RUBRICS AND REVISION:

WHAT ARE THE EFFECTS OF 3RD GRADERS USING RUBRICS

TO SELF-ASSESS OR PEER-ASSESS DRAFTS OF WRITING?

by

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The following individuals read and discussed the thesis submitted by student Gabriel Cameron Horn, and they also evaluated his presentation and response to questions during the final oral examination. They found that the student passed the final oral examination, and that the thesis was satisfactory for a master's degree and ready for any final modifications that they explicitly required.

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The final reading approval of the thesis was granted by Jennifer Snow-Gerono, Ph.D., Chair of the Supervisory Committee. The thesis was approved for the Graduate College by John R. Pelton, Ph.D., Dean of the Graduate College.

DEDICATION

I would like to dedicate this work to my late mother, Barbara Horn. Since her passing, she has missed many of our family's milestones, and I know she would have been here to share in the celebration of my thesis. She always helped me to appreciate all of life's blessings and taught me to place my faith, my family, and other relationships above all else. She also helped instill in me a sense of pride, dedication, devotion, and compassion, and I am forever grateful for her impact on my life.

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AUTOBIOGRAPHICAL SKETCH OF THE AUTHOR

As I was growing up in the sleepy lumber town of Drain, Oregon, I always wondered what lie beyond the fir-laden hills and desired to explore what the rest of the world had to offer. Upon graduating from high school in 1996, I moved to Boise, Idaho to broaden my horizons and further my education by attending Boise Bible College for two years and receiving an Associate's Degree.

After graduating and spending a year of internship in northern Idaho, I hit the road to receive one of the best educations that I have ever experienced. My two friends and I, along with our backpacks and miniscule bank accounts, embarked on a nine-month journey around the world. Our expedition carried us to tropical destinations such as Tahiti, the Cook Islands, and Fiji, rugged landscapes in New Zealand and Australia, brushes with unique cultures in Southeast Asia, and encounters with history in Europe. As I interacted with children from all over the globe, I was touched by the fact that they were in desperate need of an advocate. On this trip, I began to realize that I was called to use my talents to provide children with opportunities to learn, develop, and reach their potential. After this epiphany, I decided to achieve this goal by becoming a teacher.

Upon arriving back in the United States, I began pursuing a degree in Elementary Education. My thirst for adventure provided me with a job as a wildland firefighter in the summer as well. Throughout several years of fighting fires, I became a crew supervisor and developed many leadership qualities as a result. It was a physically and mentally

demanding job, but I learned many valuable lessons about work ethic, thinking creatively to solve problems, and remaining calm under extreme pressure.

The pursuit of an Elementary Education degree, along with a beautiful girl named Rhiannon that would later become my wife, led me back to Boise. We got married a couple years later and I graduated and began teaching 3rd grade in the Meridian School District. I began studying for a Master's degree in Education as soon as I started teaching.

After beginning graduate school, Rhiannon and I have been blessed with a wonderful son, Jayden, and a beautiful daughter, Brielle. With each day, we are thrilled to watch them grow and nurture them with love and support.

It has been my pleasure to work with kids, believe in them, and invest my emotions, time, and resources into helping them develop into productive citizens that love to learn about the world around them. As an educator, I have the potential to positively impact thousands of students over my career. This is a reality that I take very seriously, and I hope to continually grow and develop my craft as an educator. I know that I am only in the beginning stages of my career as an educator, but I look forward to what lies ahead on this remarkable journey.

ABSTRACT

The purpose of this quasi-experimental research thesis was to determine the effects of rubric-referenced peer-revision and self-assessment on the writing drafts of 3rd grade students. A convenience sample of students in existing classrooms engaged in two persuasive writing assignments. The first assignment established a baseline score for comparison purposes. During the second assignment, a peer-revision group and self-assessment group received different interventions that focused on revision guided by a rubric. A third control group did not receive an intervention. Student opinions toward the usefulness of the treatments were also gathered through a questionnaire that was delivered after the writing assignments were complete.

The utilization of rubrics to assist peers in revision had a statistically significant, positive effect on student scores during the second persuasive writing assignment. The treatment of rubric-referenced self-assessment did not have an overall positive effect on student scores during the second assignment. The control group's scores decreased slightly on the second assignment. Almost every student in the peer-revision group thought the treatment was beneficial for student writing. In comparison, a little more than half the students in the self-assessment group considered the treatment to be useful in helping them achieve higher scores or become more proficient writers.

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INTRODUCTION

Educators have used rubrics for years, primarily as a tool for assessing student products and performances. As a teacher, rubrics have provided me with specific descriptions of proficiency in various content domains, thus making the assessment process one that has clear standards and targets. As I have gained more proficiency in creating and using rubrics to assess student work, I have become interested in using rubrics as formative assessment tools to provide students with feedback regarding works in progress (Cohen, Lotan, Scarloss, Schultz, and Abram, 2002; Andrade, Du, & Wang, 2008). As I have observed in my classroom, students have benefited from possessing rubrics before and during assignments. My students have been able to clearly determine the objectives for projects and assignments by studying rubrics. At times when my students have not been given rubrics to guide their writing assignments, classroom performances, or other activities where they have created products, they have been unclear and confused about expectations. When my students have been confused and frustrated regarding assignments, many times my reactions have been the same as well (which have done nothing to remedy the situation). I realized that when my students were not provided with clear support and guidance, they were much more likely to fail or become unmotivated. Every educator endeavors to communicate clearly to students, and rubrics have been a valuable tool that I have begun to use to achieve that goal of effective communication.

Recent research has advocated the use of rubrics for purposes beyond summative assessment. Studies that suggest the benefits of using rubrics as teaching tools, in addition to simply assessing completed student work with them (Andrade, Du, & Wang, 2008; Burrack, 2002, Orsmond, Merry, & Callaghan, 2004), have prompted the questions in this research proposal.

Andrade et al. (2008) investigated the effects of elementary students using models to list criteria for writing assignments, and utilizing rubrics to self-assess drafts of writing. Researchers in the study found a statistically significant positive association between rubric-referenced self-assessment and higher total essay scores and scores on individual criteria. However, no studies have researched the effects of students using rubrics to guide peer-revision. The utilization of rubrics during revision might simplify the complex process of peer-revision.

My study had an overall research focus. I hoped to ascertain whether or not there are overall significant differences between three groups of third graders who were given three different writing interventions when compared to scores on a previous assignment without an intervention. My research was considered quasi-experimental, but I also believe that it could have been defined as teacher inquiry. According to Dana and Yendol-Hoppey (2009), teacher inquiry is the "systematic, intentional study of one's own professional practice." Throughout this study, I analyzed the processes and practices that I employed as a teacher in order to improve my craft. These writing interventions involved the use of rubrics as formative assessment tools to aid students in assessing their own writing drafts and the drafts of classmates. I hope to utilize the information gathered

from this study to help my students improve as young authors and understand the processes involved in communicating effectively through the writing process.

Significance of the Study

There are several reasons why a study of this nature should be implemented. One reason is to assist teachers in determining the appropriate instructional methods in teaching writing to elementary school students. Teaching writing, and revision skills in particular, is a complex and subjective process (Bereiter & Scardamalia, 1987; Flower & Hayes, 1981). The results of this study could provide writing instructors with an effective formative assessment tool that may help them teach students to revise papers more effectively. Another reason this study is important is to help elementary students develop as writers. Many elementary school students lack the metacognitive skills to help them revise their writing (Chanquoy, 2001) and this study was necessary to demonstrate that students may benefit from the scaffolding that rubrics might provide students during the revision process. As stated earlier, no studies have investigated the effects of using rubrics to guide peer-revision, so this study should provide some insight into its effectiveness.

Definition of Terms

ANOVA – Analysis of Variance. A statistical measurement used to determine whether or not the means of several groups have a statistically significant difference.

ISAT – Idaho Standards Achievement Test. A standardized test provided to students in Idaho in grades 3-10 that measures growth and proficiency in the areas of reading, math, language, and science.

Paired Samples *t*-Test. A statistical procedure used to compare means when there is only one sample that has been tested two times or there are two separate samples that have been "matched" based on certain characteristics.

Path Analysis. A statistical technique that is used to examine cause and effect between two or more variables.

Post Hoc Comparison. A statistical procedure sometimes used at the second stage of the ANOVA to determine which groups significantly differ from others in respect to the mean.

Rubric. A scoring guide that contains evaluative criteria on a continuum from poor to exceptional quality.

Statistically Significant. The result of an experiment that is unlikely to have occurred by chance. A level frequently quoted is $p < .05$, which means that there is less than a 5% chance the results were accidental.

