

2003

The Effect of Staff Development in the Use of Scoring Rubrics and Reflective Questioning Strategies on Fourth-Grade Students' Narrative Writing Performance

Christopher H. Tienken
Seton Hall University

Follow this and additional works at: <https://scholarship.shu.edu/dissertations>

 Part of the [Elementary Education and Teaching Commons](#)

Recommended Citation

Tienken, Christopher H., "The Effect of Staff Development in the Use of Scoring Rubrics and Reflective Questioning Strategies on Fourth-Grade Students' Narrative Writing Performance" (2003). *Seton Hall University Dissertations and Theses (ETDs)*. 1540.
<https://scholarship.shu.edu/dissertations/1540>

THE EFFECT OF STAFF DEVELOPMENT IN THE USE OF SCORING
RUBRICS AND REFLECTIVE QUESTIONING STRATEGIES ON FOURTH-GRADE
STUDENTS' NARRATIVE WRITING PERFORMANCE

BY

CHRISTOPHER H. TIENKEN

Dissertation Committee

Charles M. Achilles, Ed.D. Mentor

Anthony J. Collela, Ph.D.

Michael J. Wilson, Ph.D.

Ralph P. Ferrie, Ed.D.

Maryrose Caulfield-Sloan, Ed.D.

Submitted in partial fulfillment of the
requirements of the degree of Doctor of Education
Seton Hall University

2003

© Christopher Tienken, 2003
All Rights Reserved

Acknowledgements

To Dr. Charles Achilles, words cannot express how grateful I am to be able to call you my mentor. Your nurturing guidance and patience provided me the encouragement and skills needed to complete this study. I hope our paths cross frequently as I continue to learn. Nunc Est Bibendum.

To Dr. Anthony Colella, I appreciated your expedient turnaround of this document and the positive comments. Your professionalism and easygoing manner was assuring.

To Dr. Ralph Ferrie, thank you for sending me down this path. I would not be at this point professionally or academically if it were not for your prodding and support. You are truly a child-centered educator. Stay the course.

To Dr. Michael Wilson, thank you for being there when I needed to share or clarify an idea. I appreciate all the instances when you took time out of a busy day to answer my questions. You validated many of my thoughts and challenged others.

To Dr. Maryrose Caulfield Sloan, I appreciate the way you unselfishly shared your knowledge and expertise with me during this process. It was possible to finish on time- you were right. Now start thinking about our next Chapter 1.

To all the fourth-grade teachers in the Absecon School District, I wish to extend my appreciation and professional respect. Your job is a challenging one and you pursue it with vigor and a high level of professionalism.

Dedication

This work is dedicated to my wife, Allison, my parents and sister, Valerie, Henry, and Holly, and to my grandfather Frank Lisi.

Allison's unselfish love and encouragement were the factors that contributed to my successful and timely completion of this degree. She maintained a positive attitude when I lost mine and was my backbone throughout this process. When I doubted, Allison affirmed. This degree should have her name on it. *Mia bella moglie, io ti amo eternamente.*

My sister Holly has been an example of the work ethic needed to complete a dissertation. If I can do it you definitely can. Get to work.

The influence of one's upbringing cannot be underestimated. My parents, Valerie and Henry provided me the childhood necessary to become a successful adult. As a self-made man, my father taught me that only one's best will do. It took 31 years, but now I know that mothers are always right.

Although my grandfather, Francesco Lisi, passed away almost ten years ago part of him remains with me. He unknowingly kindled an internal fire that helps fuel my motivation and drive to succeed. *Riposi in pace.*

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iii
DEDICATION	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
I INTRODUCTION	1
Context of the Problem	1
Narrative Writing	1
Writing Proficiency and Staff Development	5
Change and Staff Development	8
The Background of the Problem	9
The Purpose of the Study	11
Hypothesis	11
Variables	11
Limitations of the Study	12
Strengths of the Study	13
Definition of Terms	14
Summary	16
II REVIEW OF RELATED LITERATURE	17
The Historical Background of Staff Development	18
Change and Innovation	25
Summary of Change Models	26
Problems and the Change Process	32
Staff Development in Writing	34
Job-embedded Staff Development	39
III RESEARCH DESIGN, PROCEDURES and DATA ANALYSIS	42
Background	42
Research Design	43
Subjects	44
Procedures	44
Training Model	44
Treatment	47
Staff Development Session Overview	48
Instructional Modes	49
Qualitative Data Collection	51
Teacher Characteristics and Comparisons	51
Classroom Observations	51
Reflective Logs	52
Quantitative Data Collection	53

Student Characteristics and Comparisons	53
Student Assessment	53
Scoring of Student Responses	54
Inter-rater Agreement	55
Data Analysis	55
IV RESULTS	57
Qualitative Results	57
Pre-study Characteristics	57
Training Routines During the Study	60
Instructional Routine	61
Classroom Observations	62
Reflective Logs	64
Posttest Test Assessment Description	66
Quantitative Results.	67
Content and Organization	69
Student Self-assessment	74
Summary	75
V INTRODUCATION, SUMMARY of FINDINGS, CONCLUSIONS and RECOMMENDATIONS.	76
Introduction	76
Summary of Findings.	77
Summary of Qualitative Data Analysis.	77
Summary of Quantitative Data Analysis	79
Score Frequencies	79
Conclusions	80
Staff Development and Student Achievement	80
Changes in Teachers' Instructional Mode	80
Student Understanding of Writing Criteria	81
Class Size for Staff Development	82
Recommendations for Policy and Practice	84
Staff Development Planning and Implementation	84
Knowledge of Change	85
Job-embedded Staff Development	87
Teacher Evaluation and Observation	87
Continuing Education Requirements	88
Limitations and Further Study	88
Conclusion	89
REFERENCES	90
APPENDEXES	98

Appendix A. Staff Development Assumptions	98
Appendix B. Teacher Questionnaire	100
Appendix C. New Jersey Registered Holistic Scoring Rubric. .	102
Appendix D. Reflective Questions	104
Appendix E. Student-Centered Scoring Rubric	107
Appendix F. Summary of Staff Development Topics	110
Appendix G. Secondary Statistical Analyses	116
Appendix H. Letters and Consent Forms	121

LIST OF TABLES

Table 1	Teacher Characteristics	59
Table 2	Student Characteristics of O and X groups	67
Table 3	Frequency of Non-Compacted Content / Organization Rubric Scores for X and O Groups	71
Table 4	Quantitative Data Describing Content / Organization Scores for X and O Groups	72
Table 5	Frequency of Compacted Content / Organization Rubric Scores for X and O Groups	73
Table 6	Chi-square Analysis of Rubric Scores from the X and O Groups	74
Table G1	Quantitative Data Results for Content / Organization Scores of Students in the X and O groups	113
Table G2	Results for X and O Groups Excluding Gifted and Talented Students	114

LIST OF FIGURES

Figure 1	Summary of Change Models Reviewed for this study	31
Figure 2	Summary of the Change/Communication model used in this study	46
Figure 3	Configuration for instruction used by X-group teachers	64
Figure 4	Four-stage communication/change model	83

CHAPTER I

Introduction

Context of the Problem

The adoption of the New Jersey Core Curriculum Content Standards in 1996 and the implementation of the New Jersey Elementary School Proficiency Assessment (ESPA) in the content areas of mathematics, language arts, and science created a heightened sense of accountability and awareness on the part of New Jersey's education professionals. The results of the yearly New Jersey State tests in fourth and eighth grades are published in newspapers and distributed to parents. This is true for the yearly assessment results relative to the language arts portion of the ESPA. The language arts test monitors the reading and writing performance of fourth-grade students.

The reauthorization of the Elementary and Secondary Education Act in 2002, known as No Child Left Behind (NCLB), raised the accountability of school districts to the federal level. States must test all students in grades three through eight in reading and mathematics by the 2005-2006 school year. The federal government will withhold funding from those districts that consistently do not meet the achievement standards set by the Department of Education.

Narrative Writing

Historically, the discipline of writing was grounded in Aristotelian rhetoric. Viewed in this context, writing was a technical art and a civic practice (Fleming, 1998). It was intended that only very well educated people, generally men, study it. Langer and Allington, (1992, p. 688) found that Aristotelian rhetoric occupied much of the writing course work in American colleges during the 18th century and was representative of the

curriculum already taught in English universities. By the end of the 19th century Dewey (1915) and progressivist philosophers challenged many of the traditional notions of writing. Dewey proposed a more practical and functional opinion of writing that viewed learning as a process to be developed and experienced rather than a body of facts to be absorbed. However, writing remained aligned with the traditional view as it related to Aristotelian rhetoric throughout the 19th and up to the mid 20th century with the addition of some expressionist views and new rhetoric.

Beginning in the late 1960's and continuing through the 1970's and 1980's the emphasis shifted to the processes involved in writing. The early studies of the writing process focused on such student- related aspects as prewriting behavior, activity during pauses in writing, rate of writing, and what writers do when they stop. In 1966 the Carnegie Corporation invited 50 educators from the United States and Great Britain to review the literature related to English instruction. The reviewers were educators from elementary, secondary, and collegiate levels. The review resulted in the creation of the Dartmouth Seminar. Like the progressivist educators before them, the members of the Dartmouth Seminar were interested in the processes of engaged learners. Strickland, Jones, Bodino, and Buchan (2001) stated that the past three decades of research relative to writing as a process have provided insights to what people do when they write. They said:

Writing is viewed as a meaning making process in which writers negotiate meaning with the texts they produce. Writers gather and organize their ideas, draft their compositions, revise and edit their drafts, and publish what they have written. The process is recursive rather than linear, with writers moving back and

forth among stages as the need arises. Throughout, they draw on life experiences, including their experiences with literature and their knowledge of written language conventions. (p. 387)

Graves (1981) conducted a two-year case study and found that the writing process is a series of actions leading to solving a problem. Graves determined that the process consisted of sub-processes including topic selection, rehearsing, information gathering and access, spelling, handwriting, reading, organizing, and revising.

Teachers have taught students to use criteria for judging their own writing and the writing of others since ancient times (Hillocks, 1986). Hillocks (1986), Sager (1973), Coleman (1982), Schmoker (2000), and others examined the effects of teaching students to use criteria as a self-assessment tool. Those researchers generally looked at the use of criteria in four ways: (a) The study of anchor papers or model writing samples that exemplify specific properties of effective writing, (b) the use of scales or rubrics applied to writing samples and students' own writing, (c) teacher comments on student papers relative to what is perceived by the teacher as good writing and what to avoid in future writing, and (d) student revisions based on teacher comments. The first two uses of criteria focus on student prewriting activities. Teachers instruct students to recognize examples of effective writing and rubric traits prior to writing. Then the students compose their own pieces and the teacher grades them.

Sager (1973) studied sixth-grade students in urban schools. She developed scales related to writing quality. The scales focused on elaboration, vocabulary, organization, and structure. The teacher taught the students to use the scales to evaluate writing samples. Sager found that the students became skilled at judging compositions according

to four scale components and achieved estimated rater agreements of between .96 and .98. The overall gains in the quality of writing made by the students in Sager's experimental group were considered significantly greater than those of the control students. The presence of criteria in the early stages of the writing process is significant (Hillocks, 1986). Hillocks stated, "We need studies of criteria available to writers at different ages and backgrounds for various modes of discourse as well as studies of how those criteria function. Such studies should have significant value (p. 24)." Writing educators consider the teacher comments on student papers and student corrections based on teacher comments post-writing activities because they occur after the student finishes composing. Those who use these two methods assume that the student will learn the criteria as a result of teacher feedback. This researcher did not locate studies that examined the effects of using scales or criteria, in the form of rubrics, throughout the writing process.

Constructivism should be considered in the discussion of writing because the philosophy pertains to students making meaning. Student writers vacillate between production and reflection as they organize, compose, reflect, discover, interpret, revise and edit. Students create narrative pieces based on their personal knowledge of the topic and then expand on that knowledge. They develop and create meaning from their interpretations of the topic. Constructivism is based on two main principles. The first is that the learner actively receives, interprets, and builds knowledge (von Glaserfeld, 1995). Second, the function of thinking and cognition is adaptive and helps the student to organize the experiential world (von Glaserfeld, 1995). The student writer must form a

relationship between existing knowledge and new concepts or ideas for narrative development and elaboration to occur.

Teachers who use constructivist methods encourage students to ask questions and pose problems as part of the overall learning process (Peixoto, 1993). Writing teachers use this strategy during think-aloud brainstorming sessions. Teachers can also encourage and instruct students to use discussion and questioning as part of peer conferencing to enhance reflection. Driver (1988) stated that constructivist strategies allow learning to exist as an active process with the student as the chief meaning maker.

Metacognition is an important part of effective writing. Bruer (1995) defined metacognition as the learner's ability to think actively about thinking and control one's own mental processing. This ability is extremely important in the writing process because students must be able to move back and forth between productive and reflective actions. They must self-monitor and evaluate ideas and their proficiency and written product.

Writing Proficiency and Staff Development

Recently, proficiency in writing has been linked to scoring rubrics (Strickland, et al. 2001). Rubrics are guides assessors use to score writing performance assessments. Assessors from the National Assessment of Education Progress (NAEP) and New Jersey's ESPA use scoring rubrics as guides to determine student writing proficiency on the tasks from those assessments. Strickland et al. opined that the use of rubrics can have positive effects on students and teachers. They stated:

Well conceived rubrics can be put to good use as tools for student self-monitoring and assessment. Prudent use of rubrics can help teachers who

have had little background in writing by giving them a better sense of qualitative differences in students' writing. Some teachers report that reforms have caused them to expand their writing programs to include more writing forms. (p. 393)

Strickland et al. stated that ongoing long-term professional development is the key to better writing instruction. She did not provide empirical data to support her opinion that long-term professional development impacts student achievement.

Although there has been an increased focus on student writing achievement because of the standards and accountability movements in the 1990's and 2000's, NAEP data indicate that students' writing instruction and their performance on the NAEP writing assessment have remained unchanged in spite of almost three decades of reforms. Applebee, Langer, Mullis, and Jenkins (1990) wrote, "Nearly a decade into the educational reform movement and the writing process movement ... both students' writing instruction and their writing performance have remained relatively unchanged." (p. 74)

The report *Improving Educational Achievement* (National Academy of Education, Committee on Testing and Basic Skills, 1978) was the foundation for the NCLB legislation. The authors of the report called for changes in schooling. They recommended a return to "Basic Skills", increasing achievement-test scores as a goal of government, and increased accountability on schools and administrators. Six years later, the report *A Nation at Risk* (National Commission on Excellence in Education [NCEE], 1983) brought more scrutiny to America's education system and led to a series of programs touted as efforts to improve student achievement in the core subjects of

mathematics, reading, writing, and science. That report was followed by a series of National Assessment of Educational Progress (NAEP) reports, most recently the 1998 assessment of fourth-grade narrative writing. The NAEP scoring categories for fourth-grade narrative writing included six sections: unsatisfactory, insufficient, uneven, sufficient, skillful, and excellent. The authors of the report stated 45% of all fourth-grade students taking the exam were rated in the bottom three categories of uneven, insufficient, or unsatisfactory.

The late 1980's and 1990's signaled a shift toward increased numbers of standards for the language arts and frequent calls for higher expectations for all students and ultimately for their teachers. Following the publication of *A Nation at Risk*, the United States government initiated a series of efforts to address the issues arising from the 1983 NCEE report. President Reagan launched an unsuccessful attempt to pass voucher legislation on the heels of the 1983 report. Several years later, politicians and business leaders held a state governors summit in 1989 that led to President Bush's "Goals 2000" initiative. Congress created the National Council on Education Standards and Testing (NCEST) that recommended the creation of national content standards and assessments similar to the ones called for in 1978 by the NAE's Committee on Testing and Basic Skills. New Jersey adopted the Core Curriculum Content Standards in 1996 in an attempt to set standards for what students should know and be able to do in the content areas including language arts and specifically writing. The creators of the New Jersey writing standards document derived many of the standards from national association documents and professional organizations.

The results of the 1999-2000 New Jersey Elementary School Assessment for fourth-grade language arts found that 38.9% of the 86,861 students taking the test scored in the “partially proficient” category. “Partially proficient” is the lowest of the three possible categories on the assessment. Only 3.9% of the students scored at the “advanced proficient” level, the highest level that a student can attain. Narrative writing is one component on the assessment. The participating school district scored similarly to the New Jersey and NAEP averages of the fourth-grade students during the 1999-2000 school year.

Strickland, et al, (2001) stated that a need exists for focused and sustained staff development in the area of writing instruction. Based on the studies examined for the literature review in Chapter 2 of this study, an argument can be made that the staff development necessary to improve student performance on writing tasks is more than one-day, in-service workshops. The studies mentioned in this section and in Chapter 2 suggest that teachers should become proficient at modeling and teaching metacognitive strategies to students as one way to actively engage learners in their writing and be reflective practitioners of the craft. One type of staff development needed to accomplish the task would be described as job-embedded (Wood & McQuarrie, Jr., 1999) and would focus on the use of criteria or rubrics to enhance student self monitoring and thinking about writing and the writing process.

Change and Staff Development

Exploring the link between teacher staff development and pupil achievement relative to narrative writing is essential to understanding how school district educators can enhance student achievement and support teacher growth. Because teaching is

primarily verbal and nonverbal communication, change models and communication theory play a role in examining the impact of staff development on improved student achievement. Learning implies changes in behaviors, skills, and attitudes. One goal of staff development is a change in teacher behavior leading to positive gains in student achievement. Models exist that illustrate processes administrators and teachers can use to facilitate change and learning.

Background of the Problem

The leaders of the researcher's school district never examined the link between staff development and student achievement through an empirical study. The general practice of the leadership is to develop a year-long staff development plan, as mandated by the New Jersey Department of Education, and provide individual and group learning opportunities for teachers. Empirical studies and analysis of the implementation and effectiveness of the training were never conducted. The district's staff development plan does not include the use of specific change models and the state does not require districts to evaluate the impact of staff development on student achievement. The district leadership uses perception-based evaluation forms, as recommended by the state, that ask teachers to rate their satisfaction with the staff development. This positive start relies on teachers' perceptions and self-reported practices, not observations or outcomes.

