. When you think, it is actually quite logical. Now, I know what you are thinking: "But that isn't legal?" Well, be that as it may, I would like nothing more than to really master the fine art of making my own currency.

Having joined and exited the work force on two occasions in my short life, I can tell you that a steady job is not for me. When I was sixteen I got a minimum wage job as a cook for Papa John's. Two days and 250 pizzas later I relieved myself of the duty. Aside from learning that I could have been the most competent pizza cook to ever work at that establishment (which is not at all something to brag about, considering no one else knew how to read), I also learned a very valuable lesson: making food is not my bag. I got a slightly better job at a grocery store sacking groceries, but small paychecks and a poor working environment hardly made up for mundane job experience. I tell of my employment history to reiterate the fact that counterfeiting a substantial and getting filthy rich off of illegal funds is right down my alley. There is no hard labor, it does not require any real people skills, and with the right training anyone can do it.

As for the economy and the harsh repercussions it would reap due to my multi-million dollar aid to inflation, well so what! It is every man for himself in the modern market place, I say. In this imperfect world there will be those among us who do wish to pursue a career in the field of counterfeit money. Is that wrong? Yes! Should they be punished? Without question! But where would this world be if everyone just played by the rules and conformed? You can just forget about your precious little "American Revolution" I can tell you that much right now.

Appendix S

Matrix of Pearson Correlations for Motivation and Achievement Variables as Assessed by the Post-Measures

	Mastery Goals	P-App Goals	P-Avd Goals	Perc Class Goals/Mastery
Mastery Goals	1.000	.359**	.196*	.560**
Perf-App Goals		1.000	.830**	.187*
Perf-Avd Goals			1.000	.149
Perc Class Goals/Mastery				1.000
Perc Class Goals/P-App				
Perc Class Goals/P-Avd				
Writing Self-Efficacy				
Self-Regulation				
Overall Revisions				
Time Spent on Writing				
Mechanical Revisions				
Grammatical Revisions				
Stylistic Revisions				
Content Revisions				
Writing Achievement				

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

	Perc Class Goals/P-App	Perc Class Goals/P-Avd	Writing Self-Efficacy	Self-Regulation
Mastery Goals	.324**	.145	.440**	.541**
Perf-App Goals	.255**	.582**	.183*	.274**
Perf-Avd Goals	.235**	.657**	.127	.174*
Perc Class Goals/Mastery	.402**	.134	.281**	.466**
Perc Class Goals/P-App	1.000	.438**	.127	.174*
Perc Class Goals/P-Avd		1.000	.133	.205**
Writing Self-Efficacy			1.000	.405**
Self-Regulation				1.000
Overall Revisions				
Time Spent on Writing				
Mechanical Revisions				
Grammatical Revisions				
Stylistic Revisions				
Content Revisions				
Writing Achievement				

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

	Overall Revisions	Time Spent on Writing	Mechanical Revisions	Grammatical Revisions
Mastery Goals	.145	.232**	.037	.126
Perf-App Goals	.019	.099	-.016	.038
Perf-Avd Goals	-.017	-.011	.026	.009
Perc Class Goals/Mastery	.084	.107	.079	.010
Perc Class Goals/P-App	-.079	-.105	-.005	-.007
Perc Class Goals/P-Avd	-.010	-.047	.037	-.036
Writing Self-Efficacy	.050	.124	-.010	.049
Self-Regulation	.160*	.232**	.078	.076
Overall Revisions	1.000	.442**	.730**	.491**
Time Spent on Writing		1.000	.224**	.245**
Mechanical Revisions			1.000	.203**
Grammatical Revisions				1.000
Stylistic Revisions				
Content Revisions				
Writing Achievement				

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

	Stylistic Revisions	Content Revisions	Writing Achievement
Mastery Goals	.149	.154*	.206**
Perf-App Goals	.052	.025	.235**
Perf-Avd Goals	-.060	-.037	.163*
Perc Class Goals/Mastery	.162*	.026	.019
Perc Class Goals/P-App	-.006	-.131	-.114
Perc Class Goals/P-Avd	.012	-.047	.095
Writing Self-Efficacy	.062	.070	.414**
Self-Regulation	.086	.169*	.258**
Overall Revisions	.537**	.839**	.283**
Time Spent on Writing	.224**	.458**	.445**
Mechanical Revisions	.164*	.287**	.141
Grammatical Revisions	.325**	.401**	.169*
Stylistic Revisions	1.000	.439**	.145
Content Revisions		1.000	.293**
Writing Achievement			1.000

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