<u>Tukey HSD Test – Tukey Honestly Significant Difference Test.</u> A single-step multiple comparison procedure and statistical test generally used in conjunction with an ANOVA (as a post hoc comparison) to find which means are significantly different from one another.

REVIEW OF LITERATURE

Writing is a complex cognitive, physical, social, and emotional process that has been widely researched and scrutinized. For many years, educators and researchers have endeavored to uncover and analyze the various processes that a writer uses to produce text. They have also conducted research focusing on effective strategies for teaching writing. While this research has provided educators with solutions to their inquiries regarding the teaching of writing, many questions continue to be considered.

This literature review attempts to provide an overview of the writing process, particularly the revision component of writing. This paper also examines the value of formative assessments such as self-monitoring and peer-assessment in helping students create quality writing products. One of the main tenets of this literature review is that many of the aforementioned components can be juxtaposed with rubrics in order to help elementary school students revise text and communicate more effectively through their writing.

The Writing Process

In recent years, writing has been regarded as a process of several complex cognitive tasks (Bereiter & Scardamalia, 1987). The focus of writing instruction has shifted from analysis of finished products to the examination of the process that one undergoes while composing. Many researchers have theorized about the various stages of

the writing process, and many models exist regarding the process of writing. One particular model, as proposed by Flower and Hayes (1981), analyzes this process into three activities: planning, translating, and reviewing. During the planning stage, a writer establishes goals, generates ideas, and organizes plans for the text. A writer's goals are dependent on the topic, the specific writing genre, purposes of writing, and the audience that will be reading the piece (Tompkins, 2008). Flower and Hayes (1981) noted that translating occurs when the goals become actualized into text and are written down. When a writer reviews text, he/she evaluates the writing and revises and edits information accordingly. The writing process is recursive in nature (Austin, 1991). A writer may move fluidly between these stages depending on the needs that are present at the time.

Others have analyzed the Flower and Hayes model of the writing process (1981) into several recursive stages. One model in particular includes five steps: prewriting, drafting, revising, editing, and publishing (Tompkins, 2008). Many of the differences between models of writing are a matter of semantics. The prewriting stage is similar to Flower and Hayes' planning process. Tompkins' description of drafting is similar to Flower and Hayes' depiction of translating. In her model, Tompkins divided the reviewing stage into two separate components: revising ideas and editing for mechanical errors (spelling, grammar, and punctuation). Saddler (2003) noted the importance of students distinguishing between revising and editing. In Tompkins' model of the writing process, she included the step of publishing, where an author publishes in an appropriate form and shares writing with an audience.

Revision

Donald Murray (1991) described the relationship between writing and revision by declaring, "Writing *is* revising, and the writer's craft is largely a matter of knowing how to discover what you have to say, develop, and clarify it, each requiring the craft of revision" (p. 2). The main objective of revision is to improve the quality of a text's communication as well as clarify a writer's thoughts (McCutchen, Francis, & Kerr, 1997). Revision has been described as an examination, or review, of text that has already been written, followed by modifications in order to align with the writer's original intentions for the writing piece (Temple, Nathan, Temple, & Burris, 1982). This is a more narrow view of revision, as several researchers have observed that revision occurs during several stages of the writing and planning process (even before text has been written) and can operate as a catalyst for writers modifying intentions and plans for writing (Fitzgerald, 1987; Bereiter & Scardamalia, 1987; Faigley, Cherry, Jollifre, & Skinner, 1985; MacArthur, 2007). However, Chanquoy (2001) recommended that inexperienced writers wait until a draft has been completed before beginning to revise. Her reasoning is that the writing and revision processes won't be competing with one another in a student's limited working memory, thus allowing students to focus more clearly on one task at a time.

Several researchers have proposed models of revision. A model introduced by Scardamalia and Bereiter (1987) includes specific techniques to scaffold young writers in revision processes. This model incorporates three operations called CDO (Compare, Diagnose, and Operate). According to the authors, writers store two representations of text in long-term memory: how the text looks as it is written and how the text should

look. When a writer notices a discrepancy between the two representations, the CDO procedure is activated. During comparison, the author evaluates the amount of discrepancy between intentions and produced text. The writer then diagnoses the nature of the problem and selects a strategy to remedy the situation. Finally, the writer modifies the mistake during the operation stage. This cycle is repeated during the revision process until the writer's actual text matches the writer's original objectives.

Another model, proposed by Flower, Hayes, Carey, Shriver, and Stratman (1986) focuses on the specific knowledge of strategies that is necessary for a writer to revise proficiently. Flower et al. argued that revision could be divided into four separate sub-processes: task definition, text evaluation and problem definition, selection of strategies, and execution. Task definition refers to the writer's knowledge about revision and the context in which revision will occur. The writer must understand the goals of revision, how to revise, and which parts of the text need improvement. Significant factors in defining a task include a writer's knowledge about the particular genre, purposes of writing, audience, instructions for writing, and the social environment. Text evaluation is a cognitive task that involves a writer exploring a text and detecting discrepancies between goals and produced text. During strategy selection, the writer identifies the process needed to remedy problems within the text. The writer can ignore the error, search for more information to better understand the mistake, rewrite the text while maintaining the main idea, or simply fix the error while preserving the text that has already been written. Execution refers to the actual implementation of modifications that have previously been identified by the writer. The aforementioned models of revision can be particularly helpful to educators in diagnosing revising difficulties among students.

Revision Differences Between Expert and Novice Writers

The cognitive complexity of revision creates a disparity between writers possessing the ability to revise effectively and those who struggle. Based on the amount and quality of revisions, two types of writer have been distinguished: novices and experts (Flower & Hayes, 1981). Several clear distinctions have been made regarding the composing and revising processes of the two categories of writers. Expert writers have been observed "thinking aloud," setting goals, examining past writing, seeking feedback, and reconciling ideas to goals during the composing process (Temple, Nathan, Temple, & Burris, 1982).

On the other hand, novice writers generally perform few spontaneous revisions during writing (Bereiter & Scardamalia, 1987). Bereiter and Scardamalia argued that young children who are novice writers lack the "executive control" (p. 84) to switch between writing, reading, and reflecting. The authors referred to this phenomenon as "knowledge-telling" (p. 5). When students are engaged in this mode, they simply focus on what to say next and how to say it. During the composing process, they don't reflect on the goals for writing and compare their text to their original intentions. Many novice writers lack metacognition, which is a degree of thinking that involves monitoring cognition in learning tasks. Novice writers need to be able to stop the process of writing in order to engage in reading and reflection. Calkins (1986) observed that writers miss the important process of revision when they neglect to reflect on the message and content of a text. The lack of reflection, in turn, adversely affects the quality of their final drafts.

The revisions of experts are more sophisticated and involve more modifications to the ideas of the text (Faigley & Witte, 1981). Faigley and Witte compared the revision frequency and strategies of college freshmen, advanced college students, and expert adult writers. The college freshmen in the study predominantly made non-meaning revisions. Their revisions were on the surface layer and focused more on deleting and inserting words and attending to mechanical errors. Revisions completed by the advanced students and expert writers were sophisticated in nature. These revisions involved substantive changes in meaning, content, and form. The experienced writers also condensed and elaborated on ideas in order to communicate more clearly.

In contrast to expert writers, the revisions performed by novices are more superficial (Chanquoy, 2001). According to Calkins (1986), novice writers view revision as simple corrections. Novices believe that revision entails fixing boring parts, confusing sections, or grammatical errors. They aren't cognizant of the helpfulness of revision in discovering new meanings for a text.

Various theories exist explaining the inabilities of novices to revise proficiently. Graham, MacArthur, and Schwartz (1995) proposed that several reasons limit the revision of novice writers. The first reason is that inexperienced writers have not clearly defined their goals and intentions for a writing project. Graham et al. also noted that novices have difficulty reading and evaluating their writing. The researchers also proposed that novices don't know what should be modified or how to implement changes to writing. Atwell (1987) agreed by suggesting that novice students don't know how to revise.

Graves (1994) suggested several reasons why inexperienced writers have difficulty revising. He postulated that many students don't know enough about the topic in order to make judgments. He also cited a lack of audience awareness. Novices either write for themselves or assume that readers will understand their writing. Graves also asserted that many students view writing negatively and don't desire to put forth the effort necessary to modify drafts. According to Graves, another reason that some students struggle with revision is unfamiliarity with genres. If students are unclear about purposes or forms of specific genres, they are unaware of what to seek out during the revision process. He also observed that many teachers focused primarily on proper mechanics instead of ideas, thus limiting the amount of effective revision by students.