The continued implementation of the ESPA combined with the NCLB legislation and statewide testing programs created a need to investigate the relationship between staff development and student achievement. The increased emphasis by the New Jersey Department of Education and federal government on closing the achievement gap between high and low achievers in language arts was one motivating factor for the

researcher's district to allocate additional funds for staff development and materials in the area of writing instruction and language arts. The district actively investigated instructional methods and resources that addressed the needs of low to average achieving regular and special education students.

One method identified by the researcher to improve the students' narrative writing was the use of criteria and reflective questions during the writing process. Students need to learn strategies to self-assess their writing. Classroom observations and interviews with teachers at the fourth-grade level indicated that a lack of self-assessment teaching strategies may exist. District-wide observations found that writing instruction by the K-8 teachers in the researcher's district was disjointed and highly prescriptive. The researcher concluded, based on interviews with the participants in this study, that the dominant mode of writing instruction in the researcher's district was congruent with the presentational mode (Hillocks, 1981).

The presentational mode is characterized by teacher-led discussion relative to the characteristics of what the teacher believes is good writing (Hillocks, 1986). Teachers provide feedback in written form on the students' papers and assign activities that require the students to imitate a pattern or follow a set of rules or a process previously presented by the teacher. Students are not taught specific strategies to help them reflect upon their writing nor are they taught to use rubrics to self-monitor their writing. It should be noted that the participants in this study never took specific college or staff development courses about self-assessment strategies nor did they mention that the topic was covered in their undergraduate teacher training.

Purpose of the Study

The purpose of this study was to determine if there was a measurable difference on a narrative writing assessment of students taught by teachers who received staff development as compared to students whose teachers did not have this training and thus their students did not receive this level of instruction. The staff development focused on training teachers how to provide instruction to students in the use of the criteria contained within the New Jersey Registered Holistic Scoring Rubric and a set of higher-order reflective questions (Bloom, 1958) as self-assessment and reflection devices when composing, revising, and editing narrative essays.

Hypothesis

The null hypothesis is that there will be no difference between, (a) the performance on the content and organization portion of a rubric-assessed narrative essay of students who had been instructed by teachers who received training on how to use scoring rubrics and higher-order reflective questions as a self-monitoring and reflective device, and (b) the performance on the content and organization portion of a rubric-assessed narrative essay of students who had been instructed by teachers who had not received training.

Variables

The independent variable in this study is the training of teachers to instruct students to use a scoring rubric and set of reflective questions as self-monitoring and reflective devices. The dependent variable is the assessed performance of fourth-grade students on a rubric-scored narrative essay assessment.

Limitations

Limitations of the study included:

1. The study was conducted at the fourth-grade level and the effects of the treatment on other grade levels were not studied.
2. The study was conducted over a 14-week time period. This time period is considered short by some writing researchers (Hillocks, 1981) and may not allow for full teacher and student understanding or implementation of the strategies.
3. The researcher provided the staff development. The quality of the training is dependent on the skills and experience of the trainer. The possibility for bias exists.
4. The study only included five teacher participants. This group of teachers may not represent the larger teacher population. The possibility exists that this group of participating teachers may be more or less motivated, bright, able, or talented than the general teaching population.
5. The researcher analyzed assessment results from 36 experimental (X) and 62 control (O) group students. The possibility exists that the groups do not represent the larger student population.
6. The use of the change models presented is limited to change processes based on communication and should not be generalized to other forms of change processes.
7. The researcher collected data on individual students and the analysis considered 36 experimental students and 62 control students. The work was done by five teachers and a student's performance was certainly not independent of the experimental teachers' ability to instruct the self-assessment strategies and probably not independent of the others in the class.

8. The students were not randomly assigned to the classes. They were assigned based on the recommendations of last year's teachers. The teachers ranked the students by ability in language arts and mathematics in an attempt to create classes that were balanced. The teachers attempted to create heterogeneous classes by placing equal numbers of high, medium, and low-achieving students in each class. However, the classes in this study were intact groups and not random assignments.

Strengths

Strengths of the study included:

1. The researcher used a posttest only design with random assignment of teachers to the experimental and control groups. Random assignment was congruent with the design. The teachers were not chosen from volunteers. Random selection limits the phenomenon of experimenter expectancy. Random assignment strengthens the internal validity of the study.
2. The researcher compared the characteristics of the teacher participants and found them to be similar.
3. Prior to the actual study, the researcher compared the characteristics of the intact groups of students and found each group to be similar.
4. The district in which the study took place was classified as a "DE" district factor group. This classification was determined by the New Jersey Department of Education and ranges from A to I. Districts rated as an "A" have the lowest socioeconomic status and I districts represent those with the highest socioeconomic status. The district in which this study took place represents a mid-range socio-economic status district. (This aspect adds to the external validity of the study.)

5. The students' writing samples were scored externally by the Education Consulting Service in Marlton, NJ. The company employs professional scorers and scores tests and writing samples for school districts in several states including New Jersey. The student papers were scored for content/organization and also given an overall holistic score. The second score is congruent to the score assigned by State of the New Jersey assessors on the State's ESPA given at the fourth-grade level every year in May. The two-tiered scoring allowed the researcher to look at specific aspects of student writing, in this case content and organization. Independent scoring separated the researcher from the data and increased the objectivity of the scores.
6. The study took place in an ongoing educational setting and therefore represents actual classroom events and training environments.
7. The researcher discussed the purpose of the study with all fourth-grade teachers and all were aware that the study was taking place. This helped to limit the possible influences of the Hawthorne effect. The possibility also existed that the control group of teachers could "teach harder" in an attempt to show that they could outdo the experimental group. This is known as the John Henry effect and could balance any possible influences of the Hawthorne effect.
8. The researcher conducted post-workshop classroom observations of the experimental group teachers to ensure they were using the training.

Definition of Terms

The definitions are provided to clarify their meaning as used in this study. Operationally, the researcher believes that professional and staff development should

have two levels of impact: 1) To improve the participants' observed teaching performance and 2) improve measurable student achievement.

In-service Training

“In-service training” refers to one-time, large group ($n > 15$) training sessions that may or may not focus on classroom instruction but lack follow-up.

Job-embedded Staff Development

The term “Job-embedded staff development” describes continuing staff development that takes place in the context of the classroom and focuses on teacher behaviors related to instruction and student learning. The instructional groups are small ($n < 15$) and activities include action research, peer coaching, structured study groups, mentoring, and calibration exercises.

Professional Development

“Professional Development” refers to ongoing education through which certified teachers and other education professionals are instructed in processes that relate to the classroom instruction of students and focus on the improved performance of the participants. It is planned and long-term in nature.

Staff Development

“Staff development” is defined identically with professional development (see above) except that the audience or target group could include paraprofessionals and non-professional education personnel who work with students. (In this study, staff development may be used interchangeably with professional development.)

Summary

Chapter I included the context and background of the problem examined in this study. The researcher stated a hypothesis and presented strengths and limitations of the study. Definitions of terms were included for clarity. Chapter II includes a review of pertinent studies related to staff development and student achievement. The researcher presents literature associated with general staff development and writing staff development. A summary of the literature on change models and communication theory is presented as it relates to staff development planning and implementation.

CHAPTER II

Review of Related Literature

This chapter provides a review of the literature related to staff development and the effects on student achievement. The researcher reviewed literature on staff development and the ways educators and researchers used it to improve writing instruction and student achievement. The literature review will act as a foundation to support this research study. Staff development theory, practice, and policy are presented as they relate to the context of this study, and as they support the idea of improved staff and student outcomes. Speck (1996) remarked that, “Increasing student learning should be the goal of professional development” (p. 35). Guskey (1997) wrote, “As understanding grows, researchers will be better able to offer clear direction to practitioners on how to enhance the effectiveness of professional development to improve student learning” (p. 1).

Literature related to practical models for conducting and structuring staff development for teachers to promote changes in teaching behavior and enhance effectiveness was found. Empirical studies on staff development related to using a rubric and reflective questions as self-assessment devices and the effects on student achievement were not found. Therefore, this review focused on research studies related to elementary school writing instruction conducted by researchers and upon writing staff development. Historical and theoretical backgrounds of staff development and writing instruction are provided.

The Historical Background of Staff Development

Russia's launch of Sputnik in 1957 signaled an increase in the amount of funds devoted to teacher staff development. Although much of the funding focused on mathematics and science, foreign language and overall staff development received greater attention. The release of *Improving Educational Achievement* (National Academy of Education, 1978) maintained the focus on accountability and student achievement brought on by the launch of Sputnik. The report cited a 14-year drop in SAT scores beginning in 1963. The authors of the report identified factors they believed caused the decline. Proliferation of courses, confusing pedagogy, less time on task, and an overall lack of academic excellence were reasons listed in the report. Conspicuously left out of the discussion was the social upheaval of the late 1960's and early 1970's. The attention on school reform intensified once again after the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983). The Reagan Administration formed the NCEE in April, 1981 and charged it with the responsibility of analyzing the quality of the United States education system. The members of the NCEE recommended the establishment of staff development for United States teachers as one means of raising student achievement (NCEE, 1983).

President Bush, business executives, and a group of governors held an education summit in 1989 to discuss the progress made since *A Nation at Risk*. Educators and educational researchers were not invited and not present at the summit. The meeting led to the creation of six broad education goals to be attained by the year 2000 (National Education Goals Panel, 1991). The goals became national policy in 1994 under the "Goals 2000: Educate America Act." Goals 2000 legislation provided increased funds

for staff development through a variety of grant opportunities. The results of the increased spending and staff development have not yet been determined. Narrative writing results for the National Assessment of Education Progress (NAEP) were released in 1998. Forty-five percent of the 19,816 fourth-grade students who took the exam were rated in the bottom three categories of “uneven,” “insufficient,” or “unsatisfactory” (NAEP, 1998)

The preceding reports, policy initiatives, and ideological issues brought about calls for national curricula standards, tests, and staff development to improve teaching and increase student achievement. President George W. Bush signed the “No Child Left Behind Act of 2001” into law on January 8, 2002. The federal government assumed a larger monitoring role in the educational progress of students as a result of the act. Section 1001 of the Act recommended increased professional development to elevate the quality of instruction delivered to students. By 2002, many states had core curriculum content standards, tests to monitor their implementation, and continuing education requirements for teachers. In New Jersey, teachers must acquire at least 100 hours of continuing education within a five-year period.

The leaders of the researcher’s school district increased the funding for in-district and out-of-district staff development during the 2000-2001 school year to help teachers meet the continuing education requirement and to increase student scores on the State tests through improved teaching. The increased funding helped to increase the number of in-district workshops for teachers and provided more funds for teachers to attend out-of-district workshops. All staff development opportunities offered by the district related to the district’s mission, goals, curriculum projects, and areas identified by the staff and

administration as being in need of improvement. Based on reviews of the teachers' annual Professional Improvement Plans, all staff members are accumulating hours of staff development. As stated in Chapter I, the participating district has not attempted to empirically test whether the staff development had a positive impact on student achievement. The next section of the literature review provides an insight into how the perceived increased need for staff development has been implemented in America's public school systems.

Historically, staff development for teachers consisted of single-day in-service events or workshops with little follow-up. Loucks-Horsley, Hewson, Love and Stiles (1998) defined a workshop as a structured approach to staff development that usually occurs outside of the classroom and involves leaders with some form of expertise and teachers who attend specific sessions at scheduled times. Joyce and Showers (1983) stated that one-day events were largely ineffective relative to classroom implementation. Teachers did not include the content of the in-service activities in future lesson planning or implementation. Achilles, C.M., Dickerson, C., Dockery-Runkel, L., Egelson, P. & Epstein, M. (1992) identified an alternative to single-day training and wrote that, "Successful in-service is not an add-on; it occurs during the day in the laboratory of the classroom... Some type of continuing "renewal" is needed if educators are to stay current and vibrant" (p. 3). Another point on the staff development continuum included reform types of staff development. Garet, Porter, Desimone, Birman, and Yoon (2001) included study groups, mentoring, and coaching as reform types of staff development activities. While traditional workshops tend to take place outside of the teacher's classroom and

outside of the regular teaching day, reform activities tend to take place within the classroom, during school hours or during the teacher's daily preparation period.

Wood and Thompson (1993) examined assumptions about staff development. They identified 11 faulty assumptions and located and developed 14 assumptions (see Appendix A) to guide staff development planners. The assumptions related to students and teachers. The faulty assumptions related to the historical aspects of staff development delivery and philosophy. Several of the faulty assumptions are congruent to Joyce and Showers' (1983) findings. Faulty assumptions 4, 5, 6, and 7 stated that in-service training does not need to be ongoing and teachers do not learn from their involvement in teaching, planning teams, or peer observation. The authors identified the use of inspirational speakers to get teachers motivated as a common faulty practice in the education field. Another faulty assumption was that teachers will automatically transfer what they learn in workshops into the classroom without assistance. Showers and Joyce (1996) reported the opposite. They found that a low percentage of teachers implement what they encounter at in-service training sessions.

Forty-nine out of 50 states have written standards for staff development and in some states those standards are linked to teacher licensing or continuing education requirements (New Jersey Department of Education, 2002). Darling-Hammond (2000) used data from a 50-state survey, case-study analyses, the 1993-1994 Schools and Staffing Surveys (SASS), and the NAEP to study state policy initiatives to improve teacher quality and the effects on student achievement. Her analysis suggested that state policies regarding teacher education, licensing, hiring, and staff development may make

an important difference in the capacities that teachers bring to their job and may be related to improved student performance.

North Carolina and Connecticut began systemic reform initiatives relative to teacher education, licensing, mentoring, and ongoing staff development during the mid 1980's and 1990's. Students in both states made substantial progress on the NAEP for fourth-grade reading and mathematics since that time. North Carolina's omnibus legislation of 1983 created professional development academies for its teachers to access. Connecticut's 1986 Educational Enhancement Act created institutes for teachers to attend as part of an ongoing professional development system (Darling-Hammond, 2000).

Coleman, et al. (1966) suggested that the quality of the school and the individual teachers made little difference in student achievement compared to the students' socioeconomic background. However, some research has suggested that schools and the quality of individual teachers can make a difference in student achievement. Edmonds (1979) responded to the Coleman Report and identified the original five correlates of an effective school. Although not included in the original five correlates, staff development and parent involvement were added in later years.

Several studies examined data from the Tennessee Value-Added Assessment System. These studies found that differences in teacher effectiveness are strong factors in the differences between students' learning. The studies suggested that the teacher differential outweighs other factors including the heterogeneous or homogeneous make-up of the classroom (Sanders & Rivers, 1996; Wright, Horn, & Sanders, 1997; Jordan, Mendro, & Weersinghe, 1997). One study found that students taught by a string of ineffective teachers had lower achievement and lower gains in achievement than students

taught by a series of highly effective teachers (Sanders & Rivers, 1996). This was a small-scale study and the long-term effects on large populations are not known.

Cohen and Hill (1998) examined the impact of California's instructional policy initiatives on fourth-grade students' performance in mathematics. The California Department of Education used the state assessment, California Learning Assessment System (CLAS), as an incentive for teachers to change their instructional strategies. The state made available new student curriculum units and provided professional development related to the units. The workshops also provided information about the CLAS test and its relationship to the new curriculum units. The state tests were aligned to the new curriculum units. The directors at the California State Department of Education reasoned that the teachers involved in the staff development programs would learn new things about mathematics and implement new kinds of instructional strategies. Hence student achievement on the mathematics portion of the CLAS would increase. Teachers attended state-sponsored workshops taught by consultants. The majority of the teachers in this study, approximately 29%, attended one day or less of training while approximately 14% attended two to six days and less than 3% percent attended more than six days. The results of this study did not show a strong relationship between staff development related to mathematics curriculum and increased student achievement as measured by the results on the CLAS. However, learning about the CLAS test had a positive effect on student achievement. This led Cohen and Hill (1998) to conclude:

This study confirms that neither teachers' practice nor students' achievement was changed by the professional development most California teachers had experienced. Still, very large amounts of money are spent every year on just such

activities. Our results therefore challenge those who make policy for and practice professional development: can they design programs, policies and requirements that focus more closely on improved teaching for improved student learning? (p. 33)

Harwell, M. & D'Amico, L. & Stein, M. & Gatti, G. (2000) attempted to determine the effects of staff development for teachers on student achievement over a 10-year period. The researchers looked at student reading and mathematics achievement in grades 3-5 during the period 1988-1998. The researchers found only one area in which staff development had an impact. Staff development did not have an effect on mathematics performance. Students of teachers who reported engagement in activities such as professional discussions with colleagues and their principals about literacy instruction had higher classroom averages in Reading as measured by the California Test of Basic Skills than did the students of teachers who reported little or no engagement in such activities.

Caulfield-Sloan (2001) conducted an experimental study to examine the effect of staff development for teachers on student achievement. Caulfield-Sloan found that pupil performance was influenced by teacher staff development. She divided 27 teachers into groups of 13 and 14 and provided training in the use of higher-order questioning strategies for science instruction. Students of teachers who were trained scored significantly higher ($p < .001$) on an open-ended science question assessment than did students of teachers who had not been trained. Caulfield-Sloan stated that, "Staff development directly influences instructional practices and pupil performance. The

instructional practices of teachers do in turn have a significant and measurable impact on the performance of students” (p. 62).

The studies cited in this section provide a rationale for this research. One study, Caulfield-Sloan (2001), demonstrated the ability of staff development to influence student achievement in the area of answering open-ended science questions at the third-grade level. She utilized small class sizes for the staff development. Other literature and research suggest a relationship between staff development and student achievement or call for further examination, but few have made this link empirically.

This literature review also examines the link between general staff development and organizational change.