Effective Instruction for Teaching Revision

Research has uncovered several effective instructional strategies for teaching students how to revise writing. One skill that is essential for effective revision is critical reading. When revising, a writer must be able to critically evaluate a text from a distance (MacArthur, 2007). A proficient reviser must be able to clearly follow a text's ideas and detect problems with organization, coherence, and clarity. If a writer lacks critical reading skills, the meaning of the text will appear to be clear because it originated in the author's mind and the author will be unable to identify deficiencies. Since critical reading is necessary for revision, instructors should teach students how to make inferences, follow a sequence of ideas, and be able to identify problems with clarity.

Another strategy that has been shown to facilitate proficient revision is the utilization of evaluative criteria. Some studies have shown that students can revise more

effectively when they are aware of specific evaluative criteria that are sometimes related to particular genres. In a meta-analysis of writing instruction research projects, Hillocks (as cited by MacArthur, 2007) reported that when students are taught to evaluate writing using specific criteria, there is a moderately strong effect on writing quality and revision skills. He recounted six studies utilizing the aforementioned instructional strategy that led to positive results. It is important for students to understand what proficient writing looks like in a particular genre and be able to diagnose problems with the structure and content of writing in that specific genre. In order to be able to effectively apply the criteria to papers for revision purposes, students need a great deal of practice with model papers (MacArthur, 2007). When students interact with models while using evaluative criteria, they can identify specific problems and work toward revising effectively.

Instruction on specific planning and revising strategies, otherwise known as cognitive strategy instruction, has shown to be effective as well. After an examination of 11 studies where instructors taught revising strategies, unaccompanied or in conjunction with planning strategies, Graham (2006) concluded that students consistently improved the quality of writing and amount of revision as a result of these interventions. In studies, teachers explicitly taught the process of revision to students, utilized think-alouds as a modeling tool, guided the students in revision strategies while offering feedback, and eventually enabled the students to independently hone their revision skills.

The Role of Formative Assessments

Some of the revising difficulties experienced by novice writers may be alleviated through the use of effective formative assessments. Formative assessments, as opposed to

summative assessments that evaluate a completed piece of work, are ongoing evaluations of works in progress. Effective formative assessments provide students with the information that is necessary for them to differentiate between their performance and the learning goals for a task (Brookhart, 2007). Two examples of formative assessment, which will later be discussed in detail, are self-assessment and peer-evaluation. Formative assessments have been regarded as assessment for learning due to the manner in which students can improve based upon information received from the assessment (Colby-Kelly & Turner, 2007). Stiggins (2005) asserted that assessments for learning are "continuous" and are used to "inform students about themselves during learning" (p. 26). Stiggins also argued that students needed to be cognizant of clearly defined learning goals and involved in the assessment process in order to take responsibility over their learning. Practical implications of formative assessment include diagnosing needs, charting improvements, informing students about progress in relation to learning goals, and assisting teachers in planning to meet individual needs.

Crooks (1988) was one of the first researchers to investigate the links between assessment and student achievement, student use of cognitive strategies, and motivation to succeed. After his study, classroom assessments began to be viewed as a positive force that allowed students to become more autonomous learners (Colby-Kelly & Turner, 2007). Black and William (1998) reviewed over 250 assessment studies and reported on eight representative examples in Great Britain in the areas of math, science, and other subjects. These studies focused on the effects of assessments for learning. The researchers concluded that formative assessment was the most important factor related to improved learning among the students studied. Black and William noted improvements in

weaker and stronger students, particularly the motivation of weaker students due to the

scaffolding and support provided by the assessments. They also highlighted that

formative assessments raised standards of excellence and motivated students to achieve

their academic goals.

Self-Assessment of Writing

Many benefits of students practicing self-assessment in school have been

reported. Self-assessment is considered an important skill for success in careers and

other situations in life (Rademacher, 2000). When students practice self-assessment,

responsibility for learning and evaluation shifts from the teacher to the student. Self-

evaluation provides students with a sense of ownership and control over learning. When

students have been engaged in self-evaluation exercises, McVarish & Solloway (2002)

have observed the atmosphere of classrooms shift from competitiveness to unified,

collaborative communities where each student's contributions are welcomed.

Studies have reported the positive effects of self-assessment on performance in

various subject areas (Black, Harrison, Lee, Marshall, & William, 2004; Ross,

Hogaboam-Gray, & Rolheiser, 2002). Maqsud and Pillai (1991) studied high school

agricultural science students in South Africa who scored their own exams for one

semester. On the final exams of the semester, the self-scoring group significantly

outperformed students in the instructor-scored group. In a separate study, the instructor

had undergraduate students self-assess class participation midway through the term and

develop a specific improvement plan. All students reported it was helpful to write

improvement plans. Most of the students also increased participation in the second half and earned higher grades on the final exam compared to the midterm exam (Oppenheimer, 2001).

Weeden and Winter (1999) studied schools and found very little evidence of self-assessment. Students mostly regarded assessment as a summative procedure, and most of the students regarded feedback as negative. As a result of the study, they recommended that teachers communicate expectations more clearly and provide more opportunities for self-assessment of learning tasks. Mercer and Mercer (as cited in Rademacher, 2000) recommended three steps for teaching students to become successful self-evaluators. Their first recommendation is to discuss the importance and benefits of self-evaluation with students. The second successful ingredient is modeling how to assess oneself, focusing particularly on deviations from the goal and charting a specific path toward achieving the objective. Finally, they advocated providing students with practice and providing specific feedback regarding the quality of their self-assessments.

Recently, the subject of self-assessment of writing has been examined as well. Ross, Rolheiser, and Hogaboam-Gray (1999) investigated the effects of student self-assessment on writing performance. Students that were weak writers in 4th, 5th, and 6th grade were trained in self-assessment strategies. These students scored higher than the control group in narrative writing, particularly in the areas of plot development, incorporation of story elements, and using narrative voice. Andrade and Boulay (2003) reported that 7th and 8th grade students who engaged in self-assessment strategies

produced higher quality writing, particularly girls. Daiute (1986) also observed that students using word processors revised more effectively when they used a revision checklist to guide self-assessment.

Several researchers have highlighted some inherent weaknesses with allowing students to assess themselves. Young elementary students have been reported to be less reliable self-assessors than older students (Falchikov, 1986). Students with higher abilities tended to give themselves poorer marks than warranted and average students gave themselves marks that were too high. When compared to peer and teacher feedback, self-assessment has shown to exhibit weaknesses. Jacobs and Zhang (1989) studied the differences between self-assessment, peer assessment, and teacher assessment on writing assignments of 81 English Language Learner college students. The researchers examined papers with the three different interventions and analyzed improvements from drafts to final products. Papers that were subjected to peer feedback and teacher feedback were more effective at revising grammatical errors than self-assessed essays.

Peer-Assessment of Writing

Various studies have been conducted at a range of age levels regarding the effectiveness of peer-assessment of writing. Researchers at the university level have observed that peer-assessment has increased time on task, increased student reflection toward work, and has provided students with a greater sense of responsibility and accountability for producing quality writing (Topping, 1998). Riley (1995) noted that peer-assessment assisted students in developing verbal communication and negotiating skills while fostering a sense of teamwork amongst classmates.

Case studies of elementary students providing feedback to peers during the writing process have reported positive results (Calkins, 1983; Crowhurst, 1979). In a study by Wollman-Bonilla and Werchadlo (1999), first graders shared literature response journal entries to peer groups and received feedback. Many students in the class were introduced to various sophisticated categories of responses (such as making personal connections to a story) through listening to peers' entries and began inserting these responses into their own journals. During the study, the students increasingly wrote more thoughtful and lengthy literature responses with a sense of voice and an attempt to elicit audience reactions. The authors attributed these improvements to students being provided the opportunity for sharing work and receiving peer feedback from peers. However, other studies have shown difficulty linking peer-assessment to elementary students' writing improvement at a statistically significant level (Stevens, Madden, Slavin, & Farnish, 1987; Ziv, 1983).

Studies of peer-assessments during writing in middle school and high school have reported various benefits, though. For example, Wong, Butler, and Ficzere (1996) noted that peer assessment helps students consider quality of writing from others' perspectives. Olson (1990) also studied the effects of peer feedback on writing drafts of 93 sixth graders and concluded that peer feedback had positive effects on quality of writing. The groups that received peer feedback in the study ranked the highest in terms of writing quality, but the difference was not reported at a statistically significant level. However, the study does not specify the amount of training that students received on the subject of effective peer feedback.

Boscolo and Ascorti (2004) studied peer-revision with elementary and middle school students by focusing on clarity and coherence of ideas. The instructors had students write personal narratives, serve as an editor for a partner and identify unclear sections of text, and discuss how to improve clarity. Students in this study improved in their ability to recognize sections of a text that impeded comprehension and wrote clearer narratives.