Change and Innovation

Various definitions exist for the word innovation. Rogers (1962) defined innovation as an idea perceived as new by an individual. Innovation viewed as any new idea increases the scope of the definition. One must add a prefix or adjective to the word to focus or limit the scope. Placing education or educational before the word innovation narrows the scope. Viewing innovation as a paradigm or as a series of ideas and related opinions, enhances the possibility that the term will be widely recognized. The education innovation paradigm is widely supported in the countries that make up the European Union (Cros p. 59, Organization for Economic Cooperation and Development, 1999).

Cros wrote:

Four ideas make up this common paradigm (in the European Union): (a) the idea of the new and novel, (b) the idea of addressing unmet social needs and values, (c) the issue of power; and (d) the idea of change. For example, “new” may be

something old that has been restored. Similarly, bringing the Internet into the classroom is no guarantee of the presence of innovation.... An innovation brings values through an action that has objectives. (pp. 65 & 67)

Innovation and change are intimately linked. Change taken in the context of educational innovation could relate to changing behaviors, structures, thinking, or attitudes relative to education. Innovation is change but not all change can be considered innovation. There needs to be a voluntary, deliberate and intentional element present for change to be considered an innovation (Cros, 1999). Change is not a thing, but a process (Hughes & Achilles, 1971). Multiple models to facilitate the change process exist. The next section provides an overview of several change model structures.

A Summary of Change Models

Brickell (1961) listed three elements in the change process: (a) Design, (b) evaluation, and (c) development. Katz (1961) reported three similar elements. Rogers (1962) identified four main elements in his analysis of diffusion of innovations: (a) The actual innovation, (b) communicating the innovation from one individual to another, (c) in a social system, (d) over time. Planning and implementing a staff development plan could include Rogers' (1962) elements. Rogers stated that diffusion of an innovation occurs within a social system over time and in various situations. It involves behavior on the part of the innovator and the implementer. Behavior requires the innovator and implementer to expend effort. They expend effort while seeking out information about the innovation, communicating the information, following the trial and error process, and while adopting the innovation.

Rogers (1962) created a model to describe the paradigm of the adoption of an innovation. It contained three major elements: (a) Antecedents, (b) process, and (c) results. Antecedents are the factors present in the innovation or situation before the introduction of the innovation and Rogers described two types of antecedents. They included the actor's sense of self and his perceptions of the situation. Both can impact how an actor reacts to an innovation and if the actor chooses to adopt it. The process of adopting an innovation involves the information sources that innovators or change agents use to make individuals aware of the innovation. Finally, the results include whether the innovation was adopted or rejected. Rogers defined adoption as a decision by the implementer to make full use of a new idea as the best course of action available. In summation, Rogers' process of adopting an innovation can be divided into five levels or stages. Stage I involves the change agent raising awareness through dissemination of information. During Stage II the individual implementer develops interest in an innovation and the change agent works to cultivate that interest. Stage III consists of the evaluation of the innovation and Stage IV is the period in which the individual works with the new ideas on a small scale to determine the worth of the innovation. Stage V involves full scale use or adoption of the innovation.

Guba and Clark (1967) generated the Research, Dissemination, Development, and Adoption (RDDA) model to describe specific elements of the change process. They identified the following elements: (a) Research to advance knowledge of the innovation, (b) invention to formulate new solutions to problems, (c) design to give order to the parts of the solution, (d) dissemination to create awareness of the innovation among staff members, (e) demonstration to provide an opportunity for members to examine and

assess the innovation, (f) trial to become familiar with and assess the specific innovation, (g) installation to fit the innovation to a specific situation or classroom setting, and (h) institutionalization to assimilate the innovation as part of a system. In the case of an educational setting, the system may be the learning system of the classroom. Guba and Clark provided a practical framework for innovators to launch, monitor, and spread a new practice or idea because they added a level of specificity to earlier models.

Hughes and Achilles (1971) identified dissemination, demonstration, and diffusion as three stages in implementing an innovation. Achilles, Reynolds, and Achilles (1997) provided an adaptation of a change model that combined terms from the earlier models of Rogers (1962), Rogers and Shoemaker (1971), Hughes and Achilles (1971), Achilles and Norman (1974), Berman and McLaughlin (1974) and Yankelovich (1991). The model was labeled “A Communication/Change Model.” (p. 134). The model’s structure consisted of four stages: (a) Initiation, (b) implementation, (c) incorporation, and (d) institutionalization. As with Rogers’ (1962) model, one can see the theoretic connection between comprehensive change models, communication, and the staff development process.

Senge (1990) supported the use of models similar to those of Rogers (1962) and Achilles and Norman (1974). He suggested that the real leverage for change means seeing a process form change. The researchers from Project Sign (Achilles & Gaines, 1991) and the Mary Reynolds Babcock Project (Achilles et. al, 1992) incorporated ideas from communication theory as part of their research methodology and delivery of staff development.

The models described above create processes or frameworks for change-agents to reference when implementing innovation and provide a theoretical underpinning for staff development planning and delivery described in Chapter III of this study. The models were used as backbones of two similar studies.

One goal of staff development is an observable change in practice at an individual level, such as how teachers teach. Individual teachers are the acceptors or rejecters of the change or innovation at the individual level. Change at the individual and organization levels are interrelated as there cannot be diffusion without individual teachers accepting the innovation (Rogers & Shoemaker, 1971).

Communication is embedded in the educational change process and staff development. Diffusion of an innovation is predicated upon someone communicating a new idea or knowledge to others in the system. Learning is a form of change. Therefore, once a person learns something new, by definition, that person changes (Achilles, 1986). The change-agent's ability to communicate effectively and the structure of the communication can have a large impact on the successful adoption of an innovation. Rogers et al. (1971) defined communication as the process by which messages are transferred from a source to a receiver. He provided the S-M-C-R model to explain the process. The source (S) sends the message (M) by various channels (C) to the receiver (R).

Using Rogers (1962) five stage model of adoption and the change model developed by Achilles and Norman (1974) as an example, one can see the need for effective communication. The change agent must disseminate information and new ideas to raise awareness and build interest on the part of the implementers during stages I and

II. Then the change-agent must persuade the implementers during the evaluation stage so trial of the innovation can occur in the fourth stage. The change agent may provide feedback and support during the trial stage that can lead to the implementer choosing to adopt the innovation. Achilles (1986) and Achilles et al. (1997) combined Rogers' five stages into three categories that incorporated some earlier three-stage models of change.

Another theory of the way that change and communication interact illustrates one aspect of the complex systems at work during the change process. Senge's (1990) work with circle diagrams to explain complex systems could be used to help a person better understand the interaction and effects of communication on the change process and staff development. Senge wrote:

The key to seeing reality systemically is seeing circles of influence rather than straight lines. This is the first step to breaking out of the reactive mindset that comes inevitably from linear thinking. Every circle tells a story. By tracing the flows of influence, you can see patterns that repeat themselves, time after time, making situations better or worse. (p. 75)

The literature on systems, change, and communication provide a foundation to help think about staff development as a process of change in the context of a larger system called schooling. The literature points to researched models for change and patterns of communication that administrators could look to for guidance as they plan and implement small and large-scale change. Figure 1 provides a summary of the change models and communication processes discussed in this chapter. A body of literature exists that provides a foundation for understanding problems and the change process.

Change Stage/Authors	Stage 1	Stage 2	Stage 3	Stage 4
Rogers (1962)	Awareness/ Interest	Trial & Evaluation	Adoption or use	
Guba & Clark (1967)	Research	Development	Dissemination	Adoption
Achilles & Norman (1974)	Dissemination	Demonstration	Diffusion	
Berman & McLaughlin (1974)	Initiation	Implementation	Incorporation	
Rogers & Shoemaker (1983)	Knowledge	Persuasion & Decision	Implementation & Confirmation	
Yankelovich (1991)	Consciousness Raising	Working Through	Resolution	
Achilles, Reynolds & Achilles (1997)	Initiation	Implementation	Incorporation	Institution- alization
Communication (Change Agent to Receiver)	One way with large group or general audience	Two-way with small groups and specific targeted audiences	One-on-one, very small groups & hands on coaching	Peer coaching, reflection, self-renewal, discussion, self- monitoring

Figure 1. An overview of the change models and communication methods discussed in this chapter and used as the foundation for the delivery of staff development in this study.

Problems and the Change Process

Fullan (1993) stated that problems are a necessary part of the change process.

He wrote:

Problems are endemic in any serious change effort: both within the effort itself and via unplanned intrusions. Problems are necessary for learning, but not without a capacity for inquiry to learn the right lessons... Problems are the route to deeper change and deeper satisfaction... Success in school change efforts is much more likely when problems are treated as natural, expected phenomena, and are looked for. Only by tracking problems can we understand what has to be done next in order to get what we want... Avoidance of real problems is the enemy of productive change because it is these problems that must be confronted for breakthroughs to occur. (p.26)

Achilles, et al. (1997) extended Fullan's thoughts by stating that problem finding should be part of a school principal's leadership activities because problem analysis relates to change. The principal should express problems in a way that they can act as the initiation phase of innovation. Finding and solving problems can create ownership on the part of the problem solvers. Problem finding builds awareness and interest so identifying a problem could act as the initial exposure to the need for change.

Lewin (1948) identified forces that can impede or retard the change process. Psychological and cultural restraining forces can undermine a leader's attempt to facilitate change. Lewin believed that one test of leadership is the ability to engender commitment through involvement and marshal the power of restraining forces, thereby transforming restraining forces into driving forces to support change. Communication is

a key factor in that process. Senge (1990) built upon Lewin's ideas by presenting the concept of compensating feedback and stating that a change agent's positive intentions can cause unintended responses from the organization that offset any possible benefits of the proposed innovation.

Fullan (1993) wrote that participants involved in the problem-solving process acquire a deep ownership for the innovation from the learning that takes place while fully engaged in problem-solving activities. He stated that, "In this sense, ownership is stronger in the middle of a successful change process than at the beginning and stronger still at the end than at the middle or beginning" (p. 31).

The initial sense of ownership could be developed through successful problem finding and identification that could ultimately lead to the diffusion of an innovation and change. Comprehensive staff development should act as part of the process, implementation, and subsequent adoption of the innovation or change as a generally accepted goal of staff development is to influence teacher behavior. Taken systemically, staff development can be woven throughout any one of the change models stated earlier. For example, staff development could act as the research or invention phase. Job-embedded staff development has the trial function of Guba and Clarks' (1967) change model clearly embedded within it as well as the installation, demonstration, and dissemination functions.

The literature review included studies specific to writing instruction in the elementary grades. Reviews of staff development in writing and job-embedded staff development are presented.

Staff Development in Writing

This researcher did not locate specific studies directly related to writing staff development and the use of rubrics and reflective questions as student self-assessment devices and an impact on student achievement. The majority of the literature reviewed in this section focuses on specific writing strategies employed by teachers or researchers in classroom settings and the effects on student achievement. In the absence of staff development studies, this researcher provided an overview of the studies related to teacher instruction and student use of criteria, scales, and scoring rubrics during writing and student achievement, as those studies are an indirect link to this proposed study.

The presence of criteria in the generating, organizing, and goal-setting stages of the writing process is significant (Hillocks, 1986). Hillocks stated that criteria, also referred to as scales, helped to focus students' attention on evaluating and organizing their writing and beyond the syntax and mechanics correction level. Hillocks continued:

If children are adapting conversational schemata to writing, they must also need to learn that the requirements for writing are different from those of speaking – that simply writing down the information they might provide in a conversational tone is inadequate. If that is the case, then youngsters must learn appropriate criteria which are appropriate to writing. (p. 33)

This researcher located two studies with elementary students that preceded Hillocks comments. In the first study Sager (1973) used scales similar to today's scoring rubrics to teach children ways to judge their own work and the writing of others. Sager asked sixth-grade students to generate additional information to enhance their narratives, which were determined by the researcher to be the length of conversational tone. Sager

provided students a set of questions that guided them to reflect upon the details in their narratives and add such details as necessary. By providing criteria based questions, Sager facilitated the learning of general requirements of written schemata, as well as particular criteria for selecting content. Sager required the students to do more than rate a composition. The students used the scales to find problems with writing. They generated ideas to correct the problems and then considered the principles of writing related to the problems and solutions. Sager's experimental group had a pre/post gain of .84 compared to the control groups loss of -.30. Sager reported the experimental group effect size of .93, which was close to one standard deviation. It should be noted that the students received instruction in judging and revising; therefore the process of simply judging writing based on a scale probably did not contribute to the entire gain. The process of revising based on judgments related to the scales may have also contributed to the gains.

Bennett (1976) conducted one of the first studies to examine modes of instruction used to teach writing. Hillocks (1981) followed and cited four general modes of instruction: (a) presentational, (b) natural process, (c) environmental, and (d) individualized. The environmental mode of instruction was most effective when teaching students to use criteria and scales (Hillocks, 1981). Hillocks (1986) wrote:

(The environmental mode) brings teacher, student, and materials more nearly into balance and, in effect, takes advantage of all resources of the classroom. In this mode, the instructor plans and uses activities which result in high levels of student interaction concerning particular problems parallel to those they encounter in certain kinds of writing, e.g., generating criteria and examples to develop

extended definitions of concepts or generating arguable assertions from appropriate data and predicting and countering opposing arguments. (p. 247)

Coleman (1982) confirmed Sager's (1973) results with his experimental groups of second and third-grade students who used Sager's scales to assess their own writing. Those students made significantly higher gains than the control group. The studies suggested that when students learn criteria, they may seek content which results in higher-quality writing because they know what constitutes good writing. Hillocks (1986) cited the works of Sager (1973) and Coleman (1982) among other studies and concluded:

Scales, criteria, and specific questions which students apply to their own or others' writing also have a powerful effect on enhancing quality. Through using the criteria systematically, students appear to internalize them and bring them to bear in generating new material even when they do not have the criteria in front of them. (p.249)

Embedded within Hillocks' comments are references to the higher levels of Bloom's (1956) taxonomy. Hillocks used the terms analyze and evaluate to describe the actions students took when using criteria during the writing process. The students needed to be able to step back and reflect upon their own work in an objective manner. Piaget's (1950) formal operations stage corresponds to the analysis and evaluation levels of Bloom's taxonomy. Children functioning in the formal operations stage can generally make predictions about the future based on knowledge of the past, conduct hypothetical analyses of situations, and think abstractly about language. Piaget believed children entered the formal operations stage during 11-15 years of age. However, some students enter the stages of development at different speeds and ages. Some may begin using

abstract thought at age nine or 10 while others may not until 12 or 14 or even later (Elkind, 1996).

A study conducted in middle schools in Tucson, Arizona suggested a possible link between staff development in the use of scoring rubrics to assess student writing and as a teaching tool with improved student performance on that state's writing assessment. Another outcome of the study was the feeling by teachers that the rubric scales created a common set of criteria that fostered effective teacher collaboration because of common goals and clear standards. The study indicated that when teachers worked together toward measurable writing improvement goals using a standard rubric, they communicated more effectively relative to instructional methods and practices (Schmoker, 2000). Focusing discussion of student proficiency around the scoring criteria may help to create a common language for instruction.

Breyer (1979) found that the use of teacher and student-made questions could help students understand details related to the subject that they are to write. Breyer examined social studies teachers use of questions to help students internalize historical data before composing an essay to demonstrate understanding. The teachers prepared questions based on Bloom's (1956) Taxonomy of Educational Objectives. The students answers to the questions served as a prewriting organizational tool.

Clifford (1981) used sets of criteria to guide freshmen college students in rating their own writing and the writing of fellow students. A feedback sheet was also used in the latter study. Small groups of students responded to ideas and feelings about content and also offered suggestions relative to details and deletions. The feedback sheet called for highly personal reactions and reflections of the writing samples. The feedback sheet

included questions created specifically to prompt students to think about their writing and how to improve it. However, it should be noted that some of the questions were asked in a yes/no format. Questions formatted yes or no could allow students to view the questions more as a checklist and less as a thought-provoking tool.

Clifford's (1981) study suggested that the active application of criteria and suggestions for improvement based on that criteria enabled students to internalize criteria. The internalization of the criteria helped to guide the students during their independent writing. Clifford's experiment showed an experimental effect size of .61 and a pre-to-post effect size of 1.12 for experimental groups. It should be noted that the same instructors taught the control and experimental groups except that the experimental group received the treatment and the control groups did not. All other instructional aspects were similar.

Another method of helping students become aware of their own composing processes is by engaging them in self-report conversations or think-alouds regarding their writing. Faran (1990) and Lapp and Flood (1989) reported that as students debrief their own writing processes they become aware of alternative ways of approaching writing tasks (p. 554).

Cohen and Scardamalia (n.d.) studied 21 sixth-graders and taught the students diagnostic statements. The statements served as criteria for the students to judge their writing. The nine-statement criteria were taught over five teaching sessions. The teacher guided the students through the use of two criteria during each session. The students revised their own essays using the criteria after each teacher led session. The researchers

reported significant gains in the quality of the revisions made and the new ideas included for the treatment group.

The studies cited above are examples of researchers working with students to improve writing. This researcher did not locate empirical studies focused on providing staff development to teachers in the area of teaching students self-assessment strategies or on teaching fourth-grade students self-assessment strategies. The lack of empirical research in this area of staff development and the stated success of the studies described in this literature review relative to the use of criteria, scoring rubrics, and reflective questions demonstrate the need for additional research and support the completion of this study. The next section synthesizes the literature on job-embedded staff development.

Job-Embedded Staff Development

The National Staff Development Council (NSDC) revised their standards for staff development in 2001 to update the NSDC's original 1994 standards. The revised standards broaden the definition of staff development and include practices that help teachers learn from each other and from their daily practice. The standards emphasize the conditions necessary for adult learning and provide leaders with some guidance on how to make staff development a part of the day-to-day classroom operations.

One approach congruent with the need to expand staff development to day-to-day operations of the classroom is job-embedded staff development. Wood and McQuarrie (1999) described job-embedded staff development as learning by doing. Structured study groups, action research, mentoring, and peer coaching qualify as examples of job-embedded staff development. Reflecting on one's learning experience, generating and sharing new insights, and learning with oneself and colleagues are integral

parts of the process. Learning can occur when teachers share their plans and outcomes with colleagues and request feedback and suggestions for alternative approaches. Job-embedded staff development provides teachers opportunities to examine student work and create lessons and alternative delivery strategies based on student outcomes (Norton, 2001). The staff development directly links to the classroom and is generated from the outcomes of the classroom. Sparks and Hirsch (1997) wrote:

Job-embedded learning, on the other hand, links learning to the immediate and real-life problems faced by teachers and administrators. It is based on the assumption that the most powerful learning is that which occurs in response to challenges currently being faced by the learner and that allows for immediate application, experimentation, and adaptation on the job. In the future, the amount of time devoted to training will diminish, and teachers and administrators will spend most of their learning time in various forms of job-embedded activities. (p. 52)

Job-embedded staff development is congruent with the definition of a reform-type staff development structure presented by Garet et al. (2001).

Wood and Thompson (1993) examined assumptions about staff development and located and developed 14 assumptions to guide development planners. The assumptions related to students and teachers. In essence, one of the assumptions stated that goals which guide staff development planning and implementation should focus on research-based strategies and methods that improve student outcomes. The 10th assumption specifically addresses adult learners and the implications for staff development planning. Wood and Thompson (1993) wrote:

...staff development must enable teachers and administrators to see the relationship between what they are learning and their day-to-day activities and problems. Adults need to see the results of their efforts and have feedback on how well they are doing. Therefore, in-service should provide opportunities for educators to try out what they are learning and receive structured, helpful feedback. (p. 55)

Wood's and Thompson's (1993) 10th assumption related to job-embedded staff development. The 10th assumption called for staff development that enabled teachers to see the relationship between what they learn during the development sessions and their daily classroom operations. It also made reference to providing feedback relative to how well the teacher is implementing the new strategy or learning.

Based on the examples stated and types of staff development activities classified as reform activities, job-embedded staff development can be considered congruent to those types. Job-embedded staff development should be implemented within a change model structure as part of the change process. Job-embedded staff development lends itself to the change models in that it can occur in the classroom to provide time for invention and trial. It can also occur outside of the classroom as demonstration and dissemination elements by the change agent or innovator.

The literature in Chapter II provided a theoretic framework for the present study. The lack of literature related to the impact of staff development on student achievement demonstrated the need for this study. Chapter III presents the research design, procedures, and data analysis and provides specific examples of how job-embedded staff development was used in this study.

CHAPTER III

Research Design, Procedures, and Data Analysis

This chapter describes the design, subjects, instruments, and testing procedures used in this study. The researcher used the instruments and processes to examine the outcomes of fourth-grade teachers trained to instruct students in the use of scoring rubrics and reflective questions as self-assessment devices. The researcher performed a post-treatment assessment of student achievement on a narrative writing assessment as an indicator of effectiveness.

Effective student performance in the area of narrative writing is a goal of the school district in this study. The creation of the New Jersey Core Curriculum Content Standards in 1996 and the implementation of the Elementary School Proficiency Assessment (ESPA) increased the need for improved instruction. Effective writing is now a priority in the district. This researcher chose to examine the fourth-grade level because the ESPA directly impacts that grade level. The researcher used the studies by Sager (1973) and Clifford (1981) cited in Chapter II as models for the use of rubrics and reflective questions as self-assessment devices. The staff development focused on training teachers how to instruct students to judge their writing and make in-depth revisions based on the criteria found on the rubric and a set of reflective questions related to the rubric. The researcher used the change model structure developed by Achilles et al. (1997) as the framework for providing the staff development.

Background

The researcher conducted a series of eight small-group training sessions during a 14-week period. The session participants consisted of the experimental group (n=2)

teachers and the researcher. The researcher, a middle school principal in the district but not a direct supervisor of the teachers involved in this study, conducted the training sessions. The researcher did not evaluate the teachers relative to job performance as part of this study. The researcher conducted classroom observations to determine whether teachers were implementing the staff development strategies and to provide feedback relative to the implementation.

The researcher had previously established credibility with the teaching professionals as the district curriculum and staff development coordinator for one year and then as middle school principal. As curriculum coordinator, the researcher worked with the elementary school staff on an ongoing basis according to the district's staff development calendar. The researcher, as architect for the district's staff development program, provided staff development on multiple occasions and scheduled all staff development activities in the district.

Research Design

The researcher used an experimental posttest only control design in this study. The researcher assigned teachers to the experimental (X) and control (O) groups on a random basis by using a table of random numbers and the teachers' district I.D. number to control for selection and mortality. This research design controlled efficiently for all threats to validity and sources of bias (Campbell & Stanley, 1963). The small number of teachers did, however, pose a study limitation.

The researcher used a posttest-only design because the research study occurred in an ongoing educational environment. A posttest comparison between the X and O-groups evaluated the effects of staff development instruction for teachers in the X group.

The researcher examined the differences in the frequencies of student responses to a narrative writing picture prompt rubric-scored assessment from the group of students whose teachers received staff development treatment and from the students whose teachers did not receive staff development treatment.

Subjects

The subjects were 5 fourth-grade teachers and 98 fourth-grade students. The X-group consisted of two female teachers and the O-group consisted of two female teachers and one male teacher. The researcher examined scores from writing samples from 36 students in the X group and 62 students in the O group. Participating teachers signed informed consent forms indicating their knowledge and willingness to participate voluntarily in the process. The class sizes of the participating teachers ranged from 21 to 23 students. The participants in the O group (n=3) were told that they could receive the treatment later if the treatment had a positive impact on student achievement.

Procedures

Training Model

The researcher employed a job-embedded method of staff development, congruent with aspects of Wood and Thompsons' (1993) assumptions for staff development, during this study. The job-embedded staff development structure used in this study was based on two premises: (a) Successful staff development focuses on teacher behaviors that impact classroom instruction, and (b) that staff development is linked to problem solving and organizational change. The researcher followed a staff development delivery model based on the change model structures developed by Rogers (1962), Rogers and Shoemaker (1971) diffusion of innovation, Achilles and Norman

(1974), Rogers and Shoemaker (1983), Yankelovich (1991), and Achilles et al. (1997). The process for the staff development delivery closely resembled the three-stage model developed by Achilles and Norman (1974).

The Achilles and Norman (1974) model consisted of three stages: a) Dissemination; b) demonstration; and c) diffusion. The researcher presented information about the staff development to the teachers in the X group during the dissemination phase of the training. Subsequent meetings and training focused on working with the participants as they implemented and incorporated specific staff development topics into their classroom instruction. Figure 2 illustrates the model and communication process used to guide the staff development training in this study. The terms are combined from Rogers (1962), Achilles and Norman (1974), and Achilles (1986). The model illustrates that as an individual moves toward acceptance of the proposed innovation that person passes through each of the stages. Each stage has a set of communication elements. The elements become more personalized the closer the individual gets to diffusion. For example, the communication elements present in Stage I are more impersonal and one-way when compared to the elements in Stages II and III.

Staff development must begin with the skills and knowledge teachers bring with them and from the belief that students benefit when teachers share and critique their best ideas and strategies with one another (Lieberman & Wood, 2002). The researcher utilized the participating teachers' existing skills and teaching styles as a starting point for the staff development and incorporated them into the ongoing staff development training sessions.

Communication Aspect	Stage I: Dissemination	Stage II: Demonstration	Stage III: Diffusion
Relation to Staff Development	Raise awareness of innovation and build interest .	Trial and error by teachers. Working through the problems of implementing.	Use in the classroom.
Message	Background information / conceptual underpinning of innovation.	Specific skills and strategies.	Transfer of the skill to classroom situations and various student learning styles.
Method of Transmitting Message and Change Agent Actions	Distributed literature on self-assessment and conducted small group discussions.	Demonstration, question and answer sessions, classroom observation, collaborative planning activities.	Coaching, reflection, and application in classroom environment.
Communication	Primarily one-way.	Two-way small group and individual.	Two-way and primarily individual.

Figure 2. An overview of the change model communication process as it was used during this study.

Small staff development class size (n=2) made differentiating the staff development instruction to meet the needs of the teachers in the X group easier. Each of the two participants received individualized feedback and instruction tailored to meet their level of experience and understanding. Although both teachers received the same content, the explanations and demonstrations differed in some cases to account for individual learning styles. The small class size reflected one of Wood and Thompson's (1993) assumptions for staff development in the training format. They included the following statement in the 10th assumption for staff development:

Therefore, staff development ought to include learning in small groups in which teachers and administrators have an opportunity to share, reflect, and generalize from their learning and experiences. Because the transfer of learning is not automatic for adults, it must be planned. Therefore, coaching and other kinds of follow-up support are needed to help educators transfer learning into daily practice. (p. 55)

Treatment

The researcher conducted eight one-hour training sessions and six follow-up conferences with the X-group (n=2) of fourth-grade teachers over a 14-week period. The researcher provided the teachers with staff development in teaching students to use criteria from the New Jersey Registered Holistic Scoring Rubric and a set of reflective questions as self-assessment devices. The X and O-group teachers administered a narrative writing picture prompt assessment to the students after 14-weeks of staff development. The narrative writing assessment was part of the districts' regularly scheduled assessment system.

Each staff development session addressed specific criteria from the rubric, strategies for teaching students to self-assess their writing, and ways to use specific reflective questions. The New Jersey Registered Holistic Scoring Rubric (see Appendix C) has four components: (a) Content and organization, (b) usage, (c) sentence construction, and (d) mechanics. During each session, the researcher taught the X-group teachers how to teach their students to use reflective questions (see Appendix D). The researcher presented related literature on the topic of self-assessment during the

dissemination phase, prior to beginning the training sessions. The literature acted as a starting point for discussion.

Staff Development Session Overview

The researcher began the first session by discussing the literature on self-assessment. The discussion was based on the material distributed prior to the first session. The discussion acted as a starting point for planning the staff development. The X-group teachers (n=2) were active participants in the staff development planning sessions as the researcher based each successive planning session on the participants' grasp and implementation of material presented during previous sessions. The first staff development session focused on teaching teachers how to instruct students to self-assess the opening of their writing. The researcher provided direction and answered the teachers' questions on how to introduce the scoring rubric (see Appendix E) and reflective questions as self-assessment devices. A frank and open give-and-take existed and the researcher and teachers asked questions, traded ideas, and brainstormed practical methods of introducing the rubric, set of reflective questions, and teaching the concept of literary openings. The first session ended with an action plan for the instructional sequence the teacher would use with their students. The researcher assisted the teachers with writing informal lesson plans.

Because the students were not familiar with the New Jersey Registered Holistic Scoring Rubric, the teachers used one class period to provide an overview of the rubric. The overview consisted of looking at each of the four components of the rubric and deciphering the vocabulary. All of the descriptors of the rubric were woven into the 14 weeks of staff development instruction and thus transmitted to the students by the

teachers. Then the teachers introduced the reflective questions and provided examples related to openings during the first week of instruction. Each week, the teachers presented an additional characteristic of the rubric and reflective questions.

The staff development sessions were divided into two parts. The first part involved the staff development and discussion of teaching strategies. The second part dealt with teacher concerns and began with the teachers providing an update about the implementation of the strategies or concepts presented during the previous week's staff development session. Teachers presented perceived implementation problems or suggestions and the researcher provided feedback and specific instructions when needed. The researcher asked clarifying questions to determine if the problems and concerns were structural or instructional. Structural concerns included teachers not having enough time to present the material planned and inappropriate sequencing of topics. Instructional concerns included incongruent modes of teacher delivery for the skill or concept being presented to the students.

Instructional Modes

The presentational mode of instruction (Hillocks, 1981) is characterized by specific objectives, teacher-led lectures, the study of models or exemplars; teacher generated writing assignments, and feedback from teachers following a written experience. The teacher dominates the talk in the classroom and directs all operations. Students are expected to follow the model presented by the teacher. The natural process mode is characterized by general objectives, student selected free writing opportunities, writing for an audience of peers as opposed to the teacher, high levels of interaction among students, and opportunities to revise writings. The environmental mode provides

a middle ground between the teacher-directed presentation mode and the student-selected writing instruction of the environmental mode. A balanced give-and-take approach exists. The environmental mode provides more direction and facilitation than the natural process mode. The individualized mode seeks to help students on an individual level and the focus of instruction may vary widely based on individual needs. The natural mode is more exploratory in nature. The environmental mode of instruction was congruent with the types of skills presented to students during this study.

The instruction used in Sager's (1973) study was an example of environmental instruction utilized in writing classes as it emphasized students using a set of scales in evaluating compositions and determining concrete suggestions for improvement. Similar to Sager's study, the students in this study were expected to do more than find mistakes in their writing. They were encouraged to generate ideas and strategies to improve upon their mistakes by synthesizing and applying the skills the teachers taught them.

The researcher provided subtle encouragement to the teachers on how to move from the presentation mode to the environmental mode. The researcher accomplished this by asking questions and raising awareness of incongruent delivery methods. Appendix F contains an overview of the topics covered each week. Each staff development session had instructional strategies woven into the discussion and questions. This mode of delivering staff development was in contrast to the teachers' experience of traditional workshop lecture style. The teachers asked the researcher, "Is this staff development?", because the format was based on the environmental mode of instruction, professional discussion, and collaborative planning instead of the presentation mode

lecture style. The teachers were active participants and had a voice in the staff development during this study.

Qualitative Data Collection

Teacher Characteristics and Comparisons

The researcher compared the teacher groups based on the following characteristics gathered through teacher responses to a pre-study questionnaire (see Appendix B): (a) Years teaching, degrees, and certifications; (b) teaching mode as defined by the teacher participants, and (c) teaching mode relative to writing instruction as defined by the teacher participants. The researcher determined from the participants' responses that they had not used the treatment previously in their classes.

Classroom Observations

The researcher conducted one classroom visitation of each teacher during the ninth week of the study to determine how effectively the participants implemented the strategies learned during the sessions and to compare the actual teaching to the reflections written in the teachers' logs. In post observation conferences the researcher provided the participants with feedback relative to how they taught the self-assessment strategies. There were two purposes for the observations and subsequent conferences: (a) Provide constructive feedback to the teachers relative to the implementation of the strategies learned during staff development, and (b) to determine if the teachers were using the staff development ideas. The researcher observed the X group teaching the self-assessment strategies. The teachers asked students to work together and brainstorm reflective questions and self-assessment strategies. The researcher saw and heard students generating and asking reflective questions based on the criteria from the New Jersey

Registered Holistic Scoring Rubric. Students asked “how” and “yes/no” types of questions related to revising their papers. The presence of “yes/no” questions indicated that some students internalized the strategies at differing levels and that not all students had taken full ownership of the strategies. However, students in both of the experimental classes made references to the rubric and reflective questions.

Reflective Logs

The X-group (n=2) teachers wrote two personal reflections during the 14-week period. Personal reflections were important to the study because they allowed the teachers to discuss their level of adoption, incorporation, and adaptation. Adoption, incorporation, and adaptation were three factors that indicated the teachers moved along the three-stage change continuum developed by Achilles and Norman (1974). The teachers wrote one reflection after the seventh week of training and wrote again after the final week. Killion (1991) wrote that reflective logs encourage learning from successes and problems encountered during implementation:

Keeping a log can help educators learn how to improve professional practice, to discover what is working and not working, uncover personal strengths, and identify areas where improvement is needed. In their reflections, they examine such questions as:

- What am I learning about teaching and learning?
- What is important for me to learn so I can be effective?
- What am I discovering about myself? (pp. 44-46)

Quantitative Data Collection

Student Characteristics and Comparisons

The researcher compared the characteristics of the students in the X and O groups based on their scores on the verbal section of the Cognitive Abilities Test, eligibility for free or reduced lunch, gender, and eligibility for acceptance into the school's gifted and talented programs. The researcher's school district uses results from the verbal and non-quantitative portions of the Cognitive Abilities Test as well as writing portfolio scores to identify students for the gifted and talented program. Students must score in the ninth stanine on the verbal section and not less than the eighth stanine on the non-verbal. The district uses the verbal section as a predictor of ability for language arts and the non-verbal section as a predictor of ability for problem solving and abstract thinking. Students must also receive a score of 4 out of 6 points on a narrative writing sample to be considered for the program.

Student Assessment

The fourth-grade teachers assessed the students from the X and O classes at the conclusion of the 14-week study. The assessment was a narrative writing assignment based on a picture prompt. The teachers in the in the X and O groups gave the students two consecutive 45-minute writing periods to complete the task. The assessment was part of the school district's comprehensive assessment system. This assignment mirrored the task that the students encounter on the writing section of the ESPA.

The district conducts formal writing assessments with all fourth-grade students on the skill of narrative writing using picture prompts pre-selected by district personnel. Each assessment is placed in a formal writing portfolio that follows the student

throughout his or her K-8 career. The picture prompts are taken from state-released samples of the ESPA and other related samples. All students in the X and O groups participated in the assessment during a two-day period. The assessment took place at the same time periods for each day.

Scoring of Student Responses

The Educational Consulting Service (ECS) in Marlton, NJ scored all writing samples. The ECS has been in business for 20 years and has specialized in test scoring since 1995. The company scores state tests and writing samples for school districts in New Jersey, Connecticut, Illinois, Pennsylvania, Texas, and New York. The company also scores commercial standardized tests such as Terra Nova and the Stanford. The scorers used a two-rater scoring system and scores were awarded using the same method used by New Jersey assessors when scoring the narrative writing portion of fourth-grade ESPA. A third scorer was used to make final score ratings in cases when a discrepancy of two or more points existed between the two primary raters. This represents the same process used by New Jersey writing assessors. Each rater scored student papers using the New Jersey Registered Holistic Rubric. The Educational Consulting Services Company claims an inter-rater agreement rate of 98.8%. This researcher experienced an inter-rater agreement rate of 95%. Each paper received two scores. The assessors provided one score for content and organization and a holistic score that took into account all the descriptors on the rubric. The latter score represented the same type of score given by State assessors on the ESPA.

Inter-rater Agreement

Students in the X group self-assessed three of their writing pieces during the study. They used the Student Centered Scoring Rubric with criteria based on the New Jersey Holistic Scoring Rubric. The teachers also scored each paper and compared the teacher score to the score given by the students. The researcher attained an inter-rater agreement average by counting the number of papers that the teachers and students scored the same and dividing by the total number of papers scored by the teachers.