Two studies involved special education students in peer-revision along with word processing, training in revision strategies, and instruction in specific evaluation criteria (MacArthur, Graham, & Schwartz, 1991; Stoddard & MacArthur, 1993). In order to prepare for peer revision, students practiced applying specific evaluation criteria on model papers after extensive teacher modeling. Students wrote papers on word processors, and then took turns revising papers with a partner. While revising, editors listened to the author read the paper, explained strengths in the paper to the author, read the paper while asking specific evaluation questions, conferred with the author regarding evaluation questions and suggestions, and the author implemented any changes to the paper. As a result of combining peer revision with instruction on revising strategies and evaluative criteria, students revised papers more effectively with greater complexity and they enhanced the overall quality of their writing.

MacArthur (2007) also noted two more benefits that students may experience as a result of peer-revision. The first positive result of peer-assessment is that students will be able to determine whether or not their writing communicates clearly to an audience and will be able to revise accordingly. Another reported benefit of peer-revision is that

students will be able to practice reading papers critically as editors in order to recognize

problems, a skill that proficient readers and revisers need to possess.

Some questions have been raised regarding the effectiveness of peer-assessment.

While there are many students that are willing to share writing pieces and enjoy the

possibility of displaying their creativity, some students view sharing writing drafts with

classmates as threatening (Lindblom-Ylanne & Pihlajamaki, 2003). According to

Falchikov (1995), some students might not be willing to accept responsibility for

assessing classmates. Other students might not accept peer feedback as being accurate,

and thereby will not act upon it. Sluijsmans, Dochy, and Moerkerke (1999) argued that

the effects of peer- assessment could be limited based on peers judging too easily or

harshly based on friendships. However, several studies have found a fairly high

agreement level between scores given by peers and those provided by instructors

(Falchikov, 1993; Freeman, 1995).

Rubrics as Formative Assessment Tools

Rubrics are scoring guides that contain evaluative criteria on a continuum from

poor to exceptional quality. Each level of quality contains a description of the work that

merits the corresponding grade. They are typically used to judge performance tests, such

as science projects, writing assignments, and oral presentations (Popham, 1997). Rubrics

have been praised because they help teachers focus on goals, create lessons that focus on

the predetermined objectives, convey the goals to students, direct feedback on students'

progress towards targets, and evaluate student products based on alignment with goals

(Saddler & Andrade, 2004). Rubrics can focus the efforts of instructors and students and

help each group understand the goals for a project or assignment. However, the validity and reliability of rubrics has been scrutinized (Moskal & Leydens, 2000). Popham (1997) suggested that many rubrics are either so task-specific that they overlook essentials or too vague and generic in their descriptions of quality.

Many of the rubrics that are employed by instructors for the purposes of assessing student writing are based on effective writing traits. Culham (2003) proposed that there are seven effective traits of writing that instructors can utilize to teach and assess writing. They are: ideas, organization, sentence fluency, word choice, voice, conventions, and presentation. Culham's 6+1 traits of writing method for teaching and assessment are popular among educators.

There have been few studies that have investigated the effects of rubric use in educational settings. Cohen, Lotan, Scarloss, Schultz, and Abram (2002) studied students in five sixth grade social studies classes that were provided rubrics for collaboratively written essays. Students that received rubrics created better group products and were involved in more focused and successful group discussions. Cohen, Lotan, Scarloss, Schultz, and Abram concluded through path analysis that the rubrics had an indirect effect on essay scores. Orsmond, Merry, and Callaghan (2004) also concluded that when students are provided with "criteria-referenced schemes," they have more clarity about expectations. In one study, music students in college used rubrics to self-assess musical performances that were recorded. During subsequent performances, the students showed significant improvement in all areas (Burrack, 2002).

Andrade (2001) researched rubric use by 7th and 8th graders on written essays. The treatment group that received rubrics was able to identify more of the qualities of

effective writing on a questionnaire, but this knowledge didn't necessarily translate into their writing. Rubric use was associated with higher scores on only one of three essays. This study was followed up by another research project that investigated the effects of model writing pieces, student-generated criteria, and rubric-referenced self-assessment of works in progress on 116 3rd and 4th graders' writing scores in seven elementary schools (Andrade, Du, & Wang, 2008). Students in this study were more actively engaged (than in Andrade's 2001 experiment) with the rubrics during the whole writing process. Researchers in this study found a statistically significant positive association between rubric-referenced self-assessment and higher total essay scores and scores on individual criteria. However, the authors noted some limitations to the study and the need for further research in this area. They highlighted the fact that the quasi-experimental study only involved one writing assignment, each class didn't receive the same exact writing assignment or genre of writing, and the study utilized multiple teachers with varying styles.

Rubrics, Revision, and Feedback

Novice writers have difficulty revising their writing (Chanquoy, 2001; Calkins, 1986). As previously explained, inexperienced writers have difficulty identifying traits of effective writing and setting goals that will lead to effective communication. Concomitant to the aforementioned pitfalls, novices also have difficulty assessing their own writing to verify whether standards have been reached. Inexperienced writers also have difficulty actually executing revision processes. If implemented properly as a teaching tool, rubrics can provide scaffolding that is necessary to help students monitor their own writing.

Bereiter and Scardamalia (1987) asserted that novices need scaffolding in order to evaluate writing based upon the writing's goals and guidance in modifying content and ideas in order to improve. When students engage with rubrics before, during, and after the writing process, they can provide the specific, tangible goals in various areas for writing that novices need in order to be successful. For instance, students can use a rubric to improve the organization of a paper. Suppose the rubric states that an effectively organized persuasive paper needs an introduction with an argument that is clearly stated, at least three clearly expressed reasons for the argument, and an ending that noticeably leads the reader to a conclusion. A student can apply the criteria to his/her paper and clearly judge whether or not the paper meets the standards for organization. If the paper is found to be lacking in any areas, the student can make a note on the draft for further revision. This type of support should enable students to improve in many facets of their writing.

One focal point of this paper has been the impact of different types of feedback, such as self-assessment and peer-assessment, on learners' motivation and academic achievement. Rubrics can provide clear feedback when utilized during the writing process as a formative assessment tool. Previously, this paper examined ways that peer-assessment has been shown to assist students during the revision process. The results have been mixed regarding peer-assessment, but the use of rubrics during peer-assessment adds an element of scaffolding that may be necessary in order to assist peers in providing clear, specific feedback.

Research Questions and Hypotheses

In light of the themes presented in this literature review, this study attempted to answer questions that focus on several of the aforementioned elements. The first research question was this: What are the effects of 3rd grade students being trained in using rubrics to self-assess or peer-assess writing drafts? The second question this study intended to address was this: Are there significant differences in writing scores between three groups of 3rd grade students who receive different interventions based on rubric-referenced revision? Prior research (Calkins, 1983; Crowhurst, 1979; Wollman-Bonilla &

Werchadlo, 1999) has examined the effects of peer-revision, however these studies did not utilize rubrics to scaffold the process. A third research question for the study was this: In what ways do 3rd grade students perceive rubric-referenced self-assessment or rubric-referenced peer-assessment to be a helpful component of revising writing drafts?

There were two hypotheses regarding this study. The first hypothesis was that overall student scores in the peer-assessment group would improve on the second assignment more than those in the control group. The second hypothesis was that overall student scores in the self-assessment group would improve between assignments more than those in the control group at a statistically significant level.

Many companies publish rubrics that are used as assessment tools, but involving students in criteria generation (though they didn't create the rubrics) and training them in using rubrics to guide feedback serves to familiarize the students with the goals for the writing assignment and aid them in assessing their peers' works in progress. The study

conducted by Andrade et al. (2008) investigated the effects of rubric-referenced self-assessment, but this study also compared the effects of rubric-referenced self-assessment to those of rubric-referenced peer-assessment. Rubrics can be powerful tools for planning, composing, revising, and providing valuable feedback in order to help young writers improve in their endeavors.

METHODOLOGY

Participants

This study employed a convenience sample of 57 third grade students from three classes in an elementary school in an urban school district in southwest Idaho. 70 students received instruction, but data from 13 students wasn't included due to absences or missing assignments. Over 88% of the school population was Caucasian. Asians were the second largest ethnicity, which comprised 3% of the school. About 17% of the school population was eligible for free or reduced lunches. Among the participants, 43.9% (n = 25) were boys and 56.1% (n = 32) were girls. Out of the study participants, 10.5% (n = 6) of the participants received special education services and 15.8% (n = 9) of the participants were in the district's gifted program. On the Idaho Standards Achievement Test in the area of Language, the self-assessment group's average score of 208 was higher than the control group's score of 205 and the peer-assessment group's score of 204. According to test results for the Idaho Standards Achievement Test, the class average for the self-assessment group was considered "advanced," and the averages for the other two groups were considered "proficient." Participants were not randomly assigned to groups, therefore the research design was quasi-experimental. This study occurred near the end of the 2008-2009 school year in the months of April and May.

Procedures

In this study, the students engaged in writing processes for two persuasive writing assignments (see Appendix A). Students in all groups were provided the same instruction and assessment during the first writing project. An outline of each lesson for the first assignment is included in Appendix B. The primary researcher, who is the classroom teacher for the peer-assessment group, discussed the lesson plans with the teachers of the other two groups before the two assignments began. This one-hour meeting ensured that the instructors were cognizant of the goals and procedures for each lesson. After instruction was completed, the teachers reported back that the only deviation from the lesson plans was that technical difficulties prevented one instructor from using some persuasive videos from websites.

The second assignment, which occurred a week after the first assignment was completed, was not similar for the three groups. An outline of each lesson for the second assignment for each group is included in Appendix B.

During the second assignment, one group received three training sessions on using a rubric for self-assessment purposes. The instructor for this group has been a teacher for 17 years. The training consisted mainly of teacher modeling, guided practice with feedback, and independent student practice of assessing models of writing with the rubric. They also used the rubric to self-assess drafts and made revisions based upon their self-assessments. Students assessed one trait of writing at a time with prompting by the instructor. They were asked to underline important phrases in the rubric with colored pencils or markers, and used the same writing instrument to underline the section of the writing draft that displayed evidence that the particular objective in the

rubric had been met. If the students felt like the objective for each writing trait was not met with a score of 5, they wrote a note on the first draft that was used as a reminder to improve that particular piece of writing. The students used a different colored pencil or marker for each writing trait. When the students were assessing conventions, they used editing marks on the first draft to highlight mistakes.

A second group received three training sessions on using a rubric for the purpose of peer-assessment. The training consisted mainly of teacher modeling, guided practice with feedback, and a role-playing exercise where students practiced providing specific feedback to peers based on a rubric-referenced assessment. The instructor of this group was the primary researcher and he has been teaching for three years. Hattie and Timperley (2007) suggested that one asks three questions when providing feedback: Where am I going? How am I going? Where to next? After receiving peer-assessment training with a rubric, these questions were addressed when students provided rubric-referenced feedback to peers.

In a fashion similar to the self-assessment group, students in the peer-assessment group assessed one trait of their peers' writing at a time. They were asked to underline important phrases in the rubric with colored pencils or marker, and used the same writing instrument to underline the section of the writing draft that displayed evidence that the particular objective in the rubric was met. If the students felt like the objective for each writing trait was not met with a score of 5, they wrote a note on the first draft that was used as a reminder to improve that particular piece of writing. The students used a different colored pencil or marker for each writing trait. When the students were assessing conventions, they used editing marks on the first draft to highlight mistakes.

After they finished assessing their partner's paper, they met with their partners and shared

their assessment results trait by trait and offered suggestions for improvement. They

ended the meeting by reviewing their partner's strongest and weakest traits.

A third group did not receive training on self-assessment or peer-assessment with

a rubric as a guide. However, they engaged in lessons that focused on effective

organization of ideas, one of the traits of effective writing as identified by Culham

(2003). This training received by the control group ensured that the three groups were

exposed to equal amounts of writing instruction. The instructor for this group has been

teaching for 13 years.

After the two assignments were completed, the instructors for the self-assessment

and peer-assessment treatment groups provided a journal prompt for the students. The

purpose of this exercise was to have students reflect on the process of using rubrics as

formative assessment tools. Their reflections indicated whether or not the students

deemed the interventions to be useful or helpful to them as writers. The journal prompts

for the self-assessment group and peer-assessment group has been provided in Appendix

J. Students did not provide names on papers in order to remain anonymous.

Scoring

After the first and second assignments were completed, a person that had not

previously been involved in the study collected all papers from both assignments for the

three groups. This person randomly sorted and coded papers with a number and covered

any student names that were on papers. She kept a spreadsheet that organized the coded

papers into groups and was used as a key to identify students based on the numbers

assigned to papers. The scorers did not have access to this spreadsheet, ensuring that the scorers were blind to the assignment number (first assignment versus second assignment) and treatment group. The original student papers weren't scored because the papers might have included attributes that would have identified groups (such as completed rubrics attached to them, signifying a treatment group member). Instructions for the "coder" are provided in Appendix C.

In order to score each student's final draft, the instructors utilized the same rubric that the students used in the study for revising purposes. The rubric that was used was based on the 6+1 Traits of Writing method (Culham, 2003). These are the five traits that were assessed in the rubric: ideas, organization, voice, word choice, and conventions. The rubric that was provided for students during the experiment and used to score final drafts is provided in Appendix D.

In order to control for individual grading practices, the scorers were given a scoring procedure (see Appendix E). The essays ($N = 114$) were divided up and scored by six instructors. Each scorer was provided with two sample essays to utilize as anchor papers when they assessed the papers in the experiment. At different times and locations, two instructors independently assessed many of the same essays. After an instructor graded each essay, the assessor recorded a score for each writing trait on a spreadsheet. If a paper was assessed by two separate teachers, the two scores were averaged together to calculate a final score.

Out of 114 total student papers, two instructors independently assessed 62% ($n = 71$) of the essays. Scores on these papers were compared in order to calculate percentage agreement. The following scenario explains how percentage agreement was

calculated: If two instructors completely agreed on 3 out of 5 scores, their percentage

agreement was 60% for complete agreement. If 3 out of 5 scores were within ½ a point or

less between the two assessors, their percentage agreement was 60% for ½ point or less.

If the two instructors assigned 3 out of 5 scores that were within 1 point or less from one

another's scores, their percentage agreement was 60% for 1 point or less. In order to

clarify the procedure for calculating inter-rater agreement, an example has been provided

in Appendix F. Percentage agreement scores among raters are provided in the Results

section.

Limitations

There were some limitations to this study. The first limitation was the absence of

random assignment to treatment or comparison groups. This study utilized a convenience

sample of established classrooms, and the result will be a quasi-experimental research

design.

Another limitation of this inquiry was the short treatment time for each group.

Each group only wrote two assignments and each group's treatment time was limited to

about three 1-hour class periods. A longer treatment time would be required to measure

the long-term effects of using a rubric for the purposes of formative assessments.

This investigation utilized multiple instructors with varying personalities and

teaching styles as well as differing levels of experience teaching writing. Each lesson was

accompanied with step-by-step instructions to control for teacher variance and teachers,

but the difference among teachers may make it difficult to ascertain the effect of

treatment and the effect of teacher. No specifications were provided to the teachers

regarding a required amount of paragraphs in the writing assignments. The instructors of the control group and self-assessment group required students to write five paragraph essays, while the instructor of the peer-assessment group did not specify a required amount of paragraphs. This difference in teaching could have contributed to the difference in scores between groups.

One limitation to this study is the small sample size. There were 57 students that participated in this study, and a much larger sample is needed to generalize results to the entire population of third graders. Since the groups were not randomly assigned but were students in existing classrooms, there was a possibility that the groups would be unequal. There was a statistically significant difference between the self-assessment group and peer-assessment group on the first assignment. On the second assignment, some of the gains by the peer-assessment group or losses by the self-assessment group could be attributed to each group regressing toward the mean instead of a treatment effect.

RESEARCH FINDINGS

Results

Each paper was assigned an overall numerical score based on the rubric. Scores on all of the writing traits (the rows of the rubric) were added together in order to assign a numerical average to each essay. For instance, a paper that scored a 4 on all 5 criteria earned a total score of 20. On average, the self-assessment group's overall scores were higher than the other groups during both assignments. As stated previously, this group also scored the highest on the 2009 Language Idaho Standard Achievement Test.

A one-way between subjects analysis of variance (ANOVA) was conducted to compare the difference in mean scores between the peer-assessment, self-assessment, and control groups on the first assignment. There was a significant difference on the first assignment at the p<.05 level for the three groups $F(2,54) = 4.65$, $p = .01$. Post hoc comparisons using a Tukey HSD test indicated that the mean score on the first assignment for the peer-assessment group ($M = 13.39$, $SD = 4.5$) was significantly different than the mean score for the self-assessment group ($M = 17.84$, $SD = 4.2$) However, the control group did not differ significantly from the peer-assessment or self-assessment group.

A one-way between subjects ANOVA was performed to compare the difference in mean scores between the peer-assessment, self-assessment, and control groups on the second assignment. There was not a significant difference on the second assignment at the .05 level for the three groups $F(2,54) = .31$, $p = .73$.