Data Analysis

The researcher used non-parametric methods as the primary method of data analysis. However, the researcher conducted secondary analyses using parametric methods and those results are in Appendix G. Quantitative and qualitative data analyses were employed. Qualitative components of study included, (a) pre-workshop teacher background and instructional mode questionnaire, (b) classroom observations of teacher instructional styles by the researcher, and (c) reflective logs written by the X-group teachers.

The quantitative component of the study included, (a) comparison of student verbal COGAT SAS scores, (b) analysis of the X and O-group student scores from a picture prompt narrative writing assessments of the X and O-group students following the 14-week staff development sessions, and (c) inter-rater agreement averages.

The researcher reported the significance and effect size of the results. Using effect size is important to build a case for the connection between staff development and student achievement.

Chapter III presented the methodology for this study. The researcher described the use of a communication/change model structure for the delivery of job-embedded staff development and presented several assumptions that guided the planning and implementation of the staff development sessions. Chapter IV provides a review of the qualitative and quantitative results. Tables and figures are presented to summarize the results.

CHAPTER IV

Results

The researcher's purpose for conducting this study was to determine the effects of staff development for teachers in the use of scoring rubrics and reflective questions as instructional tools on fourth-grade students' narrative writing achievement. The null hypothesis states that there will be no difference between, (a) the performance of students on a rubric-assessed narrative essay who had been instructed by teachers who received training on how to use scoring rubrics and higher-order reflective questions as a self-monitoring and reflective device, and (b) the performance of students on a rubric-assessed narrative essay instructed by teachers who had not received training. Limited literature exists to suggest otherwise.

The researcher presents qualitative and quantitative results in this chapter using tables and figures where appropriate. Qualitative results include, (a) pre-study teacher characteristics, (b) classroom observations, and (c) reflective logs. Quantitative results include: (a) student characteristics, (b) content and organization scores, and (c) score frequencies for non-compacted and compacted scores. Tables and figures are included to summarize results and add clarity.

Qualitative Results

Pre-Study Teacher Characteristics

The characteristics of the X-group teachers (n=2) resembled those of the O-group teachers (n=3). The teachers in the X group had 10 years and 2 years of teaching experience while the teachers in the O group had 1 year, 30 years, and 17 years of experience. Each teacher had at least a B.A or B.S. degree. No teacher had a major or

degree in writing. All of the teachers were certified elementary education teachers in the state of New Jersey. One teacher in the X group had 15 post-baccalaureate credits and two out of the three O-group teachers had more than 20 post-baccalaureate credits.

The researcher interviewed each teacher, using a prepared questionnaire, to determine his or her teaching style related to writing. Table 1 provides an overview of the teachers characteristics based on the researcher's interviews with the teachers and access to their personnel files. All the teachers described their modes in similar ways. (A description of the modes is on page 36 of this study.) The researcher categorized their teaching styles according to Hillocks' (1981) four modes of instruction: (a) Presentational, (b) environmental, (c) natural process, and (d) individualized. Based on the teachers' self-descriptions of their teaching behaviors, the researcher characterized their styles as presentation mode (Hillocks, 1986) except for X-group teacher E who described a presentation mode with aspects of environmental mode. For example, all of the teachers used the words 'structured' or 'teacher directed' when asked to describe their overall teaching styles. The teachers used phrases such as "step-by-step" and "follow a format" and the word "structured" when asked to describe how they taught writing.

The presentational mode is teacher-directed and dominated. Writing instruction provided by teachers using the presentational mode consists of the teacher presenting a concept and directing the students to imitate the teacher's creation. The teacher edits the students papers and provides written directions to the students relative to what the teacher thinks the students should do to improve the paper.

Table 1

Teacher Characteristics (Control = O; Experimental = X) Based on Researcher's Interviews

<u>Teacher</u>	<u>Degree Status</u>	<u>Years of Experience</u>	<u>Teaching Style (Self reported)</u>	<u>Use strategies prior to study?</u>
A (O)	B.A. Sociology & Elem. Educ. +20 credits	30 total 24 in 4 th grade	Presentation mode	No
B (O)	B.S. Elem. Educ. +30 credits	17 total 11 in 4 th grade	Presentation mode	No
C (O)	B.A. Psychology & Elem. Educ.	1 total 1 in 4 th grade	Presentation mode	No
D (X)	B.A. Psychology & Liberal Arts +15 credits	10 total 10 in 4 th grade	Presentation mode	No
E (X)	B.A. Biology & Elem. Educ.	2 total 2 in 4 th grade	Presentation mode and Environmental modes	No

Average years teaching fourth grade: O-Group = 11.9 years; X-group = 6 years.

Average years of teaching: O-Group = 15.9 years; X-group = 6 years.

The environmental mode provides a middle ground between the teacher-directed presentation mode and the student-selected writing instruction of the natural mode. The environmental mode of instruction facilitates student reflection and self-assessment (Hillocks, 1986). All the participants stated they provided direct writing instruction in the area of narrative writing an average of once per week. Prior to this study, none of the teachers used the strategies taught by the researcher during the staff development sessions. Self-assessment strategies and reflective questions were not part of the teachers' instructional practices before the staff development activities.

Overall, the teachers in the X group and O group described similar teaching styles, had similar educational and certification backgrounds, represented a mix of tenured and non-tenured teachers, and none used the staff development strategies taught in the staff development sessions prior to this study. In the case of the teachers in the O group, none used the strategies at any time during this study. The results indicated that when taken as groups, the characteristics of the groups were similar.

Training Routines During the Study

A pattern of communication, based on the communication/change model structure developed by Achilles and Norman (1974) was used during the training sessions and a routine for training developed. The researcher used one-way, small group communication to introduce the session concept and related research. Then the communication flow changed to individual and two-way small group as the participants and the researcher brainstormed ways to teach the students the strategy and then planned lessons for each day of the week. The researcher provided critical commentary related to teacher implementation and focused the discussion on the self-assessment process and

ways to use the rubric and reflective questions. The researcher also answered questions related to implementation and perceived problems. Then the participants taught the lessons for the week. After that, the researcher conducted a voluntary follow-up meeting to address the participants' perceived implementation problems and answer any questions.

The participants attended each of the six follow-up meetings during this study. Each follow-up meeting became a training session followed by lesson plan creation for the upcoming week. The cycle repeated itself during the 14-week period.

Instructional Routine

A cycle for teacher instruction of the students emerged after the third week. The cycle proceeded as described. The teachers introduced new rubric descriptors such as openings, details, elaboration, sentence structure, or transitions and provided models in the form of state-developed anchor papers. The students and teachers discussed characteristics of each descriptor and then reviewed reflective questions based on the specific descriptor. As stated in an earlier section, the researcher developed the model for the reflective questions based on the New Jersey rubric and Writers' Checklist. Then, as a class and under the guidance of the teacher, students revised the language of reflective questions to make it easier to understand. The students and teachers also revised the language of the descriptors from the New Jersey Holistic Scoring Rubric to make it easier for the students to use as a self-assessment device. The teachers described the revised rubric and reflective questions as "student friendly." The students added phrases to the rubric such as "my opening has..." (see Appendix C). The revised rubric and reflective questions still included the criteria from the New Jersey Registered Holistic Scoring

Rubric and Writers' Checklist but the language was appropriate for fourth-grade students. Then the students used the revised parts of the rubric and reflective questions to assess a piece of their writing. The teachers built upon the skills of each week and repeated the process.

Throughout the process the teachers used individual conferencing, peer conferencing, whole-class discussions, and student goal setting as ways to develop and practice self-assessment strategies.

Classroom Observations

The researcher conducted one observation of each teacher in the X-group during the 10 week of the study. The researcher observed the teachers implementing the content they learned during the staff development sessions. The observations occurred within three days of each other. The researcher observed that the teachers' instructional behaviors were congruent with the environmental mode of instruction. Both teachers structured the communication of their lessons similarly to that used by the researcher during the staff development.

Each lesson observed by the researcher began with the teacher interacting with the entire class and disseminating information. The information raised awareness among the students about the objective of the lesson. The communication was one-way with the teacher acting as the sender of information. Then activities occurred in both lessons in which students worked in small groups or pairs. The teachers conducted two-way small group and individual communication. Both teachers provided demonstrations of strategies and skills when appropriate. The demonstrations occurred with the small groups and individuals. The teachers encouraged students to share strategies and

information. The researcher observed each of the X-group teachers using inductive questioning strategies to review the concepts of self-assessment instead of giving directives. The teachers provided wait-time for the students to reflect and recall strategies. The X-group facilitated student-led reviews of the self-assessment strategies. Each teacher's questioning review lasted between seven and ten minutes. Then each teacher implemented a 'think-pair-share' strategy to facilitate the student-led revision sessions. Both teachers used similar phrases and terminology to facilitate the activity. Teacher D said, "Now you have to decide what changes to make to your work. Think about the types of (reflective) questions you are going to ask yourself when revising." Teacher E said, "You need to share with your partner the types of questions you might ask yourself as you revise your papers." The teachers' terminology and methods of structuring the activities were consistent with the environmental mode of instruction.

Teacher D said on several occasions, "Tell your neighbor your idea." This appeared to be an attempt by Teacher D to facilitate student led diffusion of information. The teachers focused their efforts on individual students who appeared to have difficulty implementing self-assessment strategies. They provided individual instruction when needed. Both teachers closed their lessons by interacting with the entire class. This method of teaching is congruent to Achilles' (1986) assertion that the communication/change model is also a model of teacher behavior when conducting a lesson. Figure 3 illustrates the teaching/communication model used by the X-group teachers during the lessons observed by the researcher. The names of the stages are taken from Achilles and Norman (1974).

The researcher's observations were supported in reflective logs written by the X-group teachers. The teachers described changes in their instructional practices since beginning the study. Their reflections were congruent with the environmental mode of instruction. The environmental mode of instruction was congruent with the skills taught to the students. The teachers had to facilitate the self-assessment process without over controlling it. The researcher observed two-way communication during the lessons.

Stage of Lesson	Purpose	Communication	Audience
I: Opening of Lesson	Dissemination	One-way	Entire class
II: Practice	Demonstration	Two-way	Small groups and individual students
III: Student-led Review	Diffusion	Two-way	Individual students
IV: Closure	Dissemination	One-way	Entire class

Figure 3. Similarity between the X-group teachers' instructional structure and the change/communication model developed by Achilles and Norman (1974).

Reflective Logs

The teachers in the X-group wrote reflection papers toward the end of the staff development process based on the questions developed by Killion (1991). The responses from the teachers indicated a shift in instructional thought and attitudes away from the presentational mode and toward the environmental mode. Comments from both X-group

teachers are presented. Teacher D wrote, “The teaching of reflective questioning allows a writer to take control of his own writing. The “old” way of handing back a paper, or even conferencing with a student, and telling them what needs to be fixed doesn’t (help the student) internalize why it needs to be corrected. It’s done because the teacher says it should be.”

Comments from Teacher E were similar and added an aspect of teacher self-assessment and reflection. Teacher E wrote:

My awareness of how children learn is evolving. I recognize the importance of understanding and utilizing new strategies and techniques to address the needs of the students...In the past my instruction tended to be linear and concentrated on direct product outcomes... Though students wrote more frequently (before the staff development training) they were generally unable to make significant revisions to their own work or the work of their peers. Their work was brought to “showcase” final product as a result of an editing conference with an adult. I believed that speaking with students about their work would help them improve it. I did not recognize that this process usurped students’ ownership of their writing, nor did I recognize that I was neglecting to provide students with opportunities to develop the skills necessary to the revision process. ...The control I exerted over my students’ writing interfered with student development of metacognitive or self-directed abilities.

The researcher observed the use of an instructional mode, congruent to the teachers’ reflective comments, during an in-class observation completed for this study. Formal data were not collected to be included in the teachers’ professional folders as the

classroom observations were informal and not supervisory in nature. The researcher had an agreement with the teachers that classroom observations would be informal and not evaluative.

The data collected from interviews, classroom observations, and reflective logs of the X-group teachers were congruent with Achilles' (1999) comments. He wrote:

Models of communication and of change are important to teaching, especially if some change in behavior (or gain in knowledge, or transfer of skill) is attributed to teaching. Teaching is a conscious act of communicating for a purpose, often a predetermined purpose where the purpose is instruction or learning. This can be emphasized by connecting the models of communicating and of change into the teaching and learning process. The three-level model of change can also represent a basic conceptualization for learning... If a learner is going through a change process, and learning is change, then the first thing the learner must do is become aware of and interested in something to stimulate the change... In analyzing teaching and learning this way, an effective instructor can structure lessons, experiences, etc. to help the learner move from awareness (cognitive) to adoption/adaptation or use. The teacher plans instruction using a change and communication model as a basis. An educational leader helps create a better situation or may resolve a problem or issue by working through this three-step process. (p. J4)

Posttest Assessment Description

The teachers from the X and O groups administered a narrative writing picture prompt assessment at the completion of the 14-week experiment. The assessment was

part of the school district's regularly scheduled battery of tests and assessments.

Assessors from ECS in Marlton, New Jersey scored the student papers using the six-point New Jersey Registered Holistic Scoring Rubric and the scoring system adopted by the State to score the narrative writing section of the fourth-grade ESPA.

The scores were divided into two categories for the purpose of this study. The assessors scored each paper for content and organization and assigned a holistic score. The researcher asked that the assessors assign a specific score for content and organization because the staff development provided to the teachers focused on improving that aspect of students' narrative writing.

The category for content and organization assessed the students' ability to organize thoughts, present ideas in a logical format that is cohesive and fluent, and provide details and elaboration. The assessors assigned a score of one to six to each student's writing sample. The holistic score represented content and organization, usage, sentence construction, and mechanics.

Quantitative Results

The researcher compared the characteristics of the students taught by the teachers in the X and O groups to establish that the students were comparable. The comparisons were made using the following characteristics: (a) Class Standard Age Scores (SAS) from the Verbal section of Cognitive Abilities Test (COGAT), (b) eligibility for free or reduced lunch, (c) special education classification, and (d) number of students in each group eligible for gifted and talented instruction. Table 2 displays the class verbal SAS mean scores.

Table 2

Student Characteristics of the O and X Groups

Teacher / Class	Group	n	SAS Verbal	# F/R Lunch	% F/R Lunch	# Gifted / Talented
A	O	20	106.1	3	15	0
B	O	21	109.0	4	19	2
C	O	21	103.3	2	9.5	0
Average	O		106.1		14.5	
D	X	17	104.3	3	17.6	1
E	X	19	108.2	3	15.7	1
Average	X		106.3		16.6	
Total		98				

Note: Mean score the test is 100 and standard deviation is 15.

Free or Reduced is abbreviated F/R for this table.

The researcher excluded the scores of learning-disabled students who received special education services. The O group contained five learning-disabled students and the X group contained four learning-disabled students.

Total N including learning-disabled students receiving special education were: A) 22, B) 22, C) 22, D) 22, and E) 19.

The amount of scores included for analysis (n) is listed above in the table.

Riverside Publishing manufactures the (COGAT). The school district contracts the company to score the tests. Average SAS scores on the verbal section of the COGAT range from 85 to 115. The mean is 100 and the standard deviation is 15. The class SAS verbal section mean scores on the COGAT for the students in the O and X groups ranged from 103.3 to 108.2.

Taken intact, the X and O group classes performed similarly on the verbal section of the COGAT. Students from the X and O groups compared well in other ways such as COGAT SAS verbal mean scores. The groups compared similarly based on the number of students eligible for participation in Gifted and Talented programs. The numbers of students eligible for free or reduced lunch were compared. The X-group had a higher percentage of students eligible.

Taken intact and excluding the scores of the learning disabled students receiving special education services, the students in the X and O groups were similar in their overall characteristics.

Content and Organization Scores

The literature reviewed for this study suggested that teaching students to use scoring rubrics and reflective questions will impact their ability to enhance the content and organization of their writing but have little effect if any on the mechanics. Therefore, the researcher compared the content and organization score frequencies of the X and O-groups. The scores of students classified as special education were not included in the analysis and the researcher excluded the scores of the students eligible for gifted and talented during the secondary analysis found in Appendix G. The decision to exclude the scores of the students eligible for gifted and talented programs from the secondary

analysis was based the work of Piaget (1950) and his stages of development. The students deemed eligible for gifted and talented services in the researcher's district demonstrated the ability to operate at higher levels of Bloom's taxonomy, think abstractly, analyze hypothetical situations, and function abstractly with language. They received specific instruction in problem solving and abstract thinking as part of the gifted and talented program and thus may have possessed the skills necessary to self-assess their writing prior to this study.

The raw scores for content and organization ranged from one to six according to the rubric. The X-group (n=36) did not have any students score in the lowest category, while 4.8% of the students in the O group (n=62) scored at the lowest level. The X-group had a lower frequency of students who scored a 2, 11.1%, compared to the O-group which had 25.8% attain the second lowest score on the narrative writing assessment. Therefore, 30.6% of the students in the O group scored at the two lowest levels while only 11.1% of the students in the X-group scored similarly. It should be noted that a score of 3 was considered proficient as measured by New Jersey's ESPA test.

The majority of the students in the X group, 58.3% scored a 3 compared to 46.8% of the O group while 16.7% of the students in the X group achieved a 4 compared to 17.7% of students in the O group. None of the students in the O group attained a 5 compared to 8.3% of the students in the X group. Students in both groups achieved the highest score of 6 at similar levels with 5.6% of students in the X groups earning a 6 and 4.8% of the students in the O group. Table 3 contains a summary of the non-compacted frequencies.

Table 3

Frequency of Non-Compacted Content / Organization Rubric Scores for X and O Groups

Experimental Group (n=36)			Control Group (n=62)		
Rubric Score Frequencies			Rubric Score Frequencies		
Score	%	n	Score	%	n
1 Partially Proficient	0	0	1	4.8	3
2 Partially Proficient	11.1	4	2	25.8	16
3 Proficient	58.3	21	3	46.8	29
4 Proficient	16.7	6	4	17.7	11
5 Advanced	8.3	3	5	0	0
6 Advanced	5.6	2	6	4.8	3

Note: These frequencies are for non-compacted scores. Non-compacted scores are the scores achieved for each category of the rubric. A lower percentage of students taught by teachers in the X group scored in the two lowest categories. A majority of the students taught by teachers in the X group scored in the third or fourth categories. For later analysis the researcher compacted score point categories 1-2, 3-4, and 5-6 to form three categories: 1,2, and 3.

The mean of the X-group (n=36) was 3.39 with a standard deviation of .99. The mean of the O-group (n=62) was 2.97 with a standard deviation of 1.04. The researcher conducted a test for homogeneity of variances because the groups were not the same size. Levene's Test for Equality of Variances produced an F score of .229 providing a non-significant ($p > .05$) of $p < .63$. Table 4 contains a summary of the means.

Table 4

Quantitative Data Output Describing Content / Organization Scores for X and O Groups

Group	n	Mean	Standard Deviation
X	36	3.39	.99
O	62	2.97	1.04
Total	98		

The researcher performed a chi-square analysis to determine if the difference in score frequencies for the categories were statistically significant. The researcher compacted the categories from six to three for two reasons. First, the sample size and six score point categories caused several cells of the chi-square analysis to have fewer than the required five cases. Second, New Jersey reports ESPA achievement to students, parents, and school officials based on three categories. The three categories include 'Partially Proficient', 'Proficient', and 'Advanced Proficient'. The researcher compacted the six score points into three categories that parallel the reporting format of the ESPA. The 'Partially Proficient' category consisted of score points 1 and 2. The 'Proficient'

category consisted of score points 3 and 4 and the 'Advanced Proficient' category included score points 5 and 6. The results of the compacted scores appear in Table 5. Note that compacting the six categories into three categories has the potential to reduce the variances between the groups and lessen the possibility of obtaining significant differences.

Table 5

Frequency of Compacted Content / Organization Rubric Scores for X and O Groups

Experimental Group (n=36)			Control Group (n=62)			
Rubric Score Frequencies			Rubric Score Frequencies			
Score	%	n	Score	%	n	% Difference X and O
1 Partially	11.1	4	1	30.6	19	19.5
2 Proficient	75	27	2	64.5	40	10.5
3 Advanced	13.9	5	3	4.8	3	9.1

Note: To achieve the compacted frequencies, the researcher combined the non-compacted frequencies from categories 1 + 2 = 1 Partially; 3 + 4 = 2 Proficient; 5 + 6 = 3 Advanced. (See Table 3 for non-compacted frequencies.)

A value for chi-square of 6.354 at two degrees of freedom (df) was calculated.

This value exceeded the critical value for chi-square of 5.991 and was statistically

significant ($p < .05$) at .042. This indicated that the differences in the frequencies observed between the X and O groups were not by chance. Table 6 summarizes the results of the chi-square analysis.

There is a statistically significant difference ($p < .05$) between the frequency of rubric scores from the X and O groups. The null hypothesis is rejected.

The researcher performed effect size calculations. A value of .30 was observed. See Appendix G for the calculation of effect size statistics.

Table 6

Chi-square Analysis of Rubric Scores from the X and O Groups

Observed and Expected Frequencies	Frequency Category 1	Frequency Category 2	Frequency Category 3	Total Row Frequencies
Observed X Frequencies	4	27	5	36
Expected X Frequencies	8.4	24.6	2.9	
Observed O Frequencies	19	40	3	62
Expected O Frequencies	14.6	42.4	5.1	
Total Column Frequencies	23	67	8	98

$$\chi^2 = 6.354 \quad df = 2 \quad p < .05$$

Student Self-Assessment

The X-group teachers taught the students in their classes how to use a rubric to self-assess their work. The students scored their own writing samples on three occasions.

The teachers compared the student scores to scores assigned by the teachers. The initial scoring session produced an inter-rater agreement of 62% between the teachers and students. By the third scoring attempt, the students in the experimental groups achieved inter-rater agreement with the teachers at a rate of 72%.

Summary

The researcher analyzed the scores of intact groups excluding the scores of learning-disabled students receiving special education services. The researcher reported the frequency of non-compacted and compacted writing scores related to content and organization and presented the data in tables.

Chi-square analysis was performed for the compacted frequencies of writing scores to determine if there was a significant association between the students taught by teachers who received the staff development and higher scores on the writing assessment. Secondary analyses were performed using t-tests and the results are presented in Appendix G.

Chapter 5 contains a summary of the findings and conclusions. Recommendations for future studies, policy initiatives, and practice are presented.

CHAPTER V

Introduction, Summary of Findings, Conclusions, and Recommendations

Introduction

This chapter presents a summary of findings, conclusions, and recommendations for practice, policy, and future research. The conclusions and recommendations for practice link communication and change theory to results-based applications that educators can use to inform practice. The researcher discusses qualitative data collected from teacher reflective logs and classroom observations and quantitative data gathered from student writing samples. Secondary analyses are presented in Appendix G.

This study was conducted to determine the effects of staff development on student achievement. The researcher compared achievement on a narrative writing assessment of students who were taught to use rubrics and reflective questions as self-assessment devices with the achievement of students whose teachers did not have this training, use the strategies, and did not receive the instructional content.

The delivery of staff development followed a change model structure by Achilles and Norman, (1974) and Achilles, (1999). The model consisted of three stages: (a) Dissemination, (b) demonstration, and (c) diffusion. The model was specifically designed to describe a process that change and communication theory suggested should facilitate learning.

Additional works on communication and change theory including those by Rogers (1962), Guba and Clark (1967), Hughes and Achilles (1971), Yankelovich (1991), and Achilles et al. (1997) were consulted when developing an action plan for the staff development. The X-group teachers received job-embedded staff development. Job-

embedded staff development in this study was defined as continuing staff development that took place in the context of the classroom and focused on teacher behaviors related to instruction and student learning. Typical job-embedded activities include action research, peer coaching, structured study groups, mentoring, and calibration exercises. An agenda for the staff development meetings conducted with the X-group teachers is found in Appendix F.

Summary of Findings

The results indicated a statistically significant difference ($p < .05$) in the frequency of rubric scores for the experimental (X) and control (O) groups. The null hypothesis stated that there would be no difference in the frequency of scores on a narrative writing assessment between students taught by teachers who received the staff development and students of teachers who did not receive the staff development. A lack of replicable research and compelling theoretical literature suggesting otherwise supported the use of the null hypothesis.

The researcher used the generally accepted .05 level of significance in social science research (Babbie, 1999; Krathwohl, 1998). Staff development may have contributed to the positive impact on the score frequencies of the students taught by the X-group teachers, most notably in the lowest and highest score categories. The results rejected the null hypothesis.

Summary of Qualitative Data Analysis

Data suggested that the teachers from the X and O groups began the study with similar self-reported teaching styles. All teachers ($n=5$) described their teaching styles using terms consistent with the presentational mode of instruction. The teachers in the X

group completed self-reflection logs during the last three weeks of the training. The self-reflection logs indicated a shift in their self-reported teaching styles. Excerpts from the logs are found in Chapter 4.

The descriptions in the reflective logs were congruent with the environmental mode of teaching. Hillocks (1981) found the environmental mode to be an effective mode from which to instruct students in the area of narrative writing skills and self-assessment. The environmental mode provides a middle ground between the teacher-directed presentation mode and the less structured, student-selected instruction of the natural mode. It is suited for teaching self-assessment and reflective strategies to students because the students must take an active role in the learning process to implement self-assessment strategies. The students must be able to make independent revisions and choices based on criteria instead of reproducing or imitating the corrections and suggestions written by the teacher. The teacher facilitates the learning process instead of controlling it.

The self-reported change in teaching style was confirmed by classroom observations. The researcher observed the X-group teachers exhibiting instructional practices aligned with the environmental mode after receiving staff development. The practices included facilitating student-led activities based on skills and knowledge learned during staff development instead of activities controlled and directed exclusively by the teacher. The teachers used inductive questioning strategies and allowed the students to reflect upon their actions as writers. The students made the adjustments to their writing based on knowledge of the scoring rubric and reflective questions. The

teachers permitted the students to apply the skills they learned in a personalized manner instead of being required to imitate the teachers' actions.

Summary of Quantitative Data Analysis

The researcher analyzed the differences ($p < .05$) in the frequencies of writing content and organization scores of the O ($n=62$) and X ($n=36$) groups and reported scores for compacted scores and non-compacted scores. The researcher compacted the score-point categories from six to three. Score-point compacting was necessary because of sample size and to match the reporting categories reported on the ESPA. The researcher excluded the scores of learning disabled students who received special education instruction from the score analysis. The analysis included scores from 98 students. The researcher observed a chi-square value of 6.354 at 2 degrees of freedom ($p < .042$).

Score Frequencies

A lower percentage of students, 11.1% in the X-group, scored in lowest compacted category, 'Partially Proficient', compared to 30.6% of students in the O group. The majority of the students in the X group, 75%, scored in Category 2, 'Proficient' compared to 64.5% of the students in the O group. A higher percentage of students in the X group, 13.9%, attained a score in Category 3, 'Advanced' compared to 4.8% of students in the O group.

The researcher observed similar results for the non-compacted scores. Few students in the X group scored in the lowest of the six categories (see Table 3). The majority of the students in the X group scored in category 3. Assessors in New Jersey consider writers proficient if they attain a score of three or higher. The frequency distributions indicated that 88.9% of the students in the X group scored in categories 3 to

6 compared with 70.3% of the students in the O group. A higher percentage of students in the X group, 75%, scored in the middle categories 3 and 4 compared to the students in O group. Sixty-five percent of the students in the O group achieved a 3 or 4 on the assessment.

Conclusions

Staff Development and Student Achievement

The researcher hypothesized that staff development would not have a significant effect on student achievement. The results of the statistical analysis indicated otherwise. The groups were different after the staff development. The students in the classes taught by the teachers in the X group performed better on the narrative writing assessment than the students taught by the teachers in the O group. Significance in this study is congruent to the findings of Caulfield-Sloan (2001). In Caulfield-Sloan's study students taught by teachers trained to ask higher-order questions performed better on an open-ended science question assessment when compared with students taught by teachers who did not receive the staff development. Staff development used as in the present study and the Caulfield-Sloan study influenced student outcomes positively.

Changes in Teachers' Instructional Mode

The teaching styles of the X-group teachers changed from presentational to environmental mode by the conclusion of this study. Caulfield-Sloan (2001) stated that staff development directly influenced the instructional practices of the teachers in her study. The teachers' instructional practices impacted positively the students' performance on an open-ended question assessment. The results of this study supported that conclusion. The data collected through pre workshop interviews, classroom

observations, and reflective logs suggested that the instructional mode of the teachers in the X group changed from presentation mode to environmental mode (Hillocks, 1981) during this study. The shift in the teachers' instructional mode may demonstrate a link between staff development and a change in teaching behavior in this case, although the perceived change in instructional practices may be due to other factors not accounted for by this study.

The findings suggest that staff development can be a factor used to change teachers' instructional behavior when implemented in a deliberate and planned manner. This conclusion is similar to those from other studies on the topic, most recently by Garet et al. (2001). The change in teacher behavior can lead to a change in student outcomes. In this case the change was student learning and improved narrative writing as measured by the New Jersey Registered Holistic Scoring Rubric.

Student Understanding of Writing Criteria

The students in the X group rated three of their narrative writings using a scoring rubric. They achieved an inter-rater agreement of 62% with the teachers in the X group on their first attempt seven weeks into the study. By the 12th week of the study the students achieved an inter-rater agreement of 72% with the teachers in the X group. The high rate of agreement corresponds to Sager's (1973) findings. The students in that study achieved an estimated agreement of .96 ($r^2 = .92$). Students who are taught to use rubrics can achieve an understanding of the criteria for proficient writing and identify and apply those criteria. The students were able to apply the criteria taught by the teachers to their writing and make positive revisions to their work. The level of student/teacher agreement achieved by the students in this study demonstrated that the students responded to the

writing instruction, were able to think critically about their work and make positive revisions. The students and teachers agreed about the criteria of quality writing. Students characterized by the school district as average or below average were able to self-assess, reflect, internalize, and apply the criteria.

Small Class Size for Staff Development

The size of the staff development group could have been a positive factor in this training model. The X-group teachers received the staff development in a small class size setting (n=2). Teachers, and not just students, may benefit from structured, small-group and individual instruction.

Tennessee's Student Teacher Achievement Ratio (STAR) study showed that small classes with 15 or fewer students achieved at higher levels when compared to their peers in regular size classes with 22-27 students or classes with an aide (Finn and Achilles, 1990, 1999). Students clearly benefited from small class sizes in the STAR study.

Caulfield-Sloan (2001) used staff development training groups with 14 and 13 participants. The small class size for the staff development was common to this and Caulfield-Sloan's study. Both studies presented staff development in small class sizes and the data from each study demonstrated that the students taught by teachers who participated in small staff development classes performed better than the students of teachers who did not receive that type of training.

The idea that class size would magnify the positive impacts of staff development is congruent with the use of the communication-based change model in this study. Because the model's utility is limited to social and interactive change processes that rely

upon communication, small class sizes facilitate teacher and student interaction and the transfer of ideas. An important aspect of the model is two-way small group and individual communication. Based on this, and the continuing lack of substantive findings, one could conclude that small class size for staff development is one factor that enables a teacher to move an innovation beyond the dissemination phase. Figure 4 illustrates the four-stage model and communication process synthesized by Achilles et al. (1997).

Communication Element	Stage I: Dissemination	Stage II: Demonstration	Stage III: Diffusion	Stage IV: Institutionalization
Relation to Change	Awareness/Interest, Dissemination of Information, Consciousness Raising	Trial/Evaluation; Demonstration ; Working Through	Use/Adoption; Diffusion; Resolution	Constant Renewal of all Persons in the Process
Message (Purpose)	Understanding. Conceptual Control.	Skill Building. Expanded Knowledge Base.	Transfer of Skill and Knowledge.	Refinement of Skills and Knowledge. Relationships.
Methods and/or Media: Sender or Transmitter	Journal; Memos; Conference Presentations; Mass and One-way Communication.	Demonstration; Group Work & Discussion; Case Study; Q&A; Two-way Communication.	Simulation; Role Play; Practice with Feedback; Q&A; Training; Use of an Action Plan	Reflection; Self-monitoring; Synthesis / Application; Peer Coaching and Discussion.
Targeted Audience	Individual; Large Groups. Undefined / Uncertain	Individual; Small Groups; Job-Alike Groups. General Definition.	Individual; One-on-one. Specific Persons.	Precise and Specific Individual.
Assessment Strategies	Paper and Pencil; Oral Comments; Memory; Cognitive.	Observation; Discussion. Practice Cognitive/ Affective	Observation of Use; Critique: Self Reports. Cognitive	Individual Long-term Growth. All Modes.

Figure 4: A four-stage Communication/Change Model used as the guide for the staff development process in this study.

The teachers in this study were part of a process based on change and communication theories. The staff development followed a specific three-stage model (see Figure 2) developed by Achilles and Norman (1974) that was later expanded by

Achilles, Achilles, and Reynolds (1997). The model was based on earlier change and communication works by Rogers (1962), Rogers and Shoemaker (1971), Achilles and Norman (1974), Berman and McLaughlin (1974), and Yankelovich (1991).

Small class size for staff development, the use of a specific communication/change model, and a change in teaching behaviors may produce positive effects on student achievement.

Recommendations for Practice and Policy

Staff Development Planning and Implementation

The authors of the No Child Left Behind (NCLB) Act included the phrase “scientifically based research” over 100 times in the body of the legislation. A stated intent of the act is to increase the use of experimental or quasi-experimental designs to evaluate educational programs, including staff development initiatives.

This study is relevant to district-level staff development planners and educators who must provide high-quality, effective staff development and evaluate its impact on student achievement. The literature surrounding the ability of staff development programs to impact positively student achievement as measured traditionally has been inconclusive. The results suggested carefully planned, small class size staff development implemented with an awareness of change processes can be empirically tested and impact student achievement and change the instructional practices of teachers.

Those responsible for planning staff development may be assisted in designing and conducting effective activities by being aware of change models and theories based on scientific research found to provide observable and measurable benefits. Effective

staff development should be planned and implemented according to research related to change processes, adult learning theory, class size, and proven instructional practices.

Administrators must create the organizational conditions that maximize the effectiveness of staff development. Staff development planners can match the goal of the development with the appropriate format as illustrated in Figure 4. For example, staff development aimed at diffusion and innovation must move from large-group to small-group, job embedded, learning activities. The administrator could make the appropriate organizational arrangements to provide small-group, classroom-based support to the staff members. A comprehensive district-wide staff development program may have various levels of change activities occurring simultaneously based on the stages of diffusion and the specific needs of staff members.

Knowledge of Change

Change is a constant in education. Technology, student assessment, standards, mandates, and curriculum exemplify some aspects of education currently changing and transforming. Fullan (1997) wrote that, “Even in the relatively simple case of detailed, not dynamic, complexity almost all educational changes of value require new skills, behavior, and beliefs or understanding” (p. 36).

School district administrators and teachers initiate, facilitate, and attempt to manage change forces and processes. District-level leaders and building principals must connect change models and factors affecting change with staff development delivery practices and methods to evaluate the effectiveness of their development programs. Principals stand on the front lines of educational change. They are directly responsible for the instruction provided by teachers and are crucial in any school-level attempt to

improve instructional practice (Wood & Thompson, 1993). In the end, the principal must provide instructional leadership and support to those involved in educational change and learning.

Administrators should be familiar with Lewin's (1948) concept of force-field analysis with restraining and driving forces. Fear, habits, attitudes, and beliefs can be strong restraining forces and principals must understand how to produce commitment from the restraining forces. Principals should be aware that the harder they push the change process the harder the system will push to deny the change.