A paired samples *t*-test was conducted to compare the mean scores of each group from the first writing assignment to the second writing assignment. There was a significant difference in the scores for the peer-assessment group between the first writing assignment (*M* = 13.39, *SD* = 4.5) and the second writing assignment (*M* = 14.87, SD = 3.67); *t*(18) = 2.72, p = .01. These results may suggest that the treatment of rubric-referenced peer-assessment had a positive effect on students' mean writing scores. However, there was also a significant difference between writing scores for the self-assessment group between the first writing assignment (*M* = 17.84, *SD* = 4.2) and the second writing assignment (*M* = 15.94, *SD* = 5.0); t(19) = -2.75, p = .01. These results may suggest that the treatment of rubric-referenced self-assessment had a negative effect on students' mean writing scores. Table 1 provides more information regarding *t*-test results.

Table 1

Mean Scores and t-Test Results by Group and Assignment

Treatment Condition	Persuasive Assignment		t	df	Sig.
	First	Second			
Control	16.54	15.61	1.2	17	.24
	(5.2)	(4.2)			
Self-Assessment	17.84	15.94	2.75	19	.01*
	(4.2)	(5.03)			
Peer-Assessment	13.39	14.87	2.72	18	.01*
	(4.5)	(3.7)			

Note. Standard deviations appear in parentheses below means. * = $p < .05$, ** = $p = < .01$ (two-tailed significance). The *t* values are reported as absolute values, not necessarily indicating a positive significance.

Students in each treatment group were provided a questionnaire (see Appendix G) in order to gauge the effectiveness of the treatments from the students' perspectives. The data received from the questionnaires was sorted into categories based on the content of their responses. When students were asked to write reflections regarding the benefits of using rubrics to self-assess drafts of writing, most of the students thought it was beneficial. Figure 1 displays the percentage of students in the peer-revision group that

thought using the rubrics was beneficial. Figure 2 provides the percentage of students in the self-assessment group that thought the treatment was helpful. Notice the difference between the two groups.
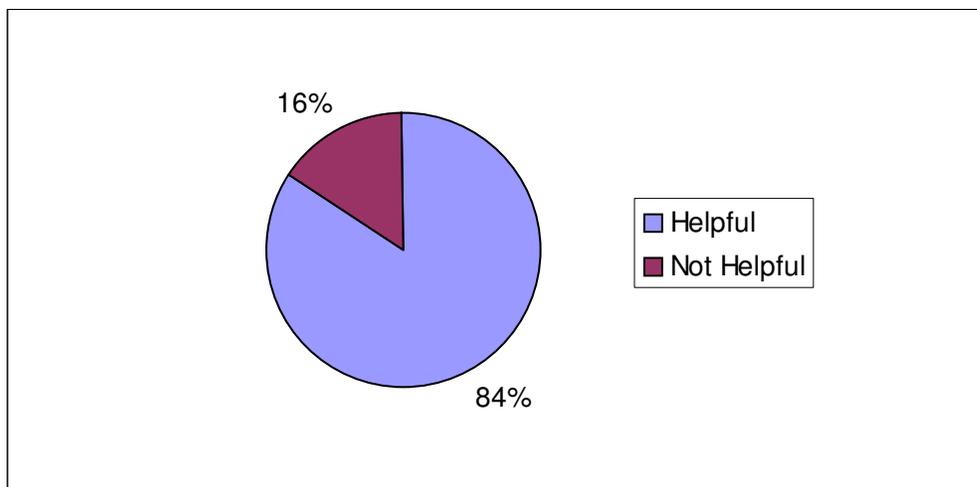

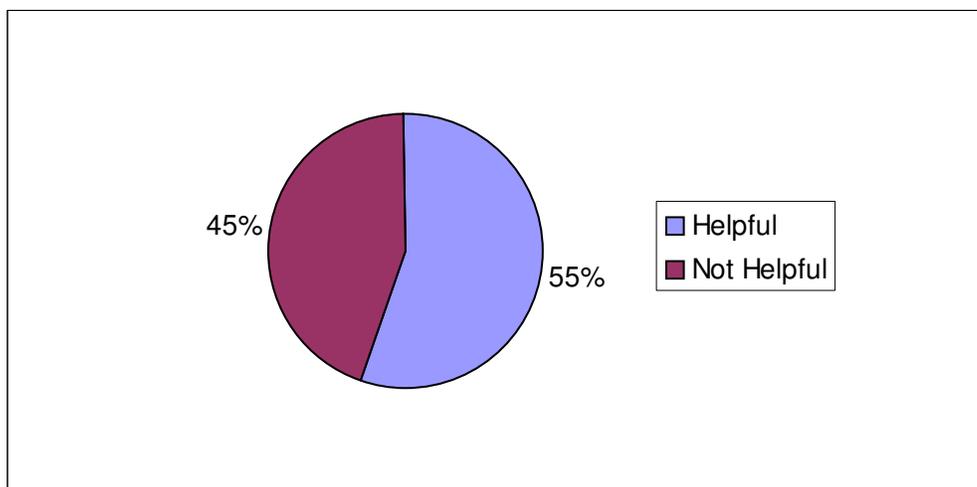Figure 1. Percentage of Peer-Assessment Group That Viewed Treatment as Helpful

Figure 2. Percentage of Self-Assessment Group That Viewed Treatment as Helpful

Most students in the self-assessment group ($n = 11$) thought using the rubrics were helpful because it helped them identify what is expected for a better grade. Another reason that some students provided is the rubrics helped them identify and remedy mistakes. For instance, one student commented that rubrics "helped me notice my mistakes that I made in my rough draft and showed me what was expected for my grade level." Another student wrote that rubric-referenced self-assessment was beneficial because "all you had to do was look at the rubric and see if you did a good job." While most students linked the rubrics to improving their scores on the particular paper at the time, one student connected rubric-referenced revision to future writing. This student explained "I could change the paper so I can learn to be a good writer."

However, some students in the self-assessment group ($n = 9$) didn't think that using the rubrics was beneficial. Three students thought the rubrics were too complicated and difficult to understand. One student replied, "I don't think it was helpful to me to use the rubric because it was really confusing." Another student commented that the rubric wasn't helpful because it was "hard to use and I couldn't really write all the corrections because I'm not very good at that stuff."

An overwhelming majority of the students that received the peer-assessment treatment ($n = 16$) thought that it was helpful to have a partner use the rubrics to help them revise their papers. The main reason they provided is that the rubrics helped their partners know what they needed to modify to in order to improve the paper. One student commented that the partner helped because the student "never figured out the mistakes on my own." However, two students didn't find it beneficial for a partner to assess their papers with rubrics because the partners "didn't give me any good ideas."

Almost every student in the peer-assessment group also thought that it was helpful to assess a partner's paper with a rubric and offer suggestions to that person. The main reason they thought it was helpful was because it would help them get a better grade. One student wrote, "I'll help them get a 5 paper no matter what."

Some students realized that assessing a partner's paper was actually beneficial for the assessor. One student commented that seeing a partner's paper "helped me see what a paper was supposed to be like." Another student remarked, "I'll know what to do in the future." These responses suggest that the students benefited from viewing examples of proficient writing and/or ineffective writing will be able to transfer the learning to new writing situations.

After examining second assignment first drafts and final copies of the self-assessment group and the peer-assessment group, a large discrepancy in the number of revisions between the two groups was discovered. The self-assessment group averaged about 3.7 revisions per student on the final copies of the second assignment. Every revision that the self-assessment group executed was at the word level. This means that students performed simple revisions such as inserting a missing word, replacing one word with another, or correcting spelling, capitalization, or punctuation errors. The peer-assessment group averaged about 9.4 revisions per student on the final copies of the second assignment. Most of their revisions were implemented at the word level, but ten students employed more complex revisions at the sentence level as well. Most of these revisions entailed students inserting a sentence at the introduction or conclusion of the paper or rearranging or inserting a sentence in order to elaborate upon ideas in the middle of their papers.

As mentioned previously, percentage agreement was tracked on the essays that were scored by more than one instructor. Percentage agreement on the dually assessed essays ranged from 0% to 80% ($M = 31.6\%$) for essays with scores in complete agreement, from 0% to 100% ($M = 56.3\%$) on essays that differed by a half point or less, and from 40% to 100% ($M = 87.9\%$) for those that differed by a point or less on individual criteria.

SUMMARY AND DISCUSSION

Summary of Research Questions and Method

The purpose of this study was to ascertain whether or not the treatment of using a rubric for self-assessment and peer-revision purposes was effective in helping students achieve higher scores on a persuasive writing assignment when compared to scores on a previous writing assignment without an intervention. Participants were students in existing 3rd grade classrooms. The research design was quasi-experimental. Students were provided instruction and completed a persuasive writing assignment in order to establish a baseline score. During the second writing assignment, one group received training in how to use a rubric to self-assess a writing draft. Another group was trained to use a rubric to assess a peer's paper. Each of the treatment groups revised writing drafts with the assistance of rubrics. The control group did not use rubrics to aid revision. Another purpose of the experiment was to gauge the usefulness of the treatment from the perspective of the students involved in the study. After the second writing assignment was completed, students in the treatment groups completed questionnaires that provided insight into their perceptions of the treatment of rubric-referenced revision.

Interpretation of Results

This study provides support for the hypothesis that overall student scores in the peer-assessment group would improve on the second assignment. The treatment of rubric-referenced peer-assessment had a statistically significant, positive association with

essay scores. The results of this study indicate that 3rd grade students may improve writing scores when using rubrics to scaffold peer-revision. The overall mean score of the peer-assessment group improved by 1.5 points on the second assignment. A conversion of essay scores into classroom grades (by equating a score of 5 on each criterion with a B grade, a score of 4 on each criterion with a grade of a C and so on) demonstrated that the average grade of the peer-assessment group improved from a low C on the first assignment to a middle C average on the second assignment. The process of converting to a letter grade was subjective and open to interpretation, though.

Students in the peer-assessment group had positive attitudes regarding the use of rubrics for revision purposes. These students relished the idea that they were assessing a peer's paper in order to help the partner achieve a higher score and become a more proficient writer. The sheer amount of revisions that were performed by the peer-assessment group is a testament to the fact that editors were motivated and approached their duties of critical reading conscientiously. The experience of reading peers' papers critically as part of peer-revision could have been beneficial to the editors' writing as well. While revising a partner's paper, students may have been able to identify errors to avoid and emulate examples of proficient writing, as a couple students asserted in answers to the questionnaires. This benefit of peer-revision has been previously been proposed by MacArthur (2007). In support of this study's results, various researchers have reported positive results of peer-revision as well (Jacobs & Zhang, 1989; Wollman-Bonilla & Werchadlo, 1999; Olson, 1990).

This study did not support the hypothesis that students in the self-assessment treatment group would improve at a statistically significant level. In fact, the average score of the self-assessment group decreased on the second assignment. This finding could possibly be attributed to several factors. While filling out the reflective questionnaires, many students in the self-assessment group complained that the rubrics were difficult to understand. The teacher of the self-assessment group reported that some students thought there were too many areas to assess on the rubric, though the lesson plans explicitly required students to assess only one topic at a time. A couple students wrote that they felt rushed while self-assessing their drafts and needed more time. The teacher of the self-assessment group also commented that her students preferred the topic of the first writing assignment (homework) than the second writing assignment (field trip). She remarked that a several students told her that they were dissatisfied with the second writing topic in comparison to the first assignment topic. The teacher of the control group also remarked that, during the second assignment, many students became irritated when asked to write another persuasive essay.

Another possible reason the self-assessment group's scores declined on the second assignment is that they had difficulty critically reading their own writing. As previous research has stated, younger writers exhibit a proclivity to struggle at distancing themselves from a text in order to detect comprehension problems and other errors (Graham, MacArthur, & Schwartz, 1995).

Ostensibly, the peer-revision group's overall attitude towards the writing assignments was more positive. Previous literature (DiPerna, Volpe, & Elliott, 2001; Jensen, 2005) has proposed a relationship between students' emotions, engagement, and

motivation and their academic achievement. This results of this study supports the opinion that engaged students with that are motivated to succeed and can perceive the benefits of their activities are likely to achieve positive academic results. Prior research (Andrade, Du, & Wang, 2008) has found a statistically significant, positive association between rubric-referenced self-assessment and writing scores. However, the results of this study do not support their conclusions.

Recommendations for Further Research

Additional research needs to be conducted to determine the effects of elementary students using rubrics for the purposes of peer-revision and self-assessment. The first recommendation would be to design a study with a greater time between assignments. The lack of time between assignments seemed to frustrate many students, as the assignments could have been spread out over the course of a few months in order to encourage student motivation. It is also recommended that a similar study be conducted at a different time of the school year. This experiment was concluded during the last couple weeks of school, a factor that could have affected student and teacher motivation.

If similar research were to be performed, students should be exposed to the treatment for a longer period of time. An ideal study would take place over the course of a whole school year, in which students had several opportunities to examine model papers, identify effective traits of writing, and interact with rubrics for the purposes of revision in a variety of contexts. A study of this nature would add more confounding variables, though.

Another recommendation for further research is to study the effects of rubric-referenced self-assessment and peer-revision in older students. Studies with middle school, high school, and college students might result in different outcomes, due to their maturity and experiences with writing.

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APPENDIX A

Persuasive Writing Assignment Descriptions

FIRST PERSUASIVE ASSIGNMENT

Some of you can't wait to get your homework packets on Monday and start working on them. For some of you, though, the word "homework" makes you want to throw up! I have been wondering about the benefits of homework for students, teachers, and parents. It is your job to show me why I should keep assigning homework or get rid of it altogether. Please write a paper that argues in support of or against homework. Please state your opinion clearly and include at least three detailed reasons that support your opinion. These are some reasons that have been given to support homework:

- Homework helps students remember what they have learned.
- Homework helps prepare me for high school, college, and life by making me responsible.
- Homework helps my parents know how I'm doing in school.
- Homework helps me become a better reader and writer because I practice at them at home
- I feel proud of myself when I complete my homework. It makes me feel like I've accomplished something and did a good job with it.
- I get rewards from my parents when I complete my homework.

These are some reasons against homework that have been provided by some people:

- Kids work hard enough in school. We don't need extra work to take home.
- Homework is boring. When I do homework, I lose interest in learning.
- Homework doesn't help me learn. It doesn't challenge me to learn anything new and it is too easy.
- If I don't understand a homework assignment, I get frustrated and I can't ask the teacher for help.
- When I do homework, I don't get enough free time to be a kid and play.
- Homework causes arguments between my parents and me.

SECOND PERSUASIVE ASSIGNMENT

Every student loves to take field trips. Your teachers are trying to decide where we should go on a field trip. We have narrowed down the choices to the Discovery Center, the zoo, or the YMCA. Your job is to pick a place and provide reasons why we should take our field trip there. Please write a paper that argues in support of the place you have chosen. Please state your opinion clearly and include at least three detailed reasons that support your opinion. These are some reasons that some people have given to support the Discovery Center:

- The Discovery Center helps kids learn all about different scientific ideas.
- The Discovery Center has a lot of really fun and exciting exhibits.
- The Discovery Center has shows and displays that are there just for classes on field trips.

Here are some reasons that people have given in support of the zoo:

- It helps students learn all about different types of animals.
- We study ecosystems and habitats in third grade and the zoo shows students all about different kinds of them.
- We study about the continents of the world in third grade and the zoo has animals from all over the world.

Here are some reasons that people have given to support the YMCA:

- The YMCA has a lot of fun things to do. We can swim, climb, and play different sports.
- Many students have passes to the YMCA, so it will be cheaper for the school.
- Exercise helps keep students healthy, and the YMCA lets kids exercise.

APPENDIX B

Description of Class Activities During Assignments

FIRST ASSIGNMENT FOR ALL GROUPS

Group	First Class Period (45 min.)	Second Class Period (45 min.)	Third Class Period (45 min.)	Fourth Period (45 min.)	Fifth Period (45 min.)	Sixth Class Period (45 min.)
Control, Self - Assessment, and Peer-Revision	1. Discuss persuasive techniques using picture book and advertisements	1. Review persuasive techniques using picture book and advertisements	1. Analyze website advertisements for persuasive techniques	1. Explain assignment details	1. Small group practice verbalizing arguments	1. Practice paper editing independently
	2. Analyze model persuasive essays as a class	2. Analyze model persuasive essays with a partner	2. Complete small group practice using persuasion techniques	2. Model graphic organizer use	2. Students share writing techniques with the class	2. Self-assessment of drafts
		3. Small group practice using persuasion techniques	3. Display rubric and discuss descriptions of traits and criteria	3. Brain-storm persuasive essays using graphic organizer	3. Write persuasive essays	3. Write final copies
				4. Small group practice verbalizing arguments	4. Teacher modeling of paper editing	

SECOND ASSIGNMENT FOR PEER-REVISION GROUP

Group	First Class Period (45 min.)	Second Class Period (45 min.)	Third Class Period (45 min.)	Fourth Period (45 min.)	Fifth Class Period (45 min.)	Sixth Class Period (45 min.)
Peer-Revision	1. Look at model papers and list criteria of exceptional papers	1. Review assignment details	1. Finish first drafts	1. Guided and partner assessment of paper using rubric	1. Teacher modeling of peer-revision conference	1. Complete peer-revision of first drafts
	2. Discuss assignment details	2. Brainstorm persuasive essays using graphic organizer	2. Teacher modeling of assessment with rubric and peer feedback	2. Practice paper assessment using rubric independently	2. Peer-revision role-play	2. Write final copies of persuasive essays
	3. View rubric from first persuasive essay and discuss criteria	3. Partner practice verbalizing arguments			3. Whole-class discussion of assessment role-play	
	4. Read and discuss picture book that uses persuasive techniques	4. Write first drafts of persuasive essays			4. Begin peer-revision of first drafts using rubrics	