Administrators can use the communication/change model from this study to overcome the forces described by Lewin (1948) and Fullan's (1997) concept of the implementation dip. Engaging people in small groups helps to neutralize restraining forces by motivating the "unfreezables" staff members and limiting the influence of the "cryogenics" (Evans, 1996). "Unfreezable" is a term used to describe people who unintentionally resist an innovation. They may think they are implementing change but nothing is changing because they are stagnant professionally. However, "unfreezables" are willing to grow if the conditions are right. "Cryogenic" refers to someone who is not going to change under any circumstances. Engaging these types of people in small groups, as recommended by Achilles et al. (1997) during the demonstration and diffusion stages, enables the administrator to isolate the cryogenics so they do not contaminate the thinking of others. It allows the administrator to spend concentrated time and energy unfreezing others and helping them move toward accepting the innovation.

Job-Embedded Staff Development

Study results showed that teachers and students benefited from the type of staff development provided during this study. Small class sizes for the training sessions and structured job-embedded staff development facilitated the teachers' use of what they learned during the sessions. The content of the staff development sessions was directly related to classroom instruction and it addressed issues specific to each of the teachers' classrooms and the students in those classrooms. This aspect of the staff development was consistent with several of Wood and Thompson's (1993) assumptions about effective staff development, especially assumptions 5, 9, and 10 (see Appendix A). Job-embedded staff development fits well with the change/communication model used in this study. Proponents of job-embedded staff development recommend small-group settings, content focused practices, and skills related to the participants' classrooms.

Teacher Evaluation and Observation

This study and Caulfield-Sloan's (2001) work demonstrated that staff development can be evaluated empirically by examining student outcomes. This provides administrators with research-based methods to observe and evaluate the effectiveness of staff development programs using a student-centered, outcome-based learning lens along with an instructional practice lens. The tradition of observing teachers and lessons based solely on an instructional sequence or checklist of teacher behaviors can be replaced or supplemented with methods that empirically measure the effects of teaching behaviors on student achievement. Proven instructional techniques combined with research-based evaluation techniques can provide the type of

accountability called for in the NCLB legislation while ensuring that teachers and programs receive objective evaluations.

Continuing Education Requirements

Teachers, and soon administrators, must accrue 100 hours of professional development every five years. A paradigm shift from accruing hours toward impacting positively student achievement is necessary. The shift can be accomplished by requiring student achievement data and measurable results from staff development training sessions to be part of every New Jersey teachers Professional Improvement Plan.

Limitations of the Study and Recommendations for Future Research

There are several limitations related to this study. These limitations also contribute to recommendations for future research.

Larger numbers of teachers and students in multiple districts and various socio-economic strata need to be involved in studies similar to this to determine the impact of large scale job-embedded staff development on student achievement. Including larger numbers of teachers and districts could also allow others to examine the impact of demographics. This study involved an N=5 teachers and N=98 students.

Further examination of the impact of small class size for staff development is needed. Researchers should look at three groups: X1, X2, and X3, where X1 receives staff development training A in small group ($n < 15$) setting. X2 receives the same content but in a group larger than 15 but less than 25 participants. X3 receives the training in a large group ($n > 25$) setting.

The impact of increasing the amount of time that teachers receive staff development for a specific instructional practice is an area in need of study. This study

lasted less than four months. Future researchers might study one or multiple years with cohorts of teachers and students.

This researcher conducted the staff development and therefore, the possibility of bias existed. An impartial staff development provider could be used in future studies.

The in-depth examination of the impact on students identified as average versus those identified as gifted is needed because the secondary analysis in this study suggested that the staff development for teachers impacted average students differently to a greater extent than those identified as gifted.

The change in teacher behaviors, attitudes and instructional modes as a result of different forms of staff development could be studied. The impact of job-embedded staff development versus a traditional off-site workshop deserves study.

The lasting impacts of the staff development on teachers and students should be studied. Follow-up interviews, observations, and data collection could determine whether the staff development was self-sustainable.

Conclusion

This study helped to cultivate further the empirical link between effective staff development and student achievement. The conclusions highlighted the importance of using research-based change models and communication theory when planning staff development. One goal of professional educators should be to affect change. Whether the change is based on achievement, attitudes, or instructional practices, the process of change must be facilitated. Educators can use communication theory and change models to impact positively teacher practice and affect the lives of children. Communication can be a powerful tool when properly structured and facilitated.

REFERENCES

- Achilles, C.M. (1986, Nov.). *New perspectives on change and the change process: Teaching and learning as viewed through communication elements and change processes*. Mimeo. Paper presented to Administrators and Supervisors Council, Milwaukee, WI.
- Achilles, C.M. & Norman, C.D. (1974). Communication and change in education. *Planning and Changing*. 3, 138-142.
- Achilles, C.M., Dickerson, C., Dockery-Runkel, L Egelson, P. & Epstein, M. (1992). *Practical school improvement: The Mary Reynolds Babcock Project at Moore School*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Achilles, C.M., Reynolds, J.S. & Achilles, S.H. (1997). *Problem analysis: Responding to school complexity*. Larchmont, NY: Eye on Education.
- Applebee, A.N, Langer, J.A., Mullis, I.V.S. & Jenkins, L.B. (1990). *The writing report card: Findings from the nation's report card*. Princeton, NJ: Educational Testing Service.
- Babbie, E. (1999). *The basics of social science research*. New York: Wadsworth Publishing Company.
- Bennett, N. (1976). *Teaching styles and pupil progress*. Cambridge, Massachusetts: Harvard University Press.
- Berman, P & McLaughlin, M. (1974). *Federal programs supporting educational change, Volume I, A model of educational change*. Santa Monica, CA: Rand Corporation.

- Bloom, B. (Ed.). (1956). *Taxonomy of educational objectives: The classification of educational goals*. (Handbook I). New York; Toronto: Longmans, Green.
- Breyer, B.K. (1979). Pre-writing and rewriting to learn. *Social Education*, 43(3), 187-200.
- Brickell, H.M. (1961). *Organizing New York State for Educational Change*. New York: State Department of Education.
- Bruer, J.T. (1995). *Schools for thought: A science of learning in the classroom*. Cambridge, MA: The MIT Press.
- Campbell, D.T., & Stanley, J.C. (1963). Experimental and quasi-experimental designs for research on teaching. In N.L. Gage (Ed.), *Handbook of research on teaching*. pp. 171-246.
- Caulfield-Sloan, M. (2001). *The effects of staff development of teachers in the use of higher order questioning strategies on third grade students' rubric science assessment*. Unpublished doctoral dissertation, South Orange, New Jersey: Seton Hall University.
- Clifford, J. P. (1981). Composing in stages: The effects of a collaborative pedagogy. *Research in the Teaching of English*, 15, 37-53.
- Cohen, D.K., & Hill, H.C., (1998). *Instructional policy and classroom performance: The mathematics reform in California*. (CPRE Research Report Series RR-39). University of Pennsylvania, Consortium for Policy Research in Education.
- Cohen, E. & Scardamalia, M. (n.d.). *The effects of instructional intervention in the revision of essays by grade six children*. Downsview, Ontario: York University.

- Coleman, D.R. (1982). The effects of pupil use of a creative writing scale as an evaluative and instructional tool by primary gifted students. *Dissertation Abstracts International*, 42, 3409-A
- Coleman, J.S. , Campbell, E.Q., Hobson, C.J., McPartland, J., Mood, A.M., Weinfeld, F.D., & York, R. L. (1966). *Equality of educational opportunity*. Washington, DC: U.S. Government Printing Office.
- Committee on Testing and Basic Skills, (1978). *Improving educational achievement*. Washington, DC: National Academy of Education.
- Cros, F. (1998). L'innovation en education et formation: vers la construction d'un objet de recherché?. In Organization for Economic Co-operation and Development (Ed.), *Innovating Schools* (pp. 55-79). Centre for Educational Research and Innovation, France.
- Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1).
- Dewey, J. (1915). *The School and Society*. Chicago: Chicago University Press.
- Driver, R. (Ed). (1988). *A constructivist approach to curriculum development*. New York, NY: Teachers College Press.
- Edmonds, R. (1979). Effective schools for the urban poor. *Educational Leadership*, 37, 15-18.
- Evans, R. (1996). *The Human Side of Change*. San Francisco: Jossey-Bass Publishers.
- Elkind, D. (1996). Early childhood education. What should we expect? *Principal*, 75(5), 11-13.
- Faran, N. (1990). Writing is interactive, not recursive. *Journal of Reading*, 34, 221.

- Finn, J.D., & Achilles, C.M. (1990). Answers and questions about class size: A statewide experiment. *American Educational Research Journal*, 27(3), 557-577.
- Finn, J.D., & Achilles, C.M. (1999, Summer). Tennessee's class size study: Findings, implications, and misconceptions. *Educational Evaluation and Policy Analysis*, 21(2) 97-109.
- Fleming, D. (1998). Rhetoric as a course of study. *Urbana*, 61, 169-191.
- Fullan, M. (1997). The complexity of the change process. In Michael Fullan (Ed.), *The challenge of school change* (pp. 33-56). Arlington Heights, IL: Skylight Professional Development.
- Garet, M.S., Porter, A.C., Desimone, L., Birman, B.F., & Yoon, K.S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, 38(4), 915-945.
- Graves, D. (1981f) *A case study observing the development of primary children's composing, spelling, and motor behaviors during the writing process*. Final report, NIE Grant No. G-78-0174. Durham, New Hampshire: University of New Hampshire. ED 218 653.
- Guba, E., & Clark, D. (1967). An examination of potential change roles in education. In: *NEA Center for the Study of Instruction. Rational planning in curriculum and instruction*. Washington, D.C.: National Education Association.
- Guskey, T. R. (1997). Research needs to link professional development and student learning. *The Journal of Staff Development*, 18 (2).
- Harwell, M., D'Amico, L., Stein, M. & Gatti, G. (2000). *The effects of teachers' professional development on student achievement in community school district #2*.

Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Hillocks, G. (1981). The responses of college freshmen to three modes of instruction. *American Journal of Education*, 89, 373-395.

Hillocks, G. (1986). *Research on written composition*. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, National Institute on Education.

Hughes, L.W., & Achilles, C.M. (1971). The supervisor as a change agent. *Educational Leadership*, 27(8), 840-843.

Jordan, H.R., Mendro, R.L., & Weersinghe, D. (1997). *Teacher effects on longitudinal student achievement: A preliminary report on research on teacher effectiveness*. Paper presented at the National Evaluation Institute, Indianapolis, IN.

Joyce, B. & Showers, J. (1983). *Power in staff development through research on training*. Arlington, VA: Association for Supervision and Curriculum Development.

Katz, E. (1961). The social itinerary of technical change: Two studies on the diffusion of innovation. *Human Organization*, 20, 70-82.

Killion, J. (1999). *What works in the middle: results based staff development*. OH: National Staff Development Council.

Krathwohl, D.R. (1998). *Educational and social science research*. New York: Longman, Inc.

Langer, J.A., & Allington, R. (1992). Curriculum Research in Writing and Reading. In P.W. Jackson (Ed.), *Handbook of Research on Curriculum* (pp. 687-725). NY: Macmillan Publishing Company.

- Lapp, D., & Flood, J. (1989). Reporting reading progress. A comparison portfolio for teachers. *The Reading Teacher*, 42, 508-515.
- Lewin, K. (1948). *Resolving social conflict*. New York: Harper & Row.
- Lieberman, A., & Wood, D. (2002). The National Writing Project. *Educational Leadership*, 59(6), 40-43.
- Loucks-Horsley, S., Hewson, P. W., Love, N., & Stiles, K.E. (1998). *Designing professional development for teachers of science and mathematics*. Thousand Oaks, CA: Corwin Press.
- National Commission on Excellence in Education. (1983). *A Nation at Risk*. Washington, DC: United States Department of Education.
- National Education Goals Panel. (1991). *National education goals report: Building a nation of learners*. Washington, DC: U.S. Government Printing Office.
- New Jersey Department of Education, Office of Standards and Assessment. (1998). *New Jersey Registered Holistic Scoring Rubric*.
- New Jersey Department of Education, Office of Standards and Professional Development. (1999). *Professional Development Resource Guide*.
- Norton, J. (2001). Grounded in research. *Journal of Staff Development*, 22(3).
- Peixoto, K.M. (1993). *A vision of science and mathematics for all*. Paper presented at the Annual Conference of the National Middle Schools Association, Portland, Oregon.
- Piaget, J. (1950). *The psychology of intelligence*. London: Routledge & Kegan Paul.
- Rogers, E.M. (1962). *Diffusion of innovations*. New York: The Free Press.

- Rogers, E.M., & Shoemaker, F. (1971). *Communication of innovations*. New York: The Free Press.
- Rogers, E.M., & Shoemaker, F. (1983). *Communication of innovation. 2nd Edition*, New York: Macmillan.
- Sager, C. (1973). Improving the quality of written composition through pupil use of a rating scale. *Dissertation Abstracts International*, 34, 1496A
- Sanders, W.L., & Rivers, J.C. (1996). *Cumulative and residual effects of teachers on future student academic achievement*. Knoxville, TN: University of Tennessee.
- Senge, P. (1990). *The fifth discipline*. New York: Doubleday.
- Schmoker, M. (2000). What can we learn from big gains in writing? *Results*, Dec./Jan. 2000.
- Showers, B. & Joyce, B. (1996). The evolution of peer coaching. *Educational Leadership*, 53(6), 12-16.
- Sparks.D. & Hirsh, S. (1997). *A new vision for staff development*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Speck, M. (1996). Best practice in professional development for sustained educational change. *Journal of School Research and Information*, 14(2), 33-40.
- Stickland, D.S., Jones, K. M., Bodino, A., & Buchan, K. (2001). Teaching writing in a time of reform. *The Elementary School Journal*, 101(4), 385-397.
- von Glaserfeld, E. (1995). *Radical constructivism: A way of knowing and learning*. Washington, DC: Falmer Press.
- Wood, F., & McQuarrie, F., Jr. (1999). On-the-job learning. *Journal of Staff Development*, 20(3).

Wood, F., & Thompson, S. (1993). Assumptions about staff development based on research and best practice. *Journal of Staff Development, 14*(4) 52-57.

Wright, S.P., Horn, S.P., & Sanders, W.L. (1997). Teacher and classroom context effects on student achievement: Implications for teacher evaluation. *Journal of Personnel Evaluation in Education, 57-67*.

Yankelovich, D. (1991). *Coming to public judgment: Making democracy work in a complex world*. Syracuse, NY: Syracuse University Press.

APPENDIX A

Staff Development Assumptions

Wood and Thompson (1993) suggested 14 assumptions that should be followed when planning staff development.

1. The school, not the district, is the primary focus of improved practice and staff development.
2. Significant change in education practice takes considerable time and is the result of staff development that is conducted over several years.
3. A school culture supportive of improved practice and professional growth is essential to successful staff development.
4. All educators should be involved in staff development throughout their careers.
5. The principal is key in any staff development effort to improve professional practice.
6. Selection of the improvement goals that guide staff development should involve those who have a stake in the future of the students in that school.
7. Those who are changing their professional behavior must make an individual and collective commitment to and feel ownership for the new programs and practices before they will want to participate in staff development activities.
8. Staff development programs should support opportunities for both school improvement and individual professional growth.

9. Staff development should enable school personnel to improve professional practice in ways that increase student learning.
10. Knowledge about adult learners should serve as the basis for planning and implementation of staff development.
11. Change in professional practice is difficult and requires systematic support to implement and sustain over time.
12. School districts have the primary responsibility for providing the resources and staff development necessary for a school faculty to implement new programs and instructional practices.
13. Staff development should support instructional and program improvement and should be closely lined to instructional supervision, teacher evaluation, and curriculum implementation.
14. School-based staff development, site based management, and site-based budgeting are all important components of school-based improvement.

APPENDIX B

Teacher Questionnaire

The compiled data from the completed questionnaires are found in Table 1.

Teacher Code _____

School Code _____

Number of Years of Teaching Experience _____

Number of Years Teaching Fourth-Grade _____

Undergraduate Degree _____

Concentration(s) of Course Work in College _____

Teaching Certification(s) _____

Post-Graduate Coursework _____

Post-Graduate Degree(s) _____

Writing Instruction Background/Coursework _____

How Would You Describe Your Teaching Style? _____

How Would You Describe How You Teach Writing? _____

APPENDIX C

New Jersey Registered Holistic Scoring Rubric

This rubric was published by the New Jersey Department of Education (1998).

APPENDIX D

Reflective Questions

Openings:

I used the following type of opening. *(Circle the ones used)*

<i>dialogue</i>	<i>action</i>
<i>question</i>	<i>background</i>
<i>setting</i>	<i>exclamation</i>

One way I can improve my opening to make it more interesting for the reader is to

How does my opening focus my writing on the task? _____

Here is my new opening:

Details, Explanations and Examples:

I used structure words that made the writing more enjoyable for my audience. (what, when, size, sound, color, shape, where, movement, mood, and number)

Some examples of my exciting and descriptive words, phrases, and sentences are:

This is a sample of my sentences that I need to rewrite to provide more detail for my audience. I circled the parts that I think I can improve:

Here are my improved sentences:

Central Idea and Sequence:

This is an example of a weak transition with little elaboration.

This is an example of the revised transition that will improve the quality of my writing for my audience.

Mechanics:

This is one way I can improve my mechanics:

APPENDIX E

Student-Centered Scoring Rubric

This is a copy of the actual scoring rubric used the students in this study.

	1	2	3	4
Keep the Central Idea or Topic in Mind	<ul style="list-style-type: none"> •The point of my writing is unclear •My topic is unclear and/or I have too many topics 	<ul style="list-style-type: none"> •The point of my writing is not completely clear •The reader may have difficulty identifying the type of writing (narrative, informative, persuasive) •My writing has too many topics 	<ul style="list-style-type: none"> •My writing tells a story or makes a point about a single topic •Most of my writing relates to the same topic or task •The reader can identify the type of writing (narrative, informative, persuasive) 	<ul style="list-style-type: none"> •My writing tells a specific story or makes an obvious point about a topic •My writing directly relates to the same topic or task •The reader can identify the type of writing (narrative, etc.)
Keep the reader in mind	<ul style="list-style-type: none"> •I failed to use language and tone appropriate for my reader 	<ul style="list-style-type: none"> •I attempted to use language and tone appropriate for my reader, but have not been successful 	<ul style="list-style-type: none"> •I attempted to use language and tone appropriate for my reader and was somewhat successful 	<ul style="list-style-type: none"> •I successfully used language and tone that appropriate for my reader
Support your ideas with details, explanations and examples	<ul style="list-style-type: none"> •I have very few details and facts 	<ul style="list-style-type: none"> •Some of my ideas are developed in the writing •I included some details and facts in my writing •Some of my details and facts are related to the topic I am writing about 	<ul style="list-style-type: none"> •All of my ideas are developed •I included details and facts in my writing •All of my details and facts are related to the topic I am writing about 	<ul style="list-style-type: none"> •All of my ideas are fully developed in the writing •I included specific details and facts in my writing •All of my details and facts are related to the topic
State your ideas in a clear sequence	<ul style="list-style-type: none"> • Most of my writing is hard to follow •I did not use paragraphs to organize my ideas 	<ul style="list-style-type: none"> •Some parts of my writing are difficult to follow •I used some paragraphing to organize my ideas 	<ul style="list-style-type: none"> •My writing flows from one thought to another •I used paragraphs to organize my ideas 	<ul style="list-style-type: none"> •My writing flows from one thought to another without confusing the reader •I used paragraphing well
Include an opening and closing	<ul style="list-style-type: none"> •My writing does not have an opening and closing. 	<ul style="list-style-type: none"> •My writing has some evidence of an opening and closing 	<ul style="list-style-type: none"> • My writing has an opening and a closing 	<ul style="list-style-type: none"> •My writing has an obvious opening and closing
Use a variety of words & vary your sentence structure	<ul style="list-style-type: none"> •I did not use many strong words (most were ordinary) •I did not vary my sentences and they did not flow easily 	<ul style="list-style-type: none"> •My writing uses some strong words •I varied the beginnings of a few of my sentences • Some of my sentences flow easily 	<ul style="list-style-type: none"> •My writing uses strong words and I used different words for said •My sentences flow naturally •I used simple and complex sentences •I varied the beginnings of my sentences 	<ul style="list-style-type: none"> •My writing uses many strong words. I used a variety of words for "said" •My sentences flow. I used simple and complex sentences •I varied the beginnings of sentences

	1	2	3	4
Capitalize, spell and use punctuation correctly	<ul style="list-style-type: none">• I showed minimal control of grammar, mechanics, spelling, usage and sentence formation which interferes with understanding my writing	<ul style="list-style-type: none">• I showed limited control of grammar, mechanics, spelling, usage and sentence formation so that it interferes with understanding writing	<ul style="list-style-type: none">• I showed clear control of grammar, mechanics, spelling, usage and sentence formation	<ul style="list-style-type: none">• I showed excellent control of grammar, mechanics, spelling, usage and sentence formation

APPENDIX F

Summary of Staff Development Topics

A summary of the weekly staff development sessions and their relation to the three-stage change/communication model (Achilles & Norman, 1974) used in this study.

0. *Dissemination*: Provided X-group teachers with literature about self-assessment (rational, examples, theoretical and practical background).
1. *Dissemination*: Reviewed the scoring rubric and reflective questions. Calibrated X-group to rubric descriptors. Introduced the rough draft of reflective questions and explained the relationship to the rubric.
Demonstration: Collaboratively planned instruction for Week 2 on self-assessing openings and discussed instructional methods.
2. *Dissemination*: Conducted question and answer (Q&A) session about perceived implementation difficulties and brainstormed methods to overcome. Reviewed self-assessment of openings using reflective questions and rubric. Provided information relative to instructional strategies.
Demonstration: Reviewed methods to help students apply their knowledge of openings, rubric descriptors for openings, and reflective questions for openings to their own writing. Brainstormed strategies for students to revise an opening of one of their original writings based on their self-assessments.
Planned next week's instruction on student driven revisions of the reflective questions for openings. Revisions to be made based on student understanding of NJ Holistic Scoring Rubric and classroom instruction relative to openings.

3. *Demonstration:* Q&A relative to last week and brainstormed methods to overcome. Presented methods to facilitate student revisions of the set of reflective questions for openings. Developed plans for students to self-assessed their and peer's openings to an original story.

Dissemination: Introduced reflective questions and rubric descriptors that applied to the body of a narrative writing piece. This included details and elaboration. Discussed teaching students how to apply their knowledge of previously learned topics to their revised writings based on revised reflective questions and self-assessment.

Demonstration: Planned for next week's instruction. Re-calibrated teachers relative to their understanding of details and elaboration and discussed ways to deliver understanding to students. Stressed student reflection and self-assessment of their work as primary focus.

4. *Demonstration:* Q&A related to last week and brainstormed methods to overcome. Discussed teaching students to self-assess and score the opening and body of one piece of their own narrative writing using the rubric.

Dissemination: Introduced inter-rater agreement and scoring methods that should be applied to student papers to compare teacher score to student score and methods of communicating the skill to the students.

Discussed methods to facilitate student creation of a "kid friendly" scoring rubric based on the descriptors of the NJ Holistic Scoring Rubric rewritten by students in words they understand and teaching students to ask themselves questions relative to improving their writing. Stress to the X-group that the

questions must be based on the rubric and reflective questions should not be yes or no, but instead 'how' questions.

Demonstration: Planned for next week's lessons on having students self-assess a piece of writing and comparing their assessment to teacher assessment.

Included discussion and practice on having students create reflective questions for details and elaboration.

5. *Demonstration:* Q&A related to last week and brainstormed methods to overcome. Discussed methods for teaching peer assessment and the application to the revision process. Reviewed methods of teaching students to create writing goals based on self-assessment and reflective questions.

Diffusion: Planned an original student writing using the set of reflective questions and rubric descriptors learned to this point.

6. *Demonstration:* Q&A related to last week and brainstormed methods to overcome. Reviewed strategies for teaching students to self-assess their use of sequence, transitions and details and develop reflective questions for sequence and transitions.

Diffusion: Drew upon previously discussed teaching methods to plan strategies for teaching students to improve transitions and sequence.

7. *Demonstration:* Discuss questions relative to last week and brainstormed methods to overcome.

Diffusion: Planned for student self-assessment of another original writing. Conducted analysis of inter-rater agreement between teacher and students. Teachers completed a reflective writing on the staff development process.

8. *Demonstration:* Q&A related to last week and brainstormed methods to overcome. Discussed strategies for teaching students to self-assess sentence structure and descriptive words.
Diffusion: Devised a structure for students to work with a peer to conduct peer-assessments and provide suggestions for improvements based on rubric and reflective questions.
Planned for next week's lesson on having students conduct a peer review of the self-assessment process and brainstorm additional reflective questions.
9. *Demonstration:* Q&A related to last week and brainstormed methods to overcome. Discussed having students complete an original writing and using reflective questions and the scoring rubric throughout the writing process.
Diffusion: Researcher conducted a classroom observation and post-observation conference with each X-group teacher. Planned for next week's lessons on self-assessing closings
10. Teacher and researchers did not meet. Teachers and researcher corresponded via e-mail to answer questions. Teachers sent an e-mail agenda for next week's instruction.
- 11&12. *Diffusion:* Researcher does not meet with teachers due to upcoming State testing and make-up tests. Teachers sent an e-mail agenda for the week's instruction. Teachers continued to provide instruction and practice with the self-assessment process.
13. *Demonstration:* Q&A related to last week and brainstormed methods to overcome. Discussed next week's protocol for writing assessment.

14. Students took narrative writing assessment.

APPENDIX G

Secondary Statistical Analysis

The researcher used parametric and non-parametric tests to analyze data as a follow-up to the initial analysis. The results of the secondary analyses are presented in this appendix.

Chi-square Analysis Excluding Gifted and Talented Students

The researcher conducted a second analysis of the students in the X and O groups excluding students eligible for gifted and talented instruction. The researcher excluded three students from the X group and two students from the O group for this analysis. The district based the eligibility for gifted and talented instruction on verbal SAS COGAT scores, report card grades, and writing portfolio scores. Students must achieve at the ninth stanine on the verbal portion of the COGAT and eighth stanine or greater on the nonverbal portion and achieve a rubric score of 4 points out of a possible 6 points on a narrative writing assessment. Based on Piaget's (1950) stages of development, the students selected for the district's gifted and talented program fit the profile of students operating in the formal operations stage. They demonstrated the ability to self-monitor their written work and make revisions considered to be advanced by their teachers. Excluding their scores from the secondary analysis was appropriate because they possessed the ability to use or already used aspects of the strategies taught during staff development.

The results of the statistical analysis indicated that after the staff development, the students taught by teachers who had the training scored differently than those students taught by teachers who did not have the staff development. The chi-square analysis was

significant ($p < .05$) with a p value of .031. The frequency break-downs showed a similar pattern to those of the primary analysis.

Independent t-test with Intact Groups

The researcher performed a two-tailed independent samples t -test to examine the difference in the mean scores of the experimental and control groups. The researcher used the first test to analyze the difference in mean content and organization scores between the control and experimental groups excluding the scores of students receiving special education services. The second t -test was done to analyze the difference in mean content and organization scores of the groups while excluding the scores of students receiving special education services and those eligible for the gifted and talented program. The independent t -test was used because the scores on this assessment could be considered continuous by some educators.

A value of .052 ($p > .05$) was attained when excluding the scores of students receiving special services. The X-group ($n=36$) achieved a mean score of 3.39 with a standard deviation of .99 and the control group ($n=62$) achieved a mean score of 2.97 with a standard deviation of 1.04. A t -score of 1.964 was observed at 96 degrees of freedom. Results were not statistically significant ($p < .05$).

T-test Excluding Gifted and Talented Students

The researcher analyzed differences in mean scores for both groups excluding those students eligible for gifted and talented and special education services.

An analysis of the difference in mean scores for content and organization revealed evidence to suggest that the staff development had a statistically significant impact, $p < .05$

on the achievement of the students in the experimental group (n=34) compared to those in the control group (n=60).

Table G1

Quantitative Data Results for Content / Organization Scores of Students in the X and O groups

Group	n	Mean	S D	t	p	Effect-size
X	36	3.39	.99	1.964	.052	.30
O	62	2.97	1.04			
Total	98					

The researcher performed a two-tailed independent t-test. The X-group achieved a mean score of 3.32 with a standard deviation of 1.09 and the O-group achieved a mean score of 2.87 and a standard deviation of .89. A p value of .031 ($p < .05$) was attained with a t-score of 2.197 at 92 df. Levene's Test for Equality of Variances produced an F score of 1.330 at a .252 level of significance and 92 degrees of freedom. There is evidence to suggest that the staff development had a statistically significant impact on the ability of average students in the X group to self-assess, reflect, and make appropriate revisions. The results reject the null hypotheses. Table 8 contains a summary of the results.

Table G2

Results for X and O Groups Excluding Gifted and Talented Students

Group	n	Mean	SD	t	p
X	34	3.32	1.09	2.197	.031
O	60	2.87	.89		
Total	94				

APPENDIX H

Letters of Solicitation

Dear Fourth Grade Staff:

I am enrolled in the College of Education and Human Services Executive Ed.D. program pursuing a Doctorate in the Department of Educational Administration and Supervision at Seton Hall University . I will be conducting a formal research study as part of my dissertation.

This study will attempt to demonstrate the measurable difference on a rubric assessment in narrative writing of fourth-grade students who have been instructed by teachers trained in the use of scoring rubrics and reflective questions as compared to students of teachers who have not received this type of instruction. The estimated amount of time involved to participate in this research is twelve weeks.

Two teachers will attend the initial staff development training. They will form the experimental group. The remaining three teachers on the grade level will receive the same staff development after the study is completed. I will request that all teacher participants fill out a questionnaire providing demographic information relative to number of years teaching, certificates held, and gender to aid in the matching of groups to be examined. Questionnaires will be coded to maintain confidentiality of all participants. After the first group of two teachers completes the training, all fourth-grade students will take their regularly scheduled portfolio assessment on narrative writing. The assessment will be scored using the New Jersey Registered Holistic Scoring Rubric. A two-rater system will be employed to score each sample. Data will be analyzed to determine the effects of the staff development.

Participation in the study is voluntary. You may withdraw from the study at any time up to the end of the study without fear of prejudice or reprisal. Any and all information is confidential and no individual results will be included in the study. Data will only be reported in aggregate form. Individual teachers or students will not be identified. All names of participants and students will be coded.

I will be the only person to have access to the specific names and performance of individual participants and no names or identifying information will be used in the dissertation. All data will be kept in a locked cabinet and I will be the only person with access.

This project has been reviewed and approved by the Seton Hall University Institutional Review Board for Human Subjects Research. The IRB believes that the research procedures adequately safeguard the subject's privacy, welfare, civil liberties, and rights. The Chairperson of the IRB may be reached at (973) 275-2974.

Thank you for your cooperation in this endeavor.

Christopher Tienken

Informed Consent Form

Researcher: Christopher Tienken, Candidate for Ed.D.
Department of Educational Administration and Supervision, Seton Hall
University
Executive Ed.D. Program, College of Education and Human Services

Purpose

This is a research project for a doctoral dissertation in the Executive Ed. D. program at Seton Hall University. This study will attempt to demonstrate the measurable difference on a rubric assessment in narrative writing of fourth-grade students who have been instructed by teachers trained in the use of scoring rubrics and reflective questions as compared to students of teachers who have not received this type of instruction. The estimated amount of time involved to participate in this research is twelve weeks.

Procedure

Two teachers will attend the initial staff development training. They will form the experimental group. The remaining three teachers on the grade level will receive the same staff development after the study is completed if positive results are found. The researcher will request that all teacher participants fill out a questionnaire providing demographic information relative to number of years teaching, certificates held, and gender to aid in the matching of groups to be examined. Questionnaires will be coded to maintain confidentiality of all participants. After the first group of two teachers completes the training, all fourth-grade students will take their regularly scheduled portfolio assessment on narrative writing. The assessment will be scored using the New Jersey Registered Holistic Scoring Rubric. A two-rater system will be employed to score each sample. The researcher will analyze the data to determine the effects of the staff development on student performance.

Voluntary Involvement

Participation in the study is voluntary. Participants may withdraw from the study at any time up to the end of the study without fear of prejudice or reprisal.

Anonymity

Any and all information is confidential and individual results will not be included in the study; only aggregate data will be reported. Individual teachers or students will not be identified. All names of participants and students will be coded.

Data Storage

The researcher will be the only person to have access to the specific names and performance of individual participants. Names or identifying information will not be used in the dissertation. All data will be kept in a locked cabinet and the researcher will be the only person with access. All forms and data will be kept for at least three years.

Risks

There are no risks to human participants associated with this study.

Benefits

The expected benefits of this study would be a contribution to existing knowledge about elementary narrative writing instruction, increases in student narrative writing performance, and potential implications for future staff development activities.

Questions

Any questions about this research study should be directed to Christopher Tienken, Emma C. Attales School, 800 Irelan Avenue, Absecon, NJ 08201. 609-641-3329

Copies

The researcher and all participants will be given a copy of the dated informed consent form.

This project has been reviewed and approved by the Seton Hall University Institutional Review Board for Human Subjects Research. The IRB believes that the research procedures adequately safeguard the subject's privacy, welfare, civil liberties, and rights. The Chairperson of the IRB may be reached through the Office of Grants and Research Service. The telephone number of the Office is (973) 275 – 2974.

Subject's Statement:

I have read the material above, and any questions I asked have been answered to my satisfaction.

I agree to participate in this activity, realizing that I may withdraw without prejudice at any time.

Signature of Participant

Date

Superintendent / Principal Consent Form
Seton Hall University
College of Education and Human Services

Researcher: Christopher Tienken
A Candidate for Ed.D.
Educational Administration and Supervision

Purpose and Benefits

This is a research project for a doctoral dissertation in the Executive Ed. D. program at Seton Hall University. This research activity will study the effects narrative writing scoring rubrics and reflective questions used by the classroom teacher as it relates to the assessable performance of students in fourth-grade narrative writing. The expected benefits of this study would be a contribution to existing knowledge about elementary narrative writing instruction and potential implications for future staff development activities. There are no human risks associated with this research.

Procedure

Informal observations of teacher narrative writing instructional strategies will be conducted in the fourth- grade classrooms. Participation is voluntary. Participants will be requested to complete a questionnaire providing demographic information on the participants. Teachers may refuse to answer any question on the interview form, and have the right to review the final data. No names of identifying data will be included in this study.

Other Information

Data, including demographic data, will be confidential, coded and available only to the researcher. Data will be kept and secured for three years and used for the purpose of this research study by named investigator only. The data will be shredded after three years. Teachers may refuse to participate or may withdraw at any time up to the end of the study with no fear of reprisal. There are no anticipated risks, stress or discomfort that will occur as a result of participation in this process. This study will occur from February 2002 to June 2002.

This project has been reviewed and approved by the Seton Hall University Institutional Review Board for Human Subjects Research. The IRB believes that the research procedures adequately safeguard the subject's privacy, welfare, civil liberties, and rights. The Chairperson of the IRB may be reached through the Office of Grants and Research Service. The telephone number of the Office is (973) 275 – 2974.

Signature of Researcher

Date

Subject's Statement:

I have read the material above, and any questions I asked have been answered to my satisfaction.

I grant the researcher permission to conduct this project with fourth-grade teachers in this district.

Signature of Superintendent

Date

Copies to: Superintendent
Researcher

APPENDIX I

Biographical Information

Christopher H. Tienken is currently a middle school principal in New Jersey. He taught elementary school for five years and then worked as an assistant principal. He was a curriculum coordinator for a K-8 school district before becoming a principal.

Christopher completed his undergraduate studies at Kutztown University in Pennsylvania and earned his Master of Education from Rutgers University. He entered Cohort V at Seton Hall in 2001. He has been published nine times.