SECOND ASSIGNMENT FOR SELF-ASSESSMENT GROUP

Group	First Class Period (45 min.)	Second Period (45 min.)	Third Class Period (45 min.)	Fourth Period (45 min.)	Fifth Class Period (45 min.)	Sixth Class Period (45 min.)
Self - Assessment	1. Look at model papers and list criteria of exceptional papers	1. Brain-storm persuasive essays using graphic organizer	1. Finish first drafts 2. Teacher modeling of assessment with rubric	1. Guided and partner assessment of paper using rubric	1. Complete independent practice of assessment with rubric	1. Complete self-assessment of first drafts using rubrics
	2. Discuss assignment details	2. Partner practice verbalizing arguments		2. Practice assessment with a rubric indepen-dently	2. Self-assessment of first drafts using rubrics	2. Write final copies of persuasive essays
	3. View rubric from the first persuasive essay and discuss criteria	3. Write first drafts of persuasive essays		3. Whole-class discussion of assessment practice	3. Whole-class discussion of assessment practice	
	4. Read and discuss picture book that uses persuasive techniques					

SECOND ASSIGNMENT FOR CONTROL GROUP

Group	First Class Period (45 min.)	Second Period (45 min.)	Third Class Period (45 min.)	Fourth Class Period (45 min.)	Fifth Class Period (45 min.)	Sixth Class Period (45 min.)
Control	1. Discuss persuasive techniques using picture book and advertisements	1. Activity focusing on organizing ideas	1. Practice inserting transition words into persuasive essays	1. Walk-around review of student-created introductions and conclusions	1. Write first drafts of persuasive essays	1. Practice editing paragraphs indepen-dently
	2. Analyze model persuasive essays as a class	2. Organize model persuasive essays with a partner	2. Display and discuss effective introductions and conclusions	2. Display and discuss rubric and explain assignment details	2. Teacher modeling of paper editing	2. Class discussion of editing results
			3. Practice creating introductions and conclusions based on prompts	3. Brainstorm persuasive essays using graphic organizer		3. Self-assessment of drafts
				4. Small group practice verbalizing arguments		4. Write final copies

APPENDIX C

Instructions for Coder

INSTRUCTIONS FOR CODER

Thank you for your help with this project!

1. Randomly sort the stack of final essays.
2. Cover all student names with a permanent marker in order to make each paper anonymous.
3. Assign each paper a number. Write the number at the top of each student's final draft.
4. Fill out the spreadsheet that has been provided to keep track of student papers. Make sure to write information under the appropriate heading (paper #, name of student, or assignment topic)
5. Keep the spreadsheet in a safe place. It will be used after the papers have been scored.
6. Make two copies of each student's final draft. Keep each student's two papers together. Keep each student's original assignment in a stack that is separate from the copies. The scorers will only need to grade the copies.
7. Please return the stacks to Mr. Horn.

APPENDIX D

Assessment Rubric Used in the Study

ASSESSMENT RUBRIC

	Needs a Lot of Help 1	Needs Some Help 2	Average 3	Good 4	Excellent 5
Ideas	The opinion and support isn't clearly given.	The writing gives an opinion, but very weak or no support.	The writing gives a clear opinion and one clear, detailed reason. One or two reasons might not clearly support the opinion.	The paper gives a clear opinion and two clear, detailed reasons to support the opinion. One reason might not clearly support the opinion.	The writing gives a clear opinion with three clear, detailed reasons to support the opinion.
Organization	The paper has no beginning or ending. The ideas aren't connected at all.	The paper has a weak beginning and/or ending. The ideas are somewhat connected, but may be ordered awkwardly.	The paper has a beginning, middle, and ending that aren't very interesting. Some ideas flow together with transition words.	The paper may have an inviting beginning, a middle, and a clear ending. Ideas mostly flow together with smooth transition words.	The paper has an inviting beginning, a middle, and a clear ending that summarizes the opinion creatively. Every idea flows together with smooth transition words.
Word Choice	The words used are simple and ordinary. Many words are repeated. Many words are not used correctly.	Most words used are ordinary and simple. Some words may be repeated. Some words are not used correctly.	The writing has a couple descriptive words, but many are ordinary. A couple words may be repeated or used incorrectly.	The writing has some descriptive words that create a clear picture. All words are used correctly.	The writing uses many powerful descriptive words that create a clear picture (words like "fascinating" or "entertaining" instead of "fun")
Conventions	The writing is very difficult to read due to so many spelling errors. It has many, many capitalization and punctuation errors. Most sentences are incomplete.	The writing is somewhat difficult to read because of spelling errors. It has many capitalization, punctuation, and grammatical errors. Several sentences are incomplete.	There are several spelling errors. The writing has some capitalization, punctuation, and grammatical errors. Most sentences are complete. Paragraphs may be used, but not correctly indented.	There are only a few spelling errors. The writing has a few capitalization, punctuation, and grammatical errors. Almost all sentences are complete. Paragraphs are mostly indented.	Spelling, capitalization, punctuation, and grammar are almost always correct. All sentences are complete. All paragraphs are indented correctly.
Expression in Writing	The writing has no feeling or personality. The writing doesn't make the audience feel anything.	The writing has very little feeling or personality. It seems like the writer doesn't care much about the topic, though.	The writing shows a little bit about what the writer felt and thought. It creates a small amount of feeling (joy, sadness, anger) in the reader.	The writing has feeling and personality. It may create some feelings (joy, sadness, anger) in the reader.	The writing has a lot of feeling and personality. It creates many feelings (joy, sadness, or anger) in the reader.

APPENDIX E

Scoring Procedures

SCORING PROCEDURES

1. Read through the assignment details for the essays that you will be scoring.
2. Read through the example essays and the rubrics that accompany the essays. Pay close attention to the scores that the essays received in each category.
3. Read a student paper.
4. Only score one criterion at a time. It may be helpful to read through the essay each time that you focus on a different criterion. As you are focusing on a criterion, please read through all the descriptions and choose a level of proficiency that fits the essay. If you find it necessary to score a paper in the middle of two levels, that is fine (for example, a score of 3.5 in organization).
5. When you score word choice, circle every creative descriptive word that is correctly used and count the total. Put a line through words that are used incorrectly and count the total. Count up words that are repeated, such as "good" or "nice."
6. When you score conventions, count run-on sentences and fragments. Please count grammatical errors as well. When you assess spelling, capitalization, and punctuation, highlight each error in different colors and count the total. For example, spelling errors could be marked in green and capitalization errors could be highlighted in yellow.
7. As you finish the rubric for each essay, read through the essay one last time and check over the rubric to ensure that you feel comfortable with the scores that you assigned.
8. Record the scores in the scorer spreadsheet.

APPENDIX F

Calculation of Inter-Rater Agreement

CALCULATION OF INTER-RATER AGREEMENT

	Scores Assigned by 1st Scorer	Scores Assigned by 2nd Scorer	Scores in Complete Agreement	Scores with ½ Point Agreement or Less	Scores with 1 Point Agreement or Less
Ideas	3.5	4	0	1	1
Organization	4	3.5	0	1	1
Word Choice	4	4	1	1	1
Conventions	3.5	3.5	0	0	1
Expression in Writing	3	3.5	0	1	1

Percentage of Scores with Complete Agreement: 20% (1 out of 5)
Percentage of Scores with ½ Point Agreement or Less: 80% (4 out of 5)
Percentage of Scores with 1 Point Agreement or Less: 100% (5 out of 5)

APPENDIX G

Treatment Group Questionnaires

TREATMENT GROUP QUESTIONNAIRES

Journal Prompt for Self-Assessment Group:
1. Was it helpful for you to use the rubric to grade the first draft of your persuasive essay? If it wasn't helpful for you, please explain why. If it was helpful for you, please explain why.
2. Do you think that our class should use rubrics to grade our first drafts in future writing assignments? Why or why not?

Journal Prompt for Self-Assessment Group:
1. Was it helpful for you to have a partner use the rubric to grade the first draft of your persuasive essay and then offer suggestions to you? If it wasn't helpful for you, please explain why. If it was helpful for you, please explain why.
2. Was it helpful for you to grade a partner's paper and offer suggestions to that person? Is it wasn't helpful for you, please explain why. If it was helpful for you, please explain why.
3. Do you think that our class should use rubrics to grade our peers' first drafts in future writing assignments? Why or why